⨊ ATARI®

Atari Works™

USER'S MANUAL

INSTALLATION

Congratulations on your purchase of AtariWorks™ software--the complete package for home or office automation!

Installing your software couldn't be simpler--the first thing is to make a copy of your AtariWorks Installation Disk. Then put the original in a safe place, away from dust, moisture, or magnetic fields, and use the copy to proceed.

1.   Boot your system, or return to the desktop.

2.   Place the copy you made of the AtariWorks Installation Disk in your A: drive. Double-click on the A: drive icon.

3.   Double-click on INSTALL.PRG and follow the screen directions. The prompts will tell you when installation is complete.

That's all there is to it. In your C: drive, you'll find a file titled WORKS.PRG. Double-click on it and away you go!

Be sure to read the rest of this manual so you can get the most from your new software.

This manual was written on an Atari Falcon030™ computer using the AtariWorks Word Processor. It was edited, produced and illustrated using PageStream* desktop publishing software on an Atari TT030™ computer.

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WELCOME

Welcome to AtariWorks™ -- all the office tools you may ever need to automate your work:

- A *Word Processor* with drawing and mail merge.
- A *Database* with reporting.
- A *Spreadsheet* with charting.
- --And a way to use them all together.

The Word Processor

Click on the Word Processor to write and edit text. Cut and paste electronically to polish your prose. Change the margins and watch AtariWorks make everything fit. Change words quickly and easily by using search and replace functions. Format your document using real fonts with a few clicks of the mouse. Draw lines, circles, and boxes for extra flair. Paste in graphics and charts to illustrate your text. With Marginalia, you can place notes in your document for viewing within AtariWorks. Audio Annotator (available on Atari computers equipped with DMA sound) allows you to leave voice or sounds as marginal notes in your text files.

The Database

Click on the Database to file information. Add new records and remove the ones you don't need. Sort lists to organize your reports. Have AtariWorks quickly search for the information you need. Prepare numerous reports from one set of information--with each report providing just the facts you need.

The Spreadsheet

Click on the Spreadsheet to organize and calculate numbers. Set up elaborate formulas and let AtariWorks get the answers for you. Change your assumptions, change your numbers, and see what you get. Choose from a multitude of built-in calculations to make your work easier. Use the spreadsheet's charting capability to see what your spreadsheet numbers look like in charts. Change a number in a spreadsheet document and instantly see

how it affects your charts. Try different comparisons using the same document. Spot trends at a glance, or see who's got the biggest piece of the pie.

Using the Tools Together

With AtariWorks, you can not only work with several tools at once, you can also move information from one tool to another. For example, you can write a letter with the Word Processor, check an address in the Database, project future sales with the Spreadsheet, and see how your projections look with the Spreadsheet's charting capability. Then you can copy the chart into your letter for a finished, professional effect.

AtariWorks takes full advantage of Atari's FSM/SpeedoGDOS™ component to provide you state-of-the-art, true scalable font technology. The Word Processor and the Spreadsheet provide true *What You See Is What You Get* screen displays of your documents. Thus, when you print a document from the Word Processor or Spreadsheet, you are assured of eye-pleasing results.

About this Manual

Read this manual when you're ready to start using AtariWorks. This manual is divided into six sections. The next section, **Common Tasks,** guides you through tasks that you'll perform every time you use AtariWorks. These include activities such as creating, saving and printing documents. The next three sections explain the individual AtariWorks tools: the **Word Processor,** the **Spreadsheet,** and the **Database**. The last section, **Using the Tools Together,** explains how to integrate information from all the different tools.

COMMON TASKS

OPENING A FILE OR CREATING A NEW DOCUMENT

When you start AtariWorks, you'll see the item selector box containing icons for each of AtariWorks tools. Word Processing is the default choice:
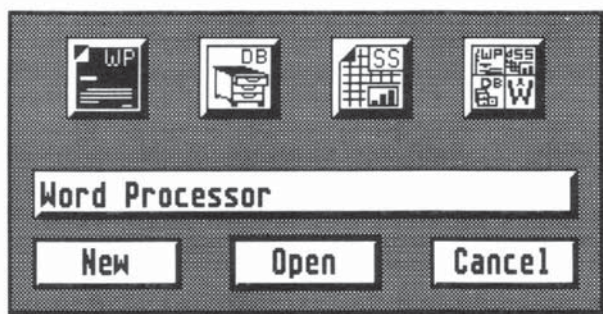
Use this box to open files from the disk or to create new documents in one of the AtariWorks tools. You can have up to seven open documents on your desktop at once, depending on how many windows are supported and the amount of available memory.

Creating a New File

1. If you are already in AtariWorks, click on **New** from the **File** menu to display the item selector box (or press [Control]-N).

2. Click the icon for the type of document you want to create.

3. Click the **New** button. A new document window opens on the desktop.

Opening a File

1.   If you are already in AtariWorks, click on **Open** from the **File** menu to display the item selector box (or press [Control]-O).

2.   Select the appropriate tool icon.

3.   Click the **Open** button. AtariWorks displays a file selector box listing all relevant files and folders on the current disk.

4.   Select the name of file you want to open.

5.   Click the **OK** button or double click the file name. AtariWorks opens the file in a new document window on the desktop.

Importing a File

1.   Click on **Import File...** under the **File** menu (or press [Shift]-[Control]-O).

2.   A dialog box appears with options regarding the AtariWorks tool into which you want the file to be imported and the format of the file requested.

3.   Make your choices and click on **OK**.

4.   The Item Selector screen appears. Select the name of the file you want to import.

5.   Click the **OK** button. AtariWorks reads the selected file and opens the proper document window, with the imported document.

SAVING DOCUMENTS

To save a document for the first time:

1.   Choose **Save As...** from the **File** Menu (or press [Shift]-[Control]-S). AtariWorks displays the Save As... dialog box, which is ready to accept

the name you type in.

2.   Type a name for the document.

3.   To save on another directory or drive, give the full pathname.

4.   Click the **OK** button or press the [Return] key. Click the **Cancel** button if you decide not to save.

Note that AtariWorks saves its various documents with the following unique extensions:

> .STW   Word Processor file
> .STD   Database file
> .STS   Spreadsheet file

Note: If you wish to use a different extension after the 8-letter filename, type a period (.), then a three-letter extension of your own choice.

To save changes to a document:

If you're working with a document that you've already saved, you can save changes as you work (and it's a very good idea)! Choose **Save** from the **File** menu or press [Control]-S. AtariWorks saves the changes, and you can continue working with the document.

To save a document with a different name:

When you want to save both an original file and a new file with the changes you've made to it, you can save the document with a different name:

1.   Choose **Save As...** from the **File** menu or press [Shift]-[Control]-S. AtariWorks displays the Save As dialog box, which is ready to accept the name you type in.

2.   Type a new name for the document.

3.   Click the **OK** button or press the [Return] key. If another file with the

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name you've typed is already on the disk, AtariWorks asks if you want to overwrite it. You can go ahead or cancel the command. Either way, the original file remains unchanged.

Exporting a File

To export a file to another program, you must save it as an ASCII text file. This means that only the data, and not the formatting information (fonts, margins, indents, etc.), is saved. Choose **Export File...** from the **File** menu.

CLOSING A DOCUMENT

When you want to remove a document from the desktop, you close it. Choose **Close** from the **File** menu, or press [Control]-W, or click the closer box in the upper-left corner of the window. If you've made any changes to the document, AtariWorks asks if you want to save the changes. You can **Save** with changes, **Abandon** your changes, or **Cancel** the command. Cancelling the command leaves the document in the window, while the other commands close the window.

VIEWING DOCUMENTS IN WINDOWS

The **Window** menu contains options for handling the way things appear in document windows. In the Word Processor, the Window menu also includes toggle options for showing or hiding the Ruler and the Tool Bar.

Full/Small Window

This is a toggle option for using the whole screen or just part of it.

Preferences...

Default Font

Choices in this box include setting the default typestyle and size, plus other

aspects of text style. To see a menu of the choices available, click inside the applicable box.

ASCII Export

This specifies whether an exported ASCII file will have a hard return after each line (the default setting) or only after the end of a paragraph.

Spelling Checker/Thesaurus Settings

Click on this box and a dialog box appears in which you can change the location(s) for the Spelling Checker and the Dictionaries. You might want to do this if you have several different user dictionaries, for example, or if space on a particular drive becomes a problem.

Short Date Format

Click on this box to see the various style options available. Click on another to change the default.

Activate Document

If you have more than one document open on the desktop, choosing this option will present a list of the documents open. Click on the one you want activated; it will come to the top.

HEADERS AND FOOTERS

When you want to print information at the top or bottom of every page, use a header or footer. The same information will appear on every page, except that page numbers will appear sequentially. Headers and footers are set up using the same dialog box. The Define Header/Footer dialog box is accessed by clicking on the **Header/Footer...** option under the **File** menu.

1. The first option in the dialog box allows you to choose whether you want to define a header or footer. Click to make your choice.

2.   Next choose a font for the header or footer. Click on the right-hand button of the bar and a list of available fonts will drop down. Click to choose. Then specify a size, which can be typed in on the blanks provided. Although there are three blanks (the range of sizes is from 1 to 144 points), you can type in single and double digit numbers.

3.   The next option in the dialog box is Style, where icons are provided to set your text as normal, bold, italics, underlined, outline or in any combination (except normal) you may choose.

4.   In the Distance from the Top box, type in the amount of space from the top of the page to the base of the header you want. In the Distance from the Bottom box, type in the amount of space from the bottom of the page to the base of the footer you want.

5.   On the last line of the dialog box, type in the text you wish to be displayed as the header or footer. To indicate information such as the current date, page number, or document name, AtariWorks provides a set of formatting commands, which can be entered on this line. These are described below.

To use special formattings in the Headers/Footers

You can use special characters to automatically print certain information in your header and footer. The "#" symbol and a letter is the special character set used. The following lists different commands you can use. Either upper- or lower-case letters can be used.

#P   Page Number
#D   Current date, as set in your computer
#T   Current time, as set in your computer
#F   The document name (the extension in the filename is
        omitted)

You can also specify where the information is to appear. Use # followed by L, R, C for information to appear flush left, flush right, or centered. The string following such control characters will be printed according to the control character:

#L   The following string is printed flush left.
#R   The following string is printed flush right.
#C   The following string is printed centered.

You can use these control characters as many times as you want in your header/footer strings. You can also combine these special characters with regular text.

Example: You type #L#F AtariWorks Manual #CPage 5-#P #RDraft #D in your footer box. If the document name is **SECTION5.STW** and you print it on January 7th, the footer on the third page reads:

SECTION5 AtariWorks Manual	**Page 5-3**	**Draft January 7, 1993**

PRINTING A DOCUMENT

You can print documents from all the AtariWorks tools. Although you adjust the format for each tool differently, you print them all the same way using the **File** menu.

Setting Up Your Page

Before you print a document, choose the **Page Setup...** command from the **File** menu (or press [Shift]-[Control]-P) to specify exactly how you want it to be printed. The **Page Setup...** command lets you specify paper size, headers, footers, and margins.

To change page specifications:

1.   Choose **Page Setup...** from the **File** menu. The Page Setup dialog box appears.

2.   Make changes in the dialog box as you want.

3.   Click the **OK** button or press the [Return] key. AtariWorks stores your specifications with the document, so you only have to change them once.

To Use Custom Paper

With AtariWorks, you can print on any size paper that fits into your printer. To use a paper size other than those offered, click the custom size option in the Page Setup... dialog box. For example, click **Custom Size** if you are printing mailing labels. Then you can specify the exact dimensions of your paper in the Paper Width and Paper Height boxes.

To Use the Printer Paper Size Supported by the Printer

Sometimes you may like to print your document on the paper supported by the printer driver. In order to check what size of paper your printer driver supports, click on Set Size to Current Printer. The current printer paper width and height will appear in the paper width and height boxes.

Sending Your Document to the Printer

When you're satisfied with your page setup, you are ready to print your document.

1. Choose **Print...** from the **File** menu or press [Control]-P. If necessary, a Select Printer dialog box appears. Choose the appropriate printer and click the **OK** button. The Print dialog box will appear.

2. Make any desired changes to the print specifications. (Clear entries with the [Esc] key.)

3. Click the **OK** button to accept your specifications. AtariWorks begins to print your document.

To Cancel Printing In Progress

You can cancel the print command at the end of any printer page. Press the [Control]-C keys. AtariWorks may continue to print briefly until the printer's memory is empty. After printing stops, AtariWorks returns you to the document window.

TO QUIT ATARIWORKS

1.   Choose **Quit** from the **File** menu. If you've made changes to your document since the last time you saved it, AtariWorks asks whether or not you want to save the changes.

2.   For each document, click **Save** to save your changes or **Abandon** if you'd rather not. Click **Cancel** to go back.

THE WORD PROCESSOR

You can write just about anything with AtariWorks Word Processor: letters, memos, reports, press releases, advertising copy, or even a novel. AtariWorks also lets you use different fonts and graphics to help convey your written message. Furthermore, Marginalia allows you to place notes in your file that can be called up by someone else using AtariWorks. Owners of Atari computers with DMA sound (STe, TT, and Falcon series) can call up audio notes generated using the Audio Annotation feature.

This Chapter of the manual shows you what you need to know about writing with the Word Processor:

• **Writing and Editing** shows what a word processor document looks like, how to enter and edit text, and how to change the font, the type style, and the type size.

• **Formatting a Document** explains ways to arrange your writing on the page, and how to draw lines and shapes within a document.

• **Marginalia and Audio Annotation** explains how to include private notes in your document. These notes can be written or, in some cases, they can be audio.

• **Illustrating a Document** explains how to draw lines and shapes in your word processing document and how to handle these illustrations as separate graphic files (GEM Metafiles).

If you want to use the Word Processor with other tools--for example, to create form letters or mailing labels with Database information, or to add charts from the Spreadsheet, see **Using the Tools Together** (Chapter 6).

WRITING AND EDITING

When you write and edit with the Word Processor, you don't have to retype whole pages to make a change. You just insert, delete, or correct your text, and AtariWorks automatically adjusts the lines within paragraphs and repaginates. After you finish editing with the Word Processor, you have a finished product, ready to print.

This section shows you how to:

• Recognize the parts of a word processor document, and create a new document.

• Enter text.

• Undo an editing mistake.

• Select text and pictures.

• Delete text and pictures.

• Cut, copy, and paste.

• Find and replace text.

• Change fonts, type styles and type sizes.

To Create a New Word Processor Document or to Open an Existing File

When you start AtariWorks or choose **New/Open** (or press [Control]-N or [Control]-O) from the **File** menu, the Open dialog box appears.

1.   Click on the Word Processor icon.

2.   Click on the **New** button. AtariWorks opens a new word processor

document. You can begin typing.

--or--

1.   Click on the Word Processor icon.

2.   Click on the **Open** button. The file selector box appears.

3.   Select an existing file name to open.

4.   Click on the **OK** button. AtariWorks will open the chosen Word Processor document. You can start writing and editing.

Entering Text

Text is made up of characters--letters, numbers, symbols, and spaces are all characters to the Word Processor. The Word Processor stores the text in your computer's memory until you close the document or name and save the file, in which case it is also stored on disk.

The Word Processor takes care of fitting your words into lines as you type. When you reach the end of a line, any word that doesn't fit within the right indent marker automatically moves to the next line. This is called wordwrap. Wordwrap lets you type complete paragraphs without pressing the [Return] key. If you insert text in the middle of a paragraph, wordwrap automatically expands the lines; if you delete text in the middle of a paragraph, wordwrap closes up the empty space.

The Word Processor [Return] key actually types an invisible character, called a Return character. This character signals the end of a paragraph for wordwrap. You should press the Return key only at the end of a paragraph. Wordwrap makes a neat paragraph of anything between return characters.

If you want to control the ends of lines yourself--as in poetry or lists, for example--you can press the [Return] key at the end of each line. A single line with a return character at the end is just a short paragraph to the Word Processor. Wordwrap won't affect these lines.

You can also use the [Return] key to insert blank lines into your document:

1.   Position the pointer and click (or use the cursor keys) to place the cursor (the flashing vertical line) where you want to insert the blank line.

2.   Press the [Return] key once if you're at the beginning of a paragraph, or twice if you're somewhere in the middle.

You can insert text anywhere in a document by moving the insertion point:

1.   Position the cursor where you want to insert the text.

2.   Begin typing. Your text pushes the insertion point and any following text to the right.

As you continue to type text into your word processor document, you will notice that a horizontal line appears on the left side of your Word Processor Window. This is a page break indicator. For more information about page breaks, see **Formatting an Entire Document** later in this chapter.

When the page break has scrolled up on the screen so that it is the first line in the window, the page number box on the left side of the Tool Bar shows the page number corresponding to the first line of text in the window.

Undoing a Mistake

In many cases, choosing the **Undo** command from **File** menu (or pressing the [Undo] key) cancels the last action you've taken. You can undo most Word Processor commands from the **Edit, Format**, and **Style** menus. If you save your text often (we suggest every ten minutes or so), you may prevent major mistakes that you cannot undo. Saving a document stores a copy of it on your disk. For more information, see **Saving Documents** in Chapter 2.

One other kind of mistake can be easily fixed using the keyboard combination of the [Control] key and the letter T. Sometimes you may find that you have switched around letters in a word. Instead of *form*, for example, you may have typed *from*. To fix this transposition of letters:

1.   Place your insertion point after the transposed characters (after *ro* in the example above).

2.   Press [Control]-T (T for *transpose*). The letters will switch places and they will look like *or* in the example above.

This function is strictly a keyboard function and cannot be accessed by any of the menus.

Selecting Text and Pictures

When you want to do something with a picture or a block of text--remove it, for example--you must first select it. AtariWorks shows a selection by highlighting--turning black letters or pictures on a white background into white on black.

You can select a character, a word, a line, a sentence, a paragraph, any size block of text, or a picture. In most cases, you must select text and pictures separately. However, if, while you are selecting a block of text, you also select a complete picture, then both the text and picture will be selected.

To Select by Dragging

Position the pointer on one edge of what you want to select, and press the left mouse button. Drag to select as much as you want, then release the button. If your mouse pointer goes beyond the window boundaries AtariWorks will automatically scroll the document in the direction and select the text.

Selecting a Single Word

To select a single word quickly, move the insertion point to anywhere inside the word and double-click.

Selecting Lines of Text

Position the cursor anywhere in the line desired. Press [Shift] and double-click the left mouse button. The line is selected. If you want to select more than one line, drag the mouse. AtariWorks selects full lines as you drag.

Selecting Paragraphs

Position the cursor anywhere in the paragraph desired. Press [Control] and double-click the left mouse button. The paragraph is selected. If you want to select more than one paragraph, drag the mouse. AtariWorks selects full paragraphs as you drag.

To Select a Picture

A picture can be a line or figure you draw with the Word Processor, or a chart from the AtariWorks Spreadsheet, or a GEM Metafile you have imported into your document. When you select a picture, a highlighted rectangle encloses the picture.

1. Position the text cursor over the picture you want to select (it should overlap the text cursor).

2. Choose **Select Picture** from the **Edit** menu (or press [Control]-Z).

To Select an Entire Document

You can also select an entire document without dragging the mouse. You may want to do this to change the font or format all the way through. Choose **Select All** from the **Edit** menu (or press [Control]-A). AtariWorks selects all the text and pictures in the document.

Deleting Text

You can delete single characters with the [Delete] or [Backspace] keys, or you can select any amount of text and delete it with the **Cut** or **Clear** commands from the **Edit** menu. You can undo any of these actions with the **Undo** command from the **Edit** menu.

To delete backwards:

1. Position the insertion point to the right of the character(s) you want to delete.

2.   Press the [Backspace] key. AtariWorks removes the character from your document.

To delete forward:

1.   Position the insertion point to the left of the character(s) you want to delete.

2.   Press the [Delete] key. AtariWorks removes the character from your document.

To delete a blank line:

You can delete a blank line to close up the space between two paragraphs. Position the insertion point at the left edge of the first line of the paragraph you want to move back. You can press the [Backspace] key twice to join the two paragraphs into one. Or you can use the [Delete] key with the insertion point where the blank line is.

To delete a selection:

1.   Select whatever you want to delete.

2.   Press the [Backspace] or [Delete] key or choose **Clear** from the **Edit** menu. AtariWorks removes the selection from your document permanently.

--or--

Choose **Cut** from the **Edit** menu or press [Control]-X. AtariWorks removes your selection from the document and puts it on the Clipboard. This leads us to discuss other powerful editing functions.

Cutting, Copying and Pasting

As mentioned, the **Cut** command moves a selection from its current location to the Clipboard. The **Copy** command (or [Control]-C) leaves the selection where it is, but puts a copy on the Clipboard. The **Paste** command (or [Control]-V) copies the contents of the Clipboard to a new location.

The Clipboard is a special place on your computer's hard disk that holds information to be copied or transferred between documents or to different places in the same document. Each time you cut or copy information, the new selection replaces any old one on the Clipboard. The folder C:\CLIPBRD\ holds the information contained in the clipboard.

To cut a selection:

1. Select the information you want to cut.

2. Choose **Cut** from the **Edit** menu (or press [Control]-X). The selection remains on the Clipboard until you cut or copy another selection.

To copy a selection:

1. Select the information you want to copy.

2. Choose **Copy** from the **Edit** menu (or press [Control]-C). The copied selection remains on the Clipboard until you cut or copy another selection.

Once you have cut or copied a selection to the Clipboard, you can paste it to as many different places as you want.

Each time you cut or copy information, the new selection replaces the old one on the Clipboard. So if you want to paste a selection that you've cut or copied, you must do so before cutting or copying anything else.

To paste a selection:

1. Move the insertion point to where you want to paste the Clipboard text.

2. Choose **Paste** from the **Edit** menu (or press [Control]-V).

You can repeat these steps as often as you wish. You can also cut and paste between documents as well as within a document. Text put on the Clipboard remains there as you close one document and open another.

Note: AtariWorks supports intelligent cut and paste. If you select a word by double clicking and choose **Cut** or **Clear** or use [Backspace] or [Delete], AtariWorks will remove any extra blank space along with the deleted word. Also, while pasting text, it pads extra blank spaces around the text being pasted, if needed.

Finding Text

If you're looking for a particular word or phrase, or want to move quickly to specific text within a document, the Word Processor can find it for you. With the **Find** command, AtariWorks finds all occurrences of the text you specify. This can include instances where the text is embedded in other text. For example, if you tell AtariWorks to find *able*, it will highlight those four characters if it finds the word *valuable*. If you want AtariWorks to ignore such occurrences, click the **Match Whole Words Only** option. Also, AtariWorks ignores capitalization in the text you specify to be found. If you want to find only those occurrences of text where the capitalization is exactly as you type it in the text box, click the **Check Case** option.

If you have graphic illustrations in your document, it is very time-consuming when AtariWorks scrolls the document to show you what it has found. To make your search faster, select the **Hide GEM Metafile** option.

To find text:

1.   Choose **Find** from the **Search** menu (or press [Control]-F). AtariWorks brings up a dialog box that asks you what you want to find.

2.   Type the characters you want to find.

3.   Select any of the options you want.

4.   Click the **Find Next** button. AtariWorks highlights the first occurrence of the string of characters if it is in the document.

5.   If you want AtariWorks to look for another occurrence of the text you specified, click the **Find Next** button again.

To cancel a search in progress:

1.   Press [Control]-C. AtariWorks stops the search wherever it is at that point.

If, while you are typing or reviewing your document, you come across a word that is misspelled, you can select the word, and then choose **Find**. The selected word will appear in the Find box, so you don't need to type it. You can then find any other occurrences of the misspelled word. (Also see **Spelling Checker/Thesaurus** later in this chapter.)

Replacing Text

You can replace text in a single location by selecting it and then typing over it. You can also have the Word Processor find a word or phrase for you in a document. Then, you can choose to replace every occurrence of it at once, or decide each case individually.

For more extensive search and replace actions, use the **Replace** command from the **Search** menu. The **Replace** command finds and replaces text. You can replace all occurrences of the text, or you can go through and selectively replace each occurrence, one at a time. As with the **Find** command, you can click options to specify whether AtariWorks searches for whole words only, for text with matching uppercase and lowercase letters, or to hide GEM Metafiles, which speeds searching through documents that contain graphics. You can also select the text you want to replace before choosing the **Replace** command, then have it automatically appear in the Find What box.

Sometimes a word or phrase occurs often, but you want to replace it in only one place. Use the **Find Next** button to find successive occurrences of the specified text until you see the one you want to replace. Or use the same button to verify each occurrence of the specified text before you replace it. After each replacement, you can look for another occurrence.

There are several other buttons in the Replace dialog box. These tell AtariWorks to automatically replace all occurrences of the specified text, replace one occurrence and find the next, or replace only the occurrence you've just found. These buttons are:

Replace All: Click this button to replace all occurrences of the specified text in the document.

Replace & Find: Click this button to replace the selected text and then find the next occurrence of the specified text. AtariWorks selects the next occurrence and waits for your further instructions.

Replace: Click this button to replace the current selection only.

To replace text:

1.   Choose **Replace** from the **Search** menu (or press [Control]-R). A dialog box appears asking you what you want to find and what you want to replace it with.

2.   Type the text you want to find.

3.   Move to the second box by using the down cursor key, the mouse, or the [Tab] key.

4.   In the second box type the new, replacement text.

5.   Select any of the options you want.

6.   Click one of the **Replace** buttons to start search and replace, or click on **Cancel** to exit.

To cancel a search and replace in progress:

1.   Press [Control]-C. AtariWorks stops the search and replace wherever it is at that point.

Changing the Appearance of the Text

You can change the font, type style and type size to add emphasis to or increase the impact of parts of your text. The font name (such as Dutch, Swiss, etc.) is the design of the characters. Each font can have different type styles

(such as boldface or italics) and type sizes (such as 10-point). You can change these characteristics as you're typing, or you can make a selection and then change them for the entire selection.

To change the font or size of a selection:

1.   Select the text you want to change.

2.   Choose **Fonts...** from the **Style** menu (or press [Control]-H). The Font Face Selector box appears. It lists the fonts that you have installed on your computer system from your own GDOS or SpeedoGDOS font sets.

3.   Choose the font name from the list. If it's the correct point size, you can double-click to make your selection. You can also use the scroll window to the right of the font list and click on the font size desired, or type in the font size in the box below. You can choose a size between 1 to 144 points (2 inches tall).

You can just change the font face or the point size of the selected block of text. If you just want to change the font face, erase the contents of the size box by hitting the [Escape] key or backspacing and select the font face you want and click on **OK**. The selected block of text will change to the font face you just selected without affecting the sizes you have used in the selected block.

You can change typestyles in one of three ways:

(1) To change the type style of a selection:

1.   Select the text that you want to change.

2.   Drop down the **Style** menu.

3.   Choose the style you want for your selection.

(2) To change the font style while typing:

From the **Style** menu, you can see that there are keyboard

equivalents to each of the styles available. Using these control key combinations while typing allows you to quickly change styles while never letting your fingers leave the keyboard. These keyboard equivalents are:

[Control]-L: Normal, no style
[Control]-B: Boldface
[Control]-I: Italic
[Control]-U: Underline
[Control]-E: Outline

(3) To use the tool bar to change typestyles:

On the right side of the Tool Bar is a set of icons for changing type styles. By clicking on the symbols **N, B, I, U, O, Su,** and **Sb**, you can then type text in the style represented by the symbol (or a combination of symbols) until you press the N icon for normal text or re-press a highlighted icon to deactivate the style.

Everything you type will have the characteristics you choose until you change them again. If you move the insertion point to text with different font characteristics, whatever you type will appear with those characteristics.

There are no keyboard equivalents to Superscript and Subscript styles, in which case you can use the menu options to choose the style, then continue typing. However, there is yet another way to change text styles quickly--by using a macro.

The Macro Function

The Tool Bar also contains an icon that accesses the Macro function. The Macro function combines the elements of font, style, and size. You can choose from among twenty such combinations to affect the appearance of your text. Macros can be saved and loaded so that style combinations used for a newsletter can be recalled from a previous word-processing session and different style combinations can be recalled for writing memos or letters during the same word-processing session.

The Macro function is set up by use of the Define Font/Size/Style Macro

dialog box under the **Style** menu. The first bar of the box holds the names of the macros created. At the right end of the bar is the button for choosing one of the twenty macros available. These letter/number combinations correspond to the computer's function keys [F1] through [F10]; the same function keys used with the [Shift] key held down correspond to functions [F11] through [F20]. When you press the button, the list of 20 macros is displayed in a popup menu.

For example, if you are creating macro styles for a newsletter, you may want to name macros for Title, Byline, Subhead 1, Subhead 2, and Block Quote. These are the kinds of names you would type onto this first line of the Define Font/Size/Style Macro dialog box.
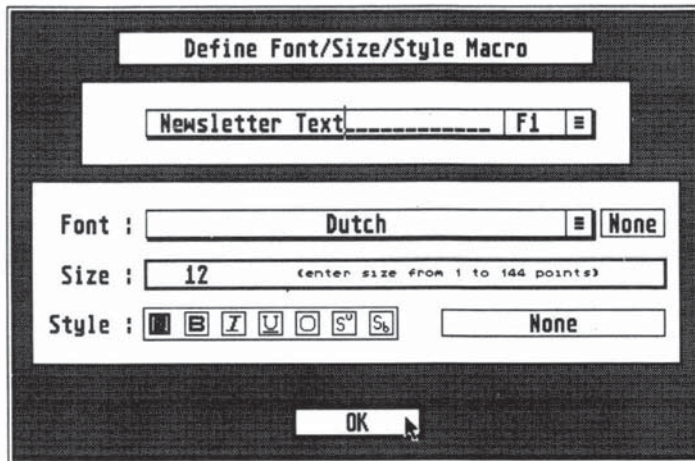
Below the Title/Key Definition bar are areas for choosing fonts, sizes, and styles. The Font box works the same as the first bar by providing a popup menu listing the available fonts. The Size box allows you to type in the size of the font, from 1 point to 144 points. You can type in single digit and double digit numbers using the first two blanks, ignoring the third blank.

The **Style** region includes the same icons used in the Tool Bar for choosing type styles. Choosing **None** means that you may go back to any text formatted with the macro and make individual changes in style.

To create a macro:

1.   Choose **Macro...** from the **Style** menu. The Define Font/Size/Style Macro dialog box will appear.

2.   Click on one of the Function Key lines (F1, F2, F3, etc.) and type in the name of your macro.

3.   Click on the **Font** line and choose a font.

4.   Click on the **Size** line and type in the size of your text.

5.   Click on the icon(s) in the **Style** area to choose your text style.

6.   Click on **OK** to set the macro and exit the dialog box. Pressing the function key you chose will now place you in the format mode you specified.

You may repeat steps 2 through 5 until you have created as many macros as you need (up to 20). You may go back and add more without losing those you have already created. You can also go back and modify ones that already exist.

Once you have created your macros, you will want to save them for future use.

To save a set of macros:

Under the **File** menu, you will find the option for **Save Format/Style...** . Use this command to name and save your macros. They will be saved as individual files with the extension FMT.

To load a set of macros:

Under the **File** menu, you will find the option for **Load Format/Style...** . Use this command to load a macro set you've created. You will be offered the Item Selector from which to choose your macros, which have the extension .FMT.

FORMATTING A DOCUMENT

The format of a document is how it appears on your screen or on paper. With AtariWorks, you can have the Word Processor do much of the formatting as you type. For example, you can specify that the first line of each paragraph should be indented half an inch. The Word Processor will then take care of the indenting--all you do is type and press the Return key at the end of each paragraph.

This section shows you how to

- Change spacing.

- Change the alignment of text.

- Use the ruler to adjust indentation.

- Set tabs and make columns and tables.

- Copy a format.

- Format and print a document with headers and footers.

You can have as many different formats as you want within a single document, but each format you choose will affect one entire paragraph. For example, if you double-space most of a report, but want to single space and indent quotations, make the quotations separate paragraphs. Once you've created a format style, you can copy it whenever you want to use the identical format.

Using the Ruler, Tool Bar, and Formatting Commands

The Word Processor provides two excellent visual tools for handling formatting of documents. Running directly along the top of your text area is the Ruler. With it, you can create format styles for your text. The Ruler provides you

with actual measurements, in centimeters or inches, to determine the length of each line of text relative to the page:

Above the Ruler, you have the Tool Bar, which was mentioned in the previous section. Various icons on the Tool Bar are used in formatting your text.
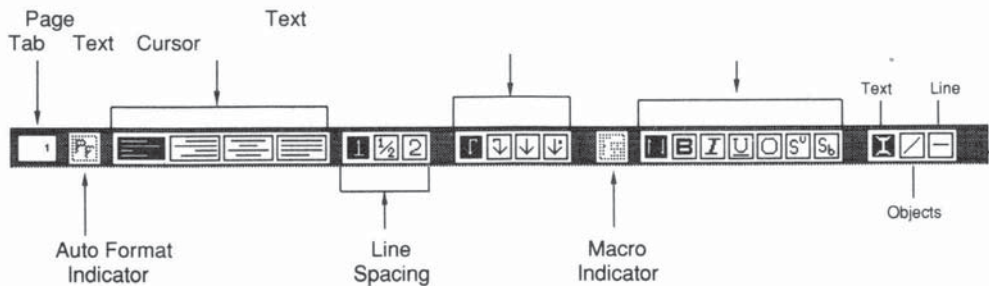
The Ruler and Tool Bar are always available when you first begin to use the Word Processor. If you do not want to have them on the screen, use the **Window** menu and click on the toggle commands **Hide Ruler** and **Hide Tool Bar.** These options will change to **Show Ruler** and **Show Tool Bar**, and can be clicked on to do what the option says. Some formatting actions, such as alignment and indentation, are available only through the Ruler or the Tool Bar.

To choose the units of measurement used by the Ruler, use the **Window** menu and click on **Preferences...** The Set Preference dialog box appears. You will see a popup menu for choosing either centimeters or inches as your units of measure.

Change Spacing

The Word Processor lets you use single, one-and-a-half, and double spacing to determine the amount of space between the baseline of one line of

text and the next. Just click on one of three Tool Bar icons situated between the alignment icons to the left and the tab stop icons to the right. You can also fine-tune the line spacing yourself, using points of type to determine the distance:

1. Position the insertion point anywhere in the paragraph you want to change, or select one or more paragraphs. Use the Select All command from the **Edit** menu to select the entire document.

2. Choose **Line Spacing...** from the **Format** menu. Select a spacing option or define your own using points of type. Click the **OK** button or press [Return].

--or--

2. Click the type of spacing you want on the Tool Bar icons.

The spacing you set remains in effect until you change it. Because spacing is associated with individual paragraphs, if you move to a paragraph with different spacing, the Tool Bar will show whatever spacing is associated with that paragraph.

Note: There are approximately 72 points to an inch. Points are used to define the size of fonts as you will recall from the previous section of this manual. Thus, the capital letters of a a 12-point font are roughly 1/6th of an inch in height. When using scalable (SpeedoGDOS) fonts with AtariWorks, you may wish to follow conventional typesetting rules and set spacing according to the size of the font being used and add 2 more points for fonts under 30 points in size and 3 more points over 30 points. For example, if you use 12-point Dutch, you would use a minimum of 12 points in line spacing, or if you use 36-point Swiss Bold, use 39 points in line spacing.

To do this, go to **Line Spacing** under the **Format** menu and add the additional points (1 to 255).

Changing Alignment

The Word Processor lets you format your text so that all the lines are flush with the left margin, flush with the right margin, or justified (aligned to both margins). You can also center text, such as titles, captions, or lines of poetry. When you create a new document, your text will always start out left-aligned.

To change the alignment:

1.   Position the insertion point anywhere in the paragraph whose alignment you want to change, or select one or more paragraphs. Then use the **Select All** command from the **Edit** menu if you want to select the entire document.

2.   Choose a type of alignment from the **Format** menu or click on one of the alignment icons located toward the left side of the Tool Bar. AtariWorks changes the alignment for the paragraph that contains the insertion point or for the paragraphs you've selected.

The alignment you set remains in effect until you change it. Because alignment is associated with individual paragraphs, if you move the insertion point to a paragraph with different alignment, the Tool Bar will show whatever alignment is associated with that paragraph by highlighting one of the icons.

Setting Indentations

You must use the Ruler to set indentation and tab stops; these choices are not available from the menu. Ruler settings apply to the first paragraph in a selection or the paragraph containing the insertion point. The Ruler comes with standard settings indicated by markers. When you create a new document, the Ruler is already showing.

As you move the insertion point to paragraphs with different settings, you can see the markers change in the Ruler. When you adjust settings with more than one paragraph selected, your new settings affect the entire selection.

The Word Processor lets you set indentation on both the left and the right. You also can set one indentation for the first line of a paragraph, and the same or a different indentation for the rest of the paragraph. If you indent only the first line of a paragraph, you get the standard paragraphs that you see in books. If you indent from both the left and right, you set off a portion of text for emphasis.

If you indent only the lines after the first line of a paragraph, you have what is called Hanging Indentation. This lets you prepare a standard bibliography, for example.

To indent the first line:

You can automatically indent the first line of every paragraph, so that you don't have to press the [Tab] key each time you start a new paragraph.

adflkj
df;lasdf;ljasdf
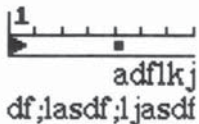
Drag the first line indent marker along the Ruler to the position you want. To see the first-line indent marker (▪), drag the > marker at the left edge of the Ruler. You'll see the box appear. As you type, the first line of each paragraph will automatically be indented.

You can also use this method on previously typed text. Just select the paragraph(s) and follow the above procedure. To change every paragraph in the document use the **Select All** command from the **Edit** menu. The first line of each selected paragraph changes as soon as you release the button.

To set hanging indentation:

You can set up hanging indentation by indenting the lines following the first line of a paragraph. You can do this either before you begin to type or on previously typed text that you select.

1.   Drag the first line indent marker a little to the right, so you can see the entire left indent marker. Or press the [Shift] key and then click on the indent marker and drag. Pressing the [Shift] key gives priority to left indent marker.

asdf;lkjdf;ladj
kfjasdf
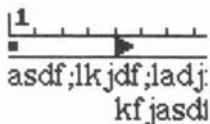
2.   Drag the left indent marker to the position you want for the hanging indent.

3.   Drag the first line indent marker back to the left edge of the Ruler, if necessary.

To indent an entire paragraph:

You can set an indentation that applies to an entire paragraph. You can do this either before you begin to type or on previously typed text that you select.

```
 1
└─┴─┴─┴─┴─┴─┴─┴─┘
      ──►
   asdf;lk
   asdfja
```
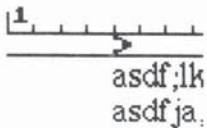
1. Drag the first line indent marker to the position you want.

2. Drag the left indent marker to the same position.

To indent from the right margin:

You can shorten a line or all lines in a selected block of text by
indenting to the left from the right margin. In combination with a left-margin
indent, this can produce a paragraph clearly set off from the surrounding
text (as a "Caution" in a manual, for example).

```
└─┴─┴─┴─┴─┴─┴─┴─┘
      ◄■
   ▲
```
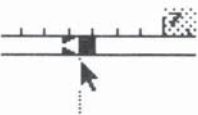
1. Set the pointer on the < symbol at the right margin.

2. Click and drag to the place desired.

Setting Margins

Indentations and margins are not the same in AtariWorks. When you set
an indentation, that space is added to whatever margin you set with the **Page
Setup...** command from the **File** menu. For example, if the left margin is 1 inch
and the left indent is 0.5 inch, the text will begin 1.5 inches from the left edge of
the paper.

Indentation affects text in the selected paragraph(s) or the paragraph
containing the insertion point. You indent to move text in from the margins,
which you set with the **Page Setup** command. For instructions on setting
margins, see **Printing a Document in** Chapter 2.

Note: Unlike *indentations*, the *margins* you set apply to the entire document and
cannot be altered within the same page.

Setting and Using Tabs

Tabs let you skip across the page by measured amounts. Tabs are
measured in inches rather than in number of characters, so the text lines up no
matter what font, size, or style you're using. If you want to type in two or more

columns, you can set a left tab stop for each column after the first one, so that you don't have to type spaces to get to the proper location. Center tab stops can be used to center a heading above a column. Right tab stops help you align columns along the rightmost character. Decimal tab stops can be used to align dollar amounts on the punctuation mark.

Setting tab stops

Default tabs lie at each 1/2-inch mark on the Ruler. You can remove these by setting your own: when you set a tab stop, all default tab stops to the left of the new one are lost.

You can set different tab stops for each paragraph you want to modify. To see the tab stops on the Ruler that correspond to a particular paragraph, select the paragraph containing tab stops.

Left tab   Center tab   Decimal tab   Right tab
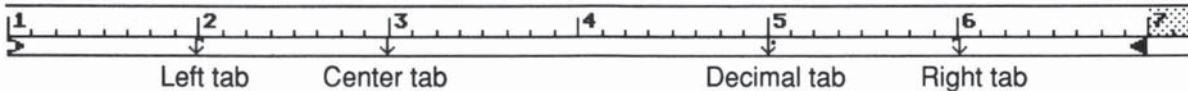
To set tab stops:

Position the pointer in the blank area below the Ruler markings at each place you want to set a tab stop. Click for a left tab stop, press [Control]-click for a right tab stop, press [Shift]-click for a center tab stop, or press [Shift]-[Control] together and click for decimal tab stop.

You can double-click anywhere in the Ruler formatting area to manually enter a tab stop. A dialog box appears with the current position and Left Tab as the default. Set the tab type from the popup menu and enter the position of the tab manually. AtariWorks will place the desired tab at the desired location.

You can also change the tab type and position of an existing tab by double-clicking and following the above procedure.

To move or change a tab stop:

Drag the tab stop symbol to a new location. When you release the mouse button, the text in the selected paragraph(s) or the paragraph containing the insertion point realigns under the new tab stop. A box will pop up giving you an exact measurement for the placement of the tab stop, which you can shift left or right with the mouse button held down until it is in proper position.

You can also click on a desired tab on the Tool Bar and drag it to its desired location on the Ruler.

To remove a tab stop:

Drag the tab stop down into the text area. When you release the mouse button, the tab stop disappears.

Using Tabs for Tables

By setting a series of tab stops, you can make a table. You can use tables to list facts or figures in several columns.

To make a table:

1.   Set a left tab stop for each column of the table.

2.   Move the insertion point to the left edge of the screen and press the [Tab] key. AtariWorks aligns the insertion point with the first tab stop.

3.   Type the first entry for the first time.

4.   Press the [Tab] key to set the second column and then type the next entry.

5.   When you finish with the last entry of the first line, press the [Return] key.

Repeat these steps for each row of your table. Use the center tab stop for

headings, right tab stops for whole numbers, and decimal tab stops to align dollar amounts or decimal numbers.

Using Formats

If you have different components throughout a document that require the same format, you can set the format for one paragraph and then copy that format to other paragraphs. The format elements you can copy are alignment, indentation, tabs, and spacing. (For text attributes such as font, size, and style, use the macro functions described earlier in this chapter.) You can copy as many as 128 such paragraph formats and name them. You can paste any of the formats from this table to the selected paragraphs.

To copy a format:

1.   Position the insertion point anywhere in the paragraph whose format you want to copy.

2.   Choose **Copy Format...** from the **Format** menu or press [Control]-K.

3.   A dialog box will appear. You can type in a name for the format you have created in the chosen paragraph. You can copy as many as 128 paragraph formats.

To paste a format:

1.   Move the insertion point to anywhere within a paragraph or select a number of paragraphs.

2.   Choose **Paste Format...** from the **Format** menu. The dialog box appears and you may choose the format to be applied. AtariWorks changes the format in the paragraph to the one chosen from the Format table. If you want to copy a format to several adjacent paragraphs, select them all before pasting the format.

You can paste a format to a blank line, to start typing a new paragraph with those format attributes. You may also save and load formats using the same options from the **File** menu that you used to save font style macros.

To Save/Load Formats:

Choose **Save Format/Style...** or **Load Format/Style...** from the **File** menu. An item selector box will appear. You can enter the name of the format file and use the extension .FMT; for example, CONTRACT.FMT, SCRIPT.FMT, MEMO.FMT, etc. Both paragraph format tables and font style and size macros are saved in the given filename.

Formatting an Entire Document

Some formatting options work on the printed document as a whole. You can set manual page breaks to keep related information together, or unrelated information apart. With headers and footers, you can repeat information about a document, such as the title or date, at the top and bottom of every page. You can include automatic page numbers in headers or footers. You can specify a title page at the beginning of a document on which headers and footers don't print.

Page Breaks

AtariWorks automatically sets page breaks in all documents. Page breaks are affected by the top and bottom margins you set in the Page Setup... dialog box. You can leave these as they appear, or change them as follows.

To set a manual page break, click on the left-hand sidebar next to the line you want at the top of the page. AtariWorks enters a manual page break at that line and places the insertion point at the beginning of this line. Manual page breaks are shown by a dotted horizontal line in the sidebar.

To remove a manual page break, click just below the dotted line on the left sidebar.

You cannot remove an automatic page break; however, you can force AtariWorks to adjust the position of automatic page breaks by inserting manual page breaks so that AtariWorks repaginates the document.

Adjusting the page margins on the Page Setup dialog box will also affect the position of automatic page breaks.

Headers and Footers

Headers and footers contain information that helps you identify a document. They are not displayed on the screen, but appear only when you print a document. Headers and footers often contain the title of the document, the name of the author, and perhaps the date. Or a header might be used to center the word *Confidential* at the top of every page.

You can create headers and footers in the Word Processor. Headers and footers can have text aligned at the left, right, or center and can include page numbers too. To tell AtariWorks to include the date, time, or page number, or to align text in a particular way, you use a set of formatting commands.

To set a header or footer, see **Using Headers and Footers** toward the end of Chapter 2.

Creating a Title Page

Many word processor documents require a separate page for the title. The Word Processor provides an option for designating a title page under the **Format** menu. Click on **Title Page** from the **Format** menu. A check mark appears before the menu item. You can click on it again to remove it. Setting up a title page means that headers and footers will not be printed on the first page of the document.

Setting Consecutive Page Numbers

You may want to break a very large project into parts. You'll find it easier to switch between smaller documents than to move around in a single, large document. You can give each part its own header and footer for clearer identification. By default, every new document begins with page 1, but in the case of a multi-chapter document, you need to change the starting page number in subsequent word-processor documents: click on **Set Page...** under the **Format** menu and a dialog box appears. You can enter the number of the first page in this document.

Special Operations on Selected Blocks of Text

AtariWorks can also change the capitalization of the words in a selected block of text. These operations are supported only by pressing certain special key combinations. First select the block you wish to change. Then:

To capitalize, press [Shift]-[Control]-C. The first letter of each word in the selection will be changed to upper case; all other characters will be lower case.

To make upper case, press [Shift]-[Control]-U. AtariWorks will convert all characters in the selection to upper case.

To make lower case, press [Shift]-[Control]-L. All characters will be converted to lower case.

To Add the Current Date or Time to Text

Press [Shift]-[Control]-D. AtariWorks inserts the date in long format at the current cursor position. Similarly, [Shift]-[Control]-T inserts the time.

To Remove Carriage Returns and Merge Different Consecutive Paragraphs

In order to merge different consecutive paragraphs, i.e. to remove carriage returns between paragraphs, just select the paragraphs you want to merge into one. Now press [Control]-M. AtariWorks will remove all carriage returns from the selection. If it finds two consecutive carriage returns, it will start a new paragraph at that point and merge the rest of the paragraphs. This function is not available through the Word Processor menu. It is especially useful when you are importing text files.

Spelling Checker, User Dictionary, and Thesaurus

AtariWorks also provides spelling checker and thesaurus functions.

To check spelling in a document:

1.   If you do not wish to check the entire document, select the block of text you want to check.

---

2.   Choose **Check Spelling...** from the **Search** menu or press [Control]-J. AtariWorks will check all words in the selected block for spelling, reporting errors and offering suggestions.

3.   If the word presented is in fact spelled correctly, it means that the word isn't in the user dictionary. Click on **Add Word** to add the word to the dictionary.

4.   To ignore the word, press the appropriate button in the Spelling Checker dialog box. If you want to ignore a word whenever it appears, choose **Ignore All.** If the spelling checker finds another occurrence of the same word, it will ignore it.

To show and edit the user dictionary:

1.   Click on the words "User Dictionary" above the dialog box. The words in the dictionary are listed in the window.

2.   Delete a word by clicking on it and then selecting the **Delete Word** button. Similarly, if you click on **Add Word**, the spelling checker will add the word in the Replace Text box to the user dictionary.

3.   Click on **Stop** to end the session.

To use the thesaurus:

1.   Place the cursor inside the word you want to check.

2.   Select **Thesaurus** from the **Search** menu or press [Shift]-[Control]-J. AtariWorks will call the Thesaurus for the word requested, and show the different meanings of the word in the window in the Thesaurus dialog box.

3.   Click on one of these meanings to see a list of synonyms. Then click on a synonym to use that word instead..

4.   Click on **Stop** to end the session.

MARGINALIA AND AUDIO ANNOTATION

For use with Atari computers with DMA sound, these features add a new dimension to working with a word processor. Whether you share your Word Processor files with someone else who has AtariWorks or you share files on a network of Atari computers, Marginalia and Audio Annotation allow you to make use of notes that do not print when you output your document. Such notes may be instructions to a coworker to fill out blanks in the document or to include some materials with the document's printout. Or you might include a musical signature that merely says, *Have a nice day.*

When you press [Shift] and click the left mouse button in the left-hand margin of your window, you will get a menu that provides a number of options for creating embedded notes. The menu is divided into two categories of options, one for Sound, the other for Text. For Sound, the options include Paste, Load..., Play, and Delete...

Paste allows you to paste an .AVR file from the GEM Clipboard (SCRAP.AVR). When using an Atari Falcon030, you may also record into AtariWorks with a microphone, using the System Audio Manager desk accessory.

Load... brings up a file selector for choosing the .AVR file you wish to use.

Note: Either pasting or loading will leave a speaker icon on the left margin of the document.

Play allows you to hear the .AVR file that has been pasted into place.

Delete... allows you to delete the Audio Annotator icon.

Holding the mouse pointer down on the sound or Marginalia icon allows you to move them up and down in the document so that you can position them exactly where you want them. The standard file format for the Audio Annotation is the Audio-Visual Research .AVR format. For more information on how to create .AVR files, see the appropriate documentation that came with your computer.

The Marginalia notes can be attached just as easily. The Text portion of the margin menu includes the following options:

Enter... opens the Marginalia memo box. You type in your message at the cursor. The editor is not as sophisticated as the Word Processor's editor: type in your message the usual way, using [Backspace] to erase or correct mistakes. Click on **OK** to save your note.

Show... opens the Marginalia memo box with the message completed.

Delete... allows you to delete the message and the note icon.

ILLUSTRATING A DOCUMENT

Drawing Lines and Shapes

You can use lines and shapes to make your written documents look more distinctive. Insert thin vertical lines between the columns of a newsletter. Create organizational charts, or put a box around a key article. Frame charts, photographs and illustrations. Keep track of revisions by crossing out deletions and circling insertions. Using the Word Processor's drawing capability, you can draw lines, boxes, round boxes and circles in four line thicknesses. You can draw right over or next to text and pictures. You either choose your tool from the **Draw Pattern...** option under the **Edit** menu or choose a tool from the right hand side of the Tool Bar.

To draw a line:

1.   Choose **Draw Pattern...** from the **Edit** menu or the line icon from the Tool Bar.

2.   Select a line width or a shape.

3.   Click the **OK** button

Note: To ensure perfectly vertical or horizontal lines, hold down the [Shift] key while drawing the line.

To draw a shape:

1.   Choose the box or circle icon from the Tool Bar or from the **Draw Pattern...** option under the **Edit** menu.

2.   Put the cross where you want to anchor any corner of your shape.

3.   Hold down the mouse button and drag in any direction.

4.   Release the mouse button when you're satisfied with the size and shape of the box or circle. Now you can type within or over anything you've drawn.

To select a drawn pattern:

When you want to move, cut, or resize a line or shape you've drawn, you must first select it. AtariWorks treats these objects just like regular pictures or charts.

1.   Click the cursor on the picture you want to select.

2.   Choose **Select Picture** from the **Edit** menu or press [Control]-Z. AtariWorks puts a highlighted rectangle around the selected pattern. It also shows four grab handles at the four corners of the rectangle.

You can cut, copy, paste, move, resize or change the line width of the selected patterns.

To Cut or Copy and Paste a pattern:

You can cut or copy a selected pattern by choosing **Cut** or **Copy** from the **Edit** menu. **Cut** removes the pattern from the document and places it in the clipboard as a GEM Metafile. **Copy** places a copy of the selected pattern on the clipboard. You can Paste any GEM Metafile from the clipboard to the insertion position. Just place the insertion point where you want the picture to appear and select **Paste** from the **Edit** menu.

To remove a selected picture:

Just select **Clear** from the **Edit** menu or hit the [Delete] key to erase the selected picture from the document.

To Move or Resize a selected pattern:

To move the picture to another location, just click the left mouse and drag it to a new position. You will see horizontal and vertical lines going across the window as you move the mouse, telling you where the picture will be placed if you release the mouse at that position.

To resize a picture, just grab one of the handles and drag the mouse. AtariWorks will show the horizontal and vertical lines across the window to show you the size of the picture if you release the mouse button. You can also grab any of the four edges of the selected pattern to resize the picture in either the horizontal or vertical direction.

If you press the [Shift] key to resize a line pattern, the line will snap to a horizontal or vertical position depending upon the slope of the line while you drag the mouse.

To change the line width of a selected picture:

If you click on the line width icon on the right side of the Tool Bar, a popup menu will appear showing the different line thicknesses. Choose the thickness you want. The selected picture will be redrawn in the line thickness you have chosen.

Metafiles and Bit Image Files

You can import GEM metafiles and GEM bit image files from other painting or drawing applications.

To import a metafile:

1. Choose **Import Picture...** from the **Edit** menu. A dialog box appears giving you the choice of the picture you want to import.

2. Select **GEM VDI Metafile (".GEM")**. Click on **OK**. A file selector box will appear showing you different GEM metafiles.

3. Select the GEM metafile you want to import. AtariWorks will import the metafile into the document at the cursor position.

To import a GEM bit image:

1. Choose **Import Picture...** from the **Edit** menu. A dialog box appears giving you the choice of the picture you want to import.

2. Select **GEM VDI Bit Image file(".IMG")**. Click on **OK**. A file selector box will appear showing you different GEM bit image files.

3. Select the GEM bit image file you want to import. AtariWorks will import the bit image file into the document at the cursor position. GEM bit image files are not visible on the screen. Instead, you will see a rectangle box with a cross in it. When you print the document, the bit image file will appear in the size and place you wanted.

The width of the Imported picture (GEM metafile or bit image file), as it is drawn in the window, will depend upon the current margins you have set for the current paragraph. If the width of the picture is greater than the margins, the picture is shrunk to fit the margins. The aspect picture of the original picture is maintained.

To change the font or size of a selected metafile picture:

You can change the font and/or size of all the text in a GEM metafile in your document. Just select the metafile whose font and size you want to change. Choose **Font...** from the **Style** menu. The Font Face Selector dialog box will appear. Select the font and/or size you want and then click on **OK**. AtariWorks will change the font and/or size of text in the metafile to the one you just selected. This change is irreversible.

To hide or show a picture:

Sometimes when you have a very complicated picture in your document, all operations on the document will slow down, because the picture has to be redrawn repeatedly. To avoid this, select the picture and choose **Hide Picture** from the **Edit** menu. A dialog box will appear asking you the name of the picture to be shown when it is hidden. AtariWorks will draw a rectangular box in place of the picture with its name in the upper left-hand corner of the rectangle. So if you have multiple pictures in your document, you can name them differently when you are hiding them.

To correct the aspect ratio:

You can correct the aspect ratio of a selected picture according to the original aspect ratio in which the picture was drawn. Say you have imported or pasted a picture and you resized it. In order to bring it back into the same aspect ratio as when it was created, choose **Correct Aspect Ratio** from the **Edit** Menu. AtariWorks will take the current width of the picture and readjust it's height so that the original aspect ratio of the picture is maintained.

THE DATABASE

The AtariWorks Database lets you create an automated filing system. With your information stored in the Database, you'll have quick access to any combination of records. Using simple rules, you can sort through a base of information to create reports and print many different reports from a single database. Each report will contain just the particular information you want to pull from the database document.

This part of the manual explains how to create and use database documents:

• **Creating a Database Document** shows you two ways to view a database document and how to create a new database document and add information to it. It also explains how to correct mistakes as you make your entries.

• **Editing a Database Document** shows how to change your information or change the way it's presented. It also explains how to use computed fields.

• **Organizing a Database Document** shows how to quickly put your information in order, how to find what you need, and how to make several smaller, specialized database documents out of one large one.

• **Making a Report** shows how to define and print a report. You'll learn how to sum the contents of your fields and produce a grand total at the end.

CREATING A DATABASE DOCUMENT

This section explains how to get started with the Database. It shows you how to:

- View a database document in a form window and a list window

- Set up a new database document

- Add new fields

- Switch between list and form windows

- Make entries

An Overview

When you first create a new database document, you set up fields to contain information. After you set up a field, you also determine how you want it to store information--as text, perhaps, or as a date or number. Once you've specified all your fields, you're ready to add information. You can organize and review your information in either a list window or a form window.

You can add information to a form or a list. Because a form shows all the fields on the screen at one time, it's easier to enter full records using a form. If you only have a few fields, however, you may find it easier to make entries to a list. Either way, all the information goes into a single database document.

Planning a Database Document

You work with your database information using the fields you set up. The more fields you use, the more flexible your database will be. For example, if you set up an address list, you could set up just two fields, "Name" and "Address". A database document like this has room for everyone's name and address, but it's not designed well for searching or sorting. If you wanted to know which names in your database came from a particular city, you have to break the address into parts.

A better way to set up such a document is to make a separate field for each component that you might want to search for or to sort through. For example, create fields like "first name", "last name", "salutation", "address", "city", "state", "zip", etc., instead of having just two fields.

Even if you don't set up your fields in the most useful way when you first create a new database document, you can go back and add new fields at any time.

Setting Up a New Database Document

When you set up a new database document from scratch, you have to create a new AtariWorks document. Because there's no information in the document yet, AtariWorks asks you to set up fields first. After you name one or more fields, you'll be able to start entering your information.

```
New Field Name

First name|_____

        Add Field      Done
```
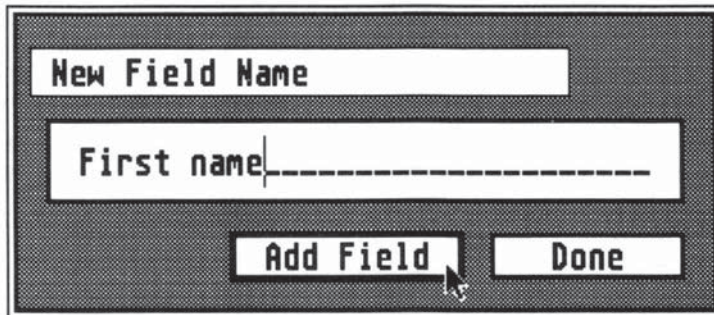
To create a new database document:

1.   Choose **New** from the **File** menu. AtariWorks opens a form window and creates an empty document with the name "Untitled".You are then asked for the name of the first field.

2.   Type the name of your first field.

3.   Click the **Add Field** button or press the [Return] key. The field name you typed is accepted, and the dialog box reappears so that you can set up another field.

4.   Type a name for the second field and for as many other fields as you want.

5.   Click the **Done** button when you've added all the fields you need. The dialog box disappears, and AtariWorks displays the fields you created in a form in your window.

To add a new field at any time:

1.   You must be in the form window. If there is a Show Form menu entry under **Format,** then selecting it will switch you to a form window.

2.   Position the mouse pointer where you want the field to appear in the form.

3.   Drag the mouse to create a new field. AtariWorks adds the field to the right of the right most field in the list window.

Looking at a Form

Let's examine a single record from an address file in a form window. All the information about one person or subject, for example--with name, address, and so forth--makes up one record.

1/2		✓	X	◇	555-1234

| 0 | D:\A_WORKS\ADDRESS.⌐ |

First name	Bob
Last name	Smith
Street	221 N. Main
City	Mytown
State	CA
Zip	12345
Phone	

Each record is divided into fields of information. The address is one field, the city and state are others. Each field has a name so that you know what sort of information to fill it with. And when you enter information, for example "221 N. Main", you make an entry in a field. Entries are called field data.

Looking at a List

When you want to see many records at once--to make comparisons, for example--you can list them. Remember that a database document can be much larger than a single window. You move around a large document by scrolling. The scroll bars at the right and bottom of the window show you where you are in a database document and enable you to scroll. If the document is not larger than the window, no scroll bars will appear.

Switching Between List and Form Windows

At the top of the **Format** menu, you will find either **Show List** or **Show Form**. Click on **Show Form** to show the form window or click on **Show List** to show the list window (this toggle item can also be invoked by pressing [Control]-L on the keyboard).

To move from a form window to a list window by clicking the mouse:

• Double-click anywhere in the white space of a form window. AtariWorks displays the list and scrolls to display the record that was displayed in the form window.

• Double-click the box to the left of any record of a list window. AtariWorks displays the form, with the record you selected showing.

Making an Entry in a Record

An entry is the content of a field for a single record. An entry can be blank or it can contain some information. To enter information into an entry, you first select the field, then start typing. You can type this information into either a list window or a form window. When an entry is active, you can change its contents.

To make a Database entry:

• In a form window, select an entry by clicking on it. The entry you click becomes the active entry.

• In a list window, you can select an entry only in a record that already contains information, or in the first blank record.

When you type, the information appears in the entry bar at the top of the screen (but not in the active entry). The **Cancel** box and the **OK** box appear to the left of the entry bar. The **Cancel** box restores the entry to what it was before you began typing. The **OK** box enters what you have typed.

Record/ no. of Records		OK	Cancel	Scroll Left		Entry Bar	

1/2		√	X	◇	12345				
⊠			D:\A_WORKS\ADDRESS.STD (DB) (Not Saved)						⊠
	First name	Last name	Street	City	State	Zip	Phone	⇧
	Bob	Smith	221 N. Main	Mytown	CA	▓▓▓▓		

The Database can read times and dates in most formats that you might want to use, but converts them to its own standard formats. For information about typing dates and times, see **Changing the Format of a Field** later in this Chapter.

You can type up to 255 characters for an entry. Even if the field is too narrow to display all the characters, you can scroll the contents of the entry bar left or right using the arrow buttons or by pressing [Control] and the Left or Right Arrow keys.

Deleting a Record

To delete a record:

1.   From a list window, select the record to delete by clicking on the box to the left of the row of entries. From a form, select any field.

2.   Select **Delete Record** from the **File** menu or press [Contol]-K. (To merely blank the fields and leave the record in place, use **Delete** instead.)

EDITING A DATABASE DOCUMENT

Database documents are dynamic. You'll often need to update your Database documents, changing old information and adding new information.

This section explains how to:

- Select information

- Change the appearance of fields in a form

- Change the way information is displayed in a field

- Calculate with the Database

- Rename a field

- Size and arrange fields in both form and list windows

- Insert a record

- Show a grid

- Copy information

- Make corrections and remove information

If you want to rearrange and organize your information, rather than change it, see **Organizing a Database Document** later in this chapter.

Selecting Information

Before you can perform an action on any part of a database document, you must select it. You can select entries, fields, or records. Then you can perform actions like sorting, removing, or copying. When you make any selection, AtariWorks displays the number of the record containing the active selection at the left of the Cancel box. This number is called the record indicator.

```
Works  File  Ed:
┌──────────────────┐
│       1/2        │
├─┬────────────────┤
│▓│▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒│
├─┼─────────────┬──┤
│▶│First name   │Last
│ ├─────────────┼──┤
│ │Bob          │Smit│
│ └╌╌╌╌╌╌╌╌╌╌╌╌╌┴╌╌┘
└─┘
```

In a list window, you can select an entry, a field (column), a record (row), or a block of entries. You can also deselect a selection by clicking the deselect box at the far left of the field titles.

When you make a selection of more than one entry, only one entry is active at a time. This entry is bordered in white.

In a form window, you can select an entry only.

In either type of window, when you select an entry, it becomes active and you can change its contents in the entry bar. When you select a field, you can move it, size it, change its name, or change its attributes.

The contents of the active entry is displayed in the entry bar. Anything you type will replace what is displayed.

Changing the Appearance of Fields in a Form Window

When you set up a new database document, the records are displayed in a form window with borders around each field name and each entry. The field name is in bold type, and the entry is in plain type. You can change the way records are displayed to get different effects:

To put borders around field names or entries, choose **Border Name** or **Border Data** from the **Format** menu.

To put field names or entries in bold type, choose **Bold Name** or **Bold Data** from the **Format** menu.

A command that is currently in effect is checked on the menu. To remove a check mark, click on the option. The commands you choose affect all fields and records in a document.

Changing the Format of a Field

There's more to formatting in the Database than using borders or bold

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type. You can also set field attributes that determine what kind of information can be kept in a field, and how that information is displayed. For example, you can specify that a field named "Total Cost" contain only numbers displayed as dollar amounts.

Field attributes apply to field data in both lists and forms. The normal settings are left-aligned plain text for non-numeric characters and right-aligned fixed format for numbers.

Field attributes include the type of field, the way numbers are displayed, the alignment and style of text, and the number of decimal places to be displayed. You can also specify that a numeric field be computed or that a date field include the day of the week.

With the **Set Field Attributes...** command, you can customize the appearance of your data whenever you want. Because the field type determines which other attributes are available to you, you should choose the field type first.

To set or change field attributes:

1.   Select a field or an entry in the field.

2.   Choose **Set Field Attributes...** from the **Format** menu. The Set Field Attributes dialog box appears.

3.   Click the options you want for the field.

4.   Click the **OK** button.

For example, the combination of selections shown to the right will set a numeric field in Fixed format with two decimal places, set in boldface type and aligned to the right margin.

	Enter Field Attributes			
Type:	**Display:**	**Date:**	**Style:**	**Align:**
Text	General	Short	**Bold**	Left
Number	**Fixed**	Medium	Underline	Center
Date	Currency	Long	*Italic*	**Right**
Time	Percent	Show day	Commas	
Computed	Scientific	Decimal Places:	2	
			OK	Cancel

Typing a Date

One of the options you can choose is Date. When you specify a date field with the **Set Field Attributes...** command, the Database gives you a choice of short, medium, or long displays. You can also choose to have the day of the week displayed with the medium and long displays. You can type the date in any of the following formats, and the Database will display it in the form you choose in the Set Field Attributes dialog box:

- 8/10/86
- 8-10-86
- 8.10.86
- 8/10/1986
- Aug. 10, 1986
- August 10, 1986

Then, depending on the options you choose, AtariWorks displays the date like this:

Display	Show Day Deselected	Show Day Selected
Short	8/10/86	(not applicable)
Medium	Aug 10, 1986	Sun. Aug. 10. 1986
Long	August 10, 1986	Sunday, August 10, 1986

You can enter the current date in an entry by pressing [Control]-D.The range for years is 1900 to 2100.

Typing the Time

AtariWorks displays time using a 12-hour clock, even if you enter a time in 24-hour format.

If you type:	AtariWorks displays:
8:04	8:04 AM
20:04	8:04 PM

If you don't use 24-hour time, remember to include the AM or PM. If you don't specify this, AtariWorks displays AM. You can enter the current time in an entry by pressing [Control]-T.

Important: You can change a text field to a date, time, or number field after you enter the data. However, if the data is not in an acceptable format when you change the type of field, AtariWorks deletes the data. You can, however, change a date, time or number field to a text field and retain all your data.

Calculating with the Database

A computed field contains the results of a calculation based on the contents of other fields. For example, a computed field in a payroll database document might calculate weekly wages by multiplying an "Hours Worked" field by a "Dollars Per Hour" field.

Computed fields aren't meant for complex numerical analysis. They allow addition, subtraction, multiplication, division, and exponentiation. (Exponentiation raises one number to the power of another; for example, $2^2 = 4$ and $2^3 = 8$). In computed fields, you can use all Spreadsheet functions except those that use ranges as arguments. For detailed information on the Spreadsheet functions, see **Chapter 5: The Spreadsheet** and Appendix A. For making projections or performing sophisticated calculations, use the Spreadsheet tool itself, not the Database.

Computed Fields

You can designate a computed field by using the Set Field Attributes dialog box:

1.   Select a field.

2.   Choose **Set Field Attributes...** from the **Format** menu.

3.   Click the Computed option.

4.   Click the **OK** button. AtariWorks returns you to the form or list you were looking at. It also puts a "=" character and the text cursor in the entry

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bar, meaning that you can enter the formula right away.

Formulas

To tell AtariWorks what you want to compute, you enter a formula. A formula for a computed field can contain field names, operators, functions, and numbers. To include a field name, you type the name in the entry bar.

To enter a formula for a computed field, first follow the procedure for designating a computed field as described above, then:

1.　Type the formula at the insertion point.

2.　Click the **OK** box or press the [Return] key.

AtariWorks calculates the contents of the new field from the formula you typed. If you included a nonexistent field name in the formula, AtariWorks displays an alert box.

Renaming a Field

If you decide to change the name of a field, you can rename it in the following way:

1.　Select the field.

2.　Choose **Rename Field...** from the **Edit** menu. The New Field Name dialog box appears. The current name is selected, so you can just type the new name to replace it.

3.　Type the new name in the dialog box.

4.　Click the **OK** button or press the [Return] key. AtariWorks replaces the old name with the new one.

You can also double click the field name to see the New Field Name dialog box.

Sizing and Arranging Fields in a Form Window

You can change the size and arrangement of fields in a form window whenever you want.

```
Works   File   Edit
        1.25
▣ ▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒

First name  Bob ☞

Last name  Smith
```
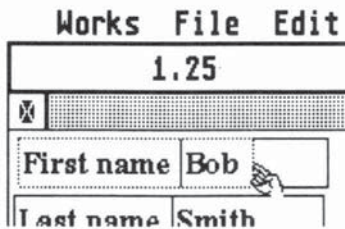
To change the size of a field in a form window:

1.Position the pointer on the right edge of the field data box. The arrow turns into a pointing finger.

2.Hold down the mouse button and drag to the right or left until the box is the size you want. While you resize the field, AtariWorks displays the size of the field in the current measurement system in the left side of the entry bar. This is primarily an aid to calculating printed area. Fields can range from 0.1 inch to 10.0 inches.

To move a field:

You don't have to leave fields where you first created them. AtariWorks lets you move fields to wherever they make the most sense to you.

1.	Position the pointer over the field name you want to move. Hold down the left mouse button and the pointer turns into a hand.

2.	Drag the field to its new location.

If a field won't fit where you want to put it, you'll have to make room for it. You can make it smaller, or make surrounding fields smaller, or move another field out of the way.

Sizing and Arranging Fields in a List Window

The width or placement of fields in a new list may not satisfy you. They're all the same width, and their order is based on the order in which you first typed

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the field names. But in an address book, for example, you might want the "first name" field to be wider than the "middle initial" field. It would make more sense to have "last name" as the first field, rather than "zip code" or "state." AtariWorks lets you size and arrange your fields however you want them at any time.

To change the width of a field in a list window:

1.   Position the pointer on the right edge of the field name box. Hold down the left mouse button and the arrow turns into a pointing finger. As you drag to adjust the field size, a dotted line shows you where the new edge of the field will be. The size of the field in the current measurement system appears in the left side of the entry bar.

2.   Drag to the right to widen the field, or to the left to narrow it.

Works   File   Edit

1

🔀	
First name	**Last na**
Bob	Smith
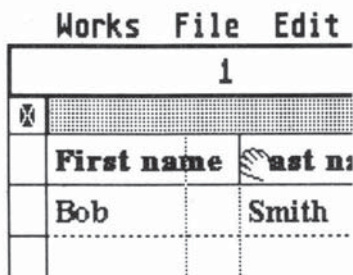
To move a field in a list window:

1. Position the pointer on the name of the field you want to move.

2. Hold down the left mouse button and the pointer turns into a hand. Drag the field to the right or left.

Inserting a Record

You can add a new record between other records, in both a list and a form window:

1.   Select a record in a list window, or scroll to a particular record in a form window.

2.   **Choose Record Insert** from the **Edit** menu. AtariWorks inserts a blank record before the selected or displayed record. You can also use [Control]-I from the keyboard to insert a record at the highlighted spot.

Showing the Grid

In a list window, lines separate each column and row. You can choose to turn this grid on or off. This is a toggle item from the **Format** menu. Choose **Grid** to show the grid or **No Grid** to hide the grid.

Copying Information

You can copy individual records, fields, or entries, and blocks of records, fields, or entries. Copying within and between documents saves you from having to retype similar information. For example, if you have ten people in your address book who live in Seattle, Washington, you can type the city and state once, and copy the rest. Although you can copy in both list and form windows, it's easier in a list window, because you can copy multiple records at once.

To copy a record:

1.   Make sure you're in a list window.

2.   Click the record selector box at the left of the record you want to copy.

3.   Choose **Copy** from the **Edit** menu. (Or use [Control]-C from the keyboard.)

4.   Select the row where you want the copy to go.

5.   Choose **Paste** from the **Edit** menu. (Or use [Control]-V from keyboard.)

There are times when you'll want two or more records to have the same entry for a particular field.

To make multiple copies of an entry:

1.   Make sure you're in a list window.

2.   Select the entries you want to copy.

3.   Choose **Copy** from the **Edit** menu. (Or use [Control]-C from keyboard.)

4.   Select the entries to receive the copy.

5.   Choose **Paste** from the **Edit** menu. (Or use [Control]-V from keyboard.) AtariWorks fills in the selected entries with a copy of the information.

Now you can select these two blocks of entries to copy and paste into the next two records. Then you can select the four identical blocks of entries and copy and paste them into the next four records. You can repeat this process to fill your records as often as you need to.

Making a Correction

When you find a typing mistake in an entry, you can correct it:

1.   Select the entry containing the mistake.

2.   In the entry bar, put the pointer to the left of the mistake.

3.   Press the [Delete] key to erase the entry.

4.   Type the correction.

5.   Click the **OK** box or press the [Return] key.

Note: After selecting the entry containing the mistake, pressing the space Bar will put the edit cursor at the end of the string.

Removing Information

AtariWorks lets you remove information from a Database document in three different ways:

• **Cutting** takes information out of a database document and puts it on the

Clipboard. This is useful for cutting and pasting as well as for removing information. You can cut records, entries, and blocks of data.

• **Clearing** permanently removes records, fields, entries, or blocks. Cleared information does not go on the Clipboard.

• **Deleting** a field removes a field from the database document including the field name and all entries. This should only be used to remove an entire field that you don't need anymore.

If you cut or clear information, then decide you don't like the result, use the [Undo] key right away to put everything back.

To cut information:

If you cut a field or entry, AtariWorks cuts the contents, but leaves a blank field or entry in its place. If you cut a record, AtariWorks removes the record and closes up the empty space.

1.   Select the information you want to cut.

2.   Choose **Cut** from the **Edit** menu or press [Control]-X. AtariWorks takes the information out of the database document and places it on the Clipboard. You can paste what you cut back into the database document at a location you select.

To clear information:

When you clear information, AtariWorks blanks the selected entries. If you clear a field, entry, or record, AtariWorks clears the entries, but leaves a blank field, entry or record in its place.

1.   Select the information you want to clear.

2.   Choose **Clear** from the **Edit** menu. AtariWorks removes the information from the database document, but does not put it on the Clipboard. If you reconsider, choose the **Undo** command before you do anything else.

To delete a field:

When you delete a field, AtariWorks removes it from the document and closes up the space it left behind.

1. Select the field.

2. Choose **Delete Field** from the **Edit** menu.

To paste the contents of the Clipboard:

If you cut a selection, you can paste it back into a database document at a location you select:

1. Select a record or field, or the upper-left entry of a block of entries that you want to paste to.

2. Choose **Paste** from the **Edit** menu or press [Control]-V. AtariWorks fills in the selected entries with the information from the Clipboard.

ORGANIZING A DATABASE DOCUMENT

This section of the manual shows you how to organize a database document so that you can find information easily:

• Sort information into alphabetical, numerical, or chronological order, backwards or forwards.

• Find information. Scroll to view those fields that contain the characters you specify.

•Match records. Quickly call up the records that contain the information you specify.

• Use record selection rules. Use up to six criteria to have AtariWorks show you records with specific information only. By using record selection rules and then saving the selected records with another name, you can create subsets of your database document.

Sorting Information

If your records aren't in the order you want, sort them. Sorting arranges records in alphabetical, numerical, or chronological order, either backwards or forwards. You can sort through any field, in both form and list windows.

Sorting is more than just putting *A* before *Z* in your database document. You can do successive sorts on different fields to group your records just the way you want them. Each sort is done individually by repeatedly choosing the **Sort** command.

For a multi-level sort, you first must break down the levels into priorities and then sort on the field you're most interested in last. For example, to get an address list in order by last name and then by first name, you'd first sort the first name field. For each level of a multi-level sort, AtariWorks retains the order of all previous sorts.

Multi-level sorting lets you presort a large mailing list. For example, you can group the records in your list in order by last name, first name, city, state, and zip code. When you put labels on your mass mailing, it will already be sorted by each of these categories.

To sort information:

1. Select the first field you want to sort.

2. Choose **Sort** from the **Edit** menu or type [Control]-Z. AtariWorks tells you which field you're sorting on, and gives you a choice of sorting sequences.

3. Click the appropriate sequence.

4. Click the **OK** button.

5. Repeat the procedure for any other fields you want to sort.

Finding Information Quickly

Sometimes you need to locate specific information in a database document.

To find the entries:

1.   Choose **Find Field...** from the **Select** menu or type [Control]-F. AtariWorks displays a dialog box.

2.   In the dialog box, type the information you're looking for.

3.   Click the **Find Next** button. AtariWorks activates the first entry that contains your information. When AtariWorks looks for the information, it searches all fields in one record, then searches the next record, and so on. Searching ignores whether the text is upper- or lower-case.

To continue finding entries that contain the information you specified, choose **Find Field...** again. The characters you typed will still be in the text box, so you just click the **Find Next** button.

Matching Records

The **Match Records...** command is a shortcut to seeing a subset of a database document. You type a few characters or words and let AtariWorks match the records containing that information. When AtariWorks is done, you'll be looking at only those records that contain the information you specified.

You don't even have to type a whole world or number--just enough information to begin a match, like "Chi" when you're searching for records containing "Chicago".

Suppose you want to find all the records in the database document **Addresses** that contain the word "Hillside":

1.   Choose **Match Records...** from the **Select** menu or type [Control]-M. AtariWorks displays a dialog box.

2.   In the dialog box, type the information you want AtariWorks to look for. For this example, you would type Hillside.

3.   Click the **OK** button. AtariWorks displays any records that contain your information. If nothing matches, AtariWorks tells you so and lets you try again.

Match Records... presents you with a subset of your set of records. You can do any kind of operations with the matched records. If you'd like to turn your selection into a separate database document, see **Saving a Selection with a Different Name** at the end of this section. You might want to do this if you made a selection in order to give someone a subset of your database document, or to make mailing labels from a subset of your document.

To See All Records

To be able to see all the records and use the rest of the Database commands, you must go back to the full database document.

1.   Choose **Show All** from the **Select** menu or press [Control]-E. You will see that the check mark before **Match Record** has disappeared and now it has appeared before **Show All.** This shows that all the records are being displayed currently.

2.   AtariWorks displays all your records.

Using Selection Rules

When you're looking for very specific information, you can set up record selection rules. AtariWorks follows your selection rules as it searches for the information you want, then shows only those records that meet your selection rules. Selection rules are especially useful when you want to print your information in a report.

How Selection Rules Work

Record selection rules aren't as complicated as they sound. You go through a record selection process yourself when, for example, you look in your

address book for people who work in San Diego. You tell yourself, "Look for people who are business associates and work in San Diego." Or, to use the language of selection rules: the "Type" field contains Business and the "Location" field contains San Diego.

In the same way, you use selection rules in AtariWorks to find information that meets your criteria, usually to make some kind of decision. For example, the auditor of a department could have AtariWorks find all months in which the director spent over the allotted $300 per month and the months in which the director traveled frequently, to see the impact of travel on the budget.

Parts of a Selection Rule

A record selection rule is made up of three components: a field name, a relational operator, and some record comparison information. The field name corresponds to a field in the active database document. The comparison phrase comes from the following list:

equals	contains
is not equal to	does not contain
is greater than	begins with
is greater than or equal to	ends with
is less than	does not begin with
is less than or equal to	does not end with
is blank	
is not blank	

For text fields, you'll have all the above phrases available. For numeric, date, or time fields, you'll have those on the left in the above list. The record comparison information is what you type to use for the comparison.

To make a simple selection rule:

1.   Choose **Select Records...** from the **Select** menu or press [Control]-R. A dialog box appears, containing a field name box, a comparison phrase box (you can scroll through all fields and phrases by clicking the appropriate scrolling buttons), and a box to type in the comparison information.

2.	From the field name box, select the field you want AtariWorks to use in the comparison. Click on the Field Name field in the dialog box. A popup list appears, showing all the field names in your database. Select the field name you want.

3.	From the Relational Operator, select the appropriate comparison phrase. Click on the phrase field. A popup list appears, showing you all the comparison phrases available. Select the comparison phrase you want.

4.	Type the record to be compared in the Current Rule box.

5.	Click the **Install Rule** button. AtariWorks displays the completed selection rule.

6.	You may repeat steps 1 - 5 for up to six criteria of your selection rule.

7.	Click the **Select** button to have AtariWorks find the records that meet your selection rule. AtariWorks searches through your database document looking for records that match up. It then displays just those records. If AtariWorks can find no matches, it displays an alert box.

When you're looking at selected records, you see a subset of the total database document. The rest of the records are still in memory and are still included in the overall document. If you want to look at all your records again, choose **Show All** from the **Select** menu. If you'd like to turn your selection into a separate database document, see **Saving a Selection with a Different Name** at the end of this section. You might want to do this if you made a selection in order to give someone a subset of your database document, or to make mailing labels from a subset of your document.

Setting up More Complex Rules

A single selection rule helps to find information, but with AtariWorks, you can be much more specific. Connectors (**And** and **Or**) let you link together up to six selection rules.

Using Connectors

After you set up a single selection rule, but before you carry out the selection with the **Select** button, AtariWorks presents you with these two connectors to choose from:

And lets you link together multiple selection rules. Each additional rule eliminates more of the records in your database document, so you zero in on the ones you need. When you use **And** between two selection rules, AtariWorks selects only those records that satisfy both rules.

Or lets you choose between multiple selection rules. If a record doesn't match the first rule, it might match the second or third.

You can use these connectors separately or in combination. For example, a developer examining real estate holdings in El Paso might use selection rules like these:

Location equals El Paso
And Type equals Shopping Center
Or Location equals El Paso
And Type equals residential

These rules eliminate all other properties, such as office buildings or hotels, and all properties not in El Paso. Notice that the following set of rules would not produce the same result:

Location equals El Paso
And Type equals Shopping Center
Or Type equals Residential

Because the **And** connector takes precedence over the **Or** connector, this set of rules would select records containing shopping centers in El Paso, plus all residential properties (regardless of location).

You can also use connectors to extend a comparison, setting up a range of items, rather than a single item, to match. An example of a range is:

Sales are greater than $100,000
And Sales are less than $1,000,000

To Add Further Rules to Your Original Rule:

1.   If you already clicked the **Select** button after installing your first rule, choose **Select Records...** from the **Select** menu again. Otherwise, you're ready to add another rule.

2.   Click **And** or **Or**.

3.   Select a field name.

4.   Select a relational operator phrase.

5.   Type the record into the current rule box.

6.   Click the **Install Rule** button.

You can continue to add rules in this manner until the dialog box is full. When you're done, click the **Select** button to select the records that match your selection rules.

Changing Your Mind

If you make a mistake or decide not to make a particular selection, or if you just want to see all the records, you can cancel the record selection rules or make new ones.

Until you click the **Install Rule** button, you can change any part of your rule. Just select different items from the list boxes or type new comparison information before you click the **Install Rule** button.

To remove a rule after you click **Install Rule**, click **Delete Rule**. AtariWorks erases the last installed rule. You can repeat this step for as many rules as you have.

To see all records, Choose **Show All** from the **Select** menu. AtariWorks now shows all the records in the database.

Saving a Selection with a Different Name

If you have a main database document that you use to store most of your information, you can create several smaller documents from it. The smaller documents would contain subsets of the information in the main database document.

For example, a subset of a customer list might contain shipping addresses for the northeast region. If you save the northeast region data alone in another file, you can print mailing labels just for northeast customers in conjunction the Word Processor.

To create a subset of a Database document:

1.   Use the **Select Records...** or **Match Record...** command to display only the records you want to include in the smaller document.

2.   Delete any fields you don't need in the smaller document.

3.   Choose **Save As...** from the File menu.

4.   An alert box appears asking you if you want to save the selected records only. Choose **yes** if you want to save the selected records only.

Note: "Selected records" does not mean the records which are highlighted. It means the records you selected by means of **Selection Rules.**

5.   The Save As dialog box appears, giving you a chance to save the information with a different name or on a different disk.

6.   Type a new name for the smaller database document.

7.   Click on **OK** or press the return key. AtariWorks saves the subset of your database in a new name.

MAKING A REPORT

A report presents a table of information, with a record on each row. A report provides a form in which data can be compared or in which a relationship among data can be presented. Using the methods learned in the previous section, you can now create such a report.

Any database itself is a report. You can use different sets of selection rules or matching patterns to select a subset of the database. This is called a report. You can use **Sort** to rearrange the records in this subset, and use the mouse to rearrange the fields and resize them. You can set the fields to be summed and also the controlling field.

You can change your set of selection rules in the Select Records... dialog box, or change the string in the Match Record... dialog box to produce a new report.

A report definition tells AtariWorks what information to print from a database document. You use record selection rules to choose just the records that meet the criteria for your report. For example, if you're looking at all credit ratings for customers, you can print a report of just those customers whose bills are 90 days past due.

Setting up a Report Definition

To set up a new report definition:

1.   Specify headers and footers, paper size, and margins with the **Page Setup...** command from the File menu.

2.   Create or review any record selection rules, and make any necessary changes.

3.   Size and arrange fields, and specify which fields to print by moving any you don't want printed outside the report margin.

4.   Specify any field to sum, using options under the **Control** menu.

5. Specify when to subtotal groups of records, using options under the **Control** menu.

6. Specify when to start a new page after a subtotal, using options under the **Control** menu.

7. Specify whether to print a report using a grid, using options under the **Format** menu.

All of this information makes up your report definition. The rest of this section details the procedures.

Setting Up Paper Size and Margins

Use the **Page Setup...** command from the **File** menu to set up your report page. You need to do this from the start because paper size and margins determine the amount of information that can be printed for each report.

You'll be able to see your margins at once by looking at the page breaks in your window. If you need to fit more fields in, you can decrease the margins by using the **Page Setup...** command again. For complete information about using the **Page Setup...** command, see **Page Setup** in Chapter 2.

Setting Up Headers and Footers

Use **Header/Footer...** from the **File** menu to set up your header and footer. For complete information about using the **Header/Footer...** command, see **Headers and Footers** in Chapter 2.

Arranging the Fields to Print

When preparing a report definition, you decide in what order to put the fields and which fields to include in the printed report. Once you have made these decisions, you may need either to adjust some field widths or adjust the margins of your report.

Before you begin, look at the database window and locate the edge markers. The page breaks show you how wide your report will be. You determined where these markers are when you set the left and right margins in

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the Page Setup dialog box. Fields before the first page break are included in the report. Fields completely or partially to the right of this won't be included.

To Rearrange Fields

You can rearrange the horizontal position of the fields to be printed by dragging the field name of any field left or right.

To Move Fields In and Out of a Report

If you have many fields in your database document, some of them may not fit within the margins of your report. In this case, you can take unwanted fields out of the report by dragging. In other cases, however, you may not have enough fields to completely fill the space between the edge markers. When this occurs, you will not be able to drag out unwanted fields until you either widen the fields or change the margins with the **Page Setup** command. The fields you include in a report must be wide enough to fill the area to the page break.

To put a field out of a report, drag the field to the right so that the page break occurs before it. To put a field back into a report, drag the field to the left so that the page break occurs before the page marker.

Using the Control Menu

Your database document might be enhanced by including totals that are sums of a column of numbers. For example, a payroll report might sum the total payroll. AtariWorks also lets you set up subtotals, such as payroll per department in addition to the total payroll. With the **Control** menu in the Database, you can select fields to be totaled or sub totaled. You can review the totals before printing the report, and you can create summary documents with just this totals information.

When you use the **Control** menu to specify totals, subtotals, or new pages, the commands in effect for a selected field are checked on the menu. To change your specifications, choose any command again to remove the check mark. The simplest total sums all the numbers in a field.

To total a field:

1.   Select a numeric field that you want totaled.

2.   Choose **Field to Sum** from the **Control** menu. The total for that field will appear at the bottom of the field when you print the report.

For fields that you've specified to be totaled, you can also specify two kinds of subtotals. In both cases, you will get more meaningful results if you sort your records before specifying the subtotals.

To Subtotal When Field Data Changes

You can set up a report to print subtotals whenever the contents of a specified key field changes. Many database documents can be organized into divisions or groups. For example, payroll can be divided into departments. For a payroll database document, you might want a subtotal whenever the department name changes. In this case, the field containing department names would be the key field.

Here's how to set up such a subtotal:

1.   Select a numeric field that you want to subtotal. Just click the field name.

2.   Choose **Field to Sum** from the **Control** menu.

3.   Select the key field on which you want the subtotals based.

4.   Choose **Total on Field Change** from the **Control** menu.

When you print the report, AtariWorks will print a subtotal every time the contents of the key field changes. For example, in a payroll report, you'd get a -subtotal after all the entries for Manufacturing, and another after all the entries for Sales, and so forth. Then AtariWorks prints a grand total at the end of the report.

To Subtotal When the First Character in a Field Changes

You can also set up a report to print subtotals whenever the first character in a specified key field changes. For example, you might want to get subtotals for each group of records having an entry in the last name field beginning with the same letter, so that you subtotal A's, B's, C's, and so on.

To set up this kind of subtotal:

1.   Select a numeric field that you want to subtotal. Just click the field name.

2.   Choose **Field to Sum** from the **Control** menu.

3.   Select the key field on which you want the subtotal based.

4.   Choose **Total on 1st Char Change** from the **Control** menu.

When you print the report, AtariWorks will print a subtotal each time the first character of the entries in the key field changes.

To Print a New Page After a Subtotal

To make reports easy to read, you may prefer to start a new page after printing each subtotal. That makes a subtotal the last printed line on each page.

To start a new page after each subtotal, first complete either of the two procedures shown above for specifying subtotals. After you have chosen either **Total on Field Change** or **Total on 1st Char Change,** choose **New Page After Total** from the Control menu. When you print the report, AtariWorks will skip to a new page after it prints each subtotal.

Printing With or Without a Grid

Works normally prints a grid separating the records and fields in a report. To print the report without a grid, choose **No Grid** from the **Format** menu. (This is a toggle item; clicking on it again will bring the grid back.)

Storing a Report Definition

After you have completed a report definition, you can choose either to preview any subtotals or totals you may have specified (see **Previewing Report Totals** below), or to print the report immediately. AtariWorks stores the report definition with the associated database document. When you later save the database document, the report definition is saved along with it.

Previewing Report Totals

After setting up your report definition, if you've specified fields to be summed, you can preview the totals and subtotals before you print the report.

To preview the totals, Choose **Copy Totals** from the **Edit** menu. **Copy Totals** is available only after you have specified at least one field to be summed.

When you specify subtotals with the **Total on Field Change** command, AtariWorks copies the records containing subtotals and the grand total to the Clipboard. When you specify subtotals with the **Total on 1st Char Change** command, AtariWorks copies the first record of each group to the Clipboard, substituting the subtotal of each entire group for the number related to each particular record. You can then open the Clipboard to see this information.

To Create Summary Documents

Once the data is on the Clipboard, you can use it just like anything else on the Clipboard. For example, you can paste the information into a Word Processor or Spreadsheet document to create a summary document containing just the totals information without all the supporting numbers.

Printing a Report

There are two stages in printing a report: preparing the information and printing the report.

To prepare your information:

1. Open the Database file from which you want to print a report.

2. Sort the records to have them appear in the order you want.

3. Review any formatting characteristics specified with the Set Field **Attributes...** command.

4. Change the Record Selection rules to get the subset of records you want for your report.

5. Set the **Control** menu.

To print the report:

1. Choose **Print** from the **File** menu or type [Control]-P.

2. Review the options to make sure they're all set as you want them, and make any necessary changes.

3. Click the **OK** button. AtariWorks prints your report. If your printer is disconnected or you run out of paper, AtariWorks displays a message.

Working with Reports

Many businesses print regular revisions of reports--like address lists, customer lists, bad check lists, or payment overdue lists. For example, the first time you define such a report may be the only time you need to because you can select that same report definition each time you need to print the report. As long as your database document contains the fields contained in the report definition, there's nothing else to worry about, even if the contents of the fields change completely, or you go ahead and change the record selection rules and settings in the Control field.

THE SPREADSHEET

The AtariWorks Spreadsheet automates the kind of statistical determinations you would otherwise perform with a sheet of paper and a calculator: taxes, sales projections, cash-flow analysis, or personal net worth statements. The Spreadsheet gives you cells to fill with labels, numbers, and formulas. You type in the data, and AtariWorks does all the calculating for you.

You can change the numbers to see what happens, and let AtariWorks recalculate them automatically. Once you have the numbers in place, you can chart your figures to see how they look. Then, when you change a number, you can watch the chart change at the same time. When you have the result you want, you can print it.

The formulas you enter into the Spreadsheet can include everything from simple addition and subtraction to trigonometric equations and logical comparisons.

The following five sections explain how to use the Spreadsheet:

• **Entering Information** shows you what a Spreadsheet document looks like, how to type labels, numbers, and formulas into the Spreadsheet, and how to use the Spreadsheet's built-in functions.

• **Working with the Spreadsheet** shows how to make changes or additions to your Spreadsheet document, and different ways to look at it.

• **Formatting and Printing** shows how to arrange your information on the screen and prepare for printing.

• **Charting a Spreadsheet Document** describes the Spreadsheet's charting capability.

• **Spreadsheet Functions** describes the Spreadsheet's built-in functions. This information appears as Appendix A at the back of this manual.

ENTERING INFORMATION

In this section, you'll learn how to

• Recognize the parts of a spreadsheet document, and design your own documents.

• Select parts of a spreadsheet document.

• Enter and correct information.

• Use labels and values.

• Build a formula using operators, references, and functions.

• Avoid circular references.

An Overview
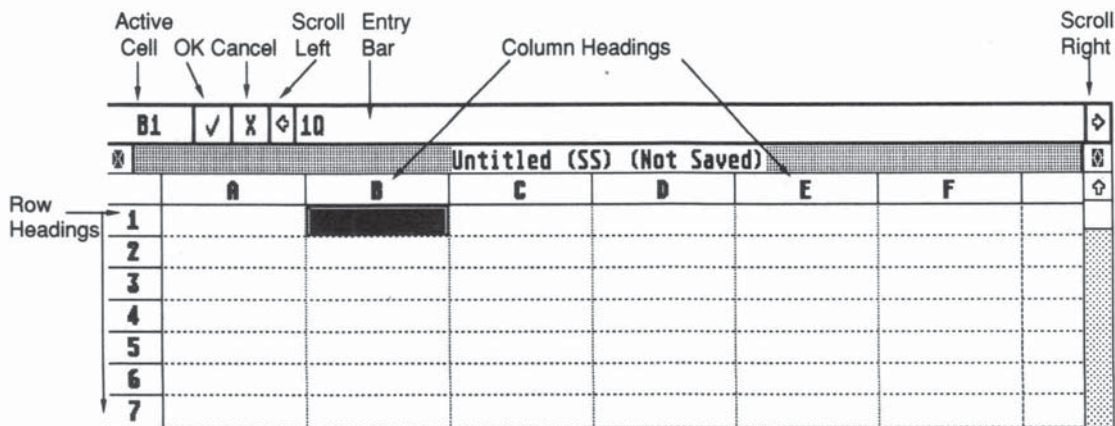
This section shows you what a spreadsheet document looks like in AtariWorks, explains what a spreadsheet is, and shows you how to design your own for maximum effectiveness. The Spreadsheet helps you analyze numbers

that you arrange in rows and columns, such as budgets or financial statements. You can change the numbers to see what happens when the Spreadsheet makes a recalculation. You can also chart your numbers with the Spreadsheet. Change a number in a document, and the chart instantly reflects the change.

A spreadsheet document is made up of vertical columns and intersecting horizontal rows. Each column has a lettered heading (labeled A to Z, then AA, AB, and so on up to IU). Each row has a numbered heading (1, 2, 3, and onward to 9999). Where the columns and rows intersect, they form cells. You can locate a cell or refer to it with a cell reference--its column heading and row heading. For example, A1 is the cell reference for the cell in the upper-left corner of a spreadsheet document: column A, row 1.

You tell AtariWorks where you want to enter information by selecting cells. As you type, the information appears in the entry bar. You enter the information into the active cell by clicking the **OK** button or pressing the [Return] key. The number of cells you can fill is dependent upon the amount of memory available to you.

You put numbers, formulas, and labels into cells to create a spreadsheet document. When you change numbers, you can see how the changes affect the outcome of the Spreadsheet calculations.

You set up a calculation by entering a formula. For example, 2+2 is a simple formula. A1 + A2 is also a formula. Using this formula, AtariWorks looks for numbers in cells A1 and A2 and adds them. By placing the formula in cell A3, for instance, you have the sum of A1 and A2 directly below them in A3.

Labels make your spreadsheet documents easier to understand. A label consists of text, such as Total Expenses, Percent, or 1992 Projections. Labels explain what your numbers and formulas stand for.

Designing a Spreadsheet Document

You may not realize it, but you've probably prepared something similar to a spreadsheet document already. Maybe it was several columns of figures you jotted down for a promotional campaign, or a departmental budget you wrote on graph paper. It's very likely that you've done something like this before.

• To get started, choose a specific subject. For example, if your main purpose is to set up an expense report document, don't get sidetracked by putting a travel budget in the same spreadsheet document.

• Choose your components. Write down all the types of information you need for your calculations. When you type them into a column in a spreadsheet document, you will be setting up your labels.

• Decide on a structure. Map out what goes where. A good structure not only lends itself to easy calculation by AtariWorks, it also makes it easy to find the information you need after the calculations are complete.

• Plan the calculations. Determine equations that produce the results you want. These equations will become your Spreadsheet formulas.

• Decide on the numbers. When your labels and formulas are entered in your Spreadsheet document, you will need only to type in the numbers to find your answers.

Selecting Parts of a Spreadsheet Document

Before you can enter information into a spreadsheet document, you tell AtariWorks where to put the information by selecting a cell or a range of cells. The information you type goes into the active cell in the selection. In any range of selected cells, only the cell outlined with a solid line is active.

You can select cells by clicking or dragging with the mouse or by choosing commands from the Select menu. For more information, see the next subsection, **Entering Information into a Spreadsheet Document.**

To select a single cell, click anywhere in the cell. The following list describes how to select various ranges of cells.

To select a block of cells, drag from the cell in one corner of the block to the cell in the opposite corner.

To select a complete row or column, click the row or column heading.

To select several rows or columns, drag from the first row or column heading to the last row or column heading.

To select all cells through the last cell, choose **All Cells** from the **Select** menu.

When selecting a range of cells, if you drag/paste the last row or column on the screen, AtariWorks scrolls the window and adds to the selection.

AtariWorks considers the last cell in your Spreadsheet document to be the cell at the intersection of the last row and column containing a value, a formula, text, or a reference.

Entering Information into a Spreadsheet Document

You can enter either constant values or formulas into the cells of a spreadsheet document. Constant values can be labels (i.e., text) or numbers. In the case of a formula, your entry should be preceded by a equal sign (=), i.e., =A1+A2.

As you type the information you want to put in the active cell, it appears in the entry bar, just below the menu bar. That way, you can be sure that your entry is correct before you use it for a calculation or a label. It won't appear in the active cell until you enter it (press the [Return] key).

When you enter a constant value or a formula, AtariWorks stores it in the active cell and displays the formatted value in the cell.

There are several ways to enter what you type. You can click the **OK** button, or use the keyboard as described below.

To enter what you type and make the active cell...	Press these keys:
...the cell on the right	[Tab] or right arrow
...the cell on the left	Shift-Tab or left arrow
...the cell below	Down Arrow
...the cell above	Up Arrow

By default, the [Return] keywill take you to the cell below the active cell. But after you use any other key for entering the value, [Return] will follow the direction taken by the previous keystroke.

You can also use these keys to move around in the document when you are not entering information.

While a cell is being edited, i.e. the cursor in the entry bar is blinking, the left and right arrow keys will move the text insertion point in the entry bar. [Shift] plus the Left or Right Arrow keys will move the cursor left or right by the visible number of characters in the entry bar. [Control]-Left/Right key combinations will take the text cursor left or right by one word.

If the cell is not being edited, i.e. the buttons in the entry bar are not visible, pressing the [Control]-Left/Right keys will scroll the entry in the entry bar left and right, if it is not fully visible.

Note: If the entry bar is not active, pressing the space bar activates the current entry and places the cursor at the end of the current string in the entry bar.

Making Corrections to an Entry

If you make a mistake while you're typing information in the entry bar, you can correct it.

To cancel your typing in the entry bar:

Click the cancel box to the left of the entry bar. AtariWorks cancels your typing and restores the original entry. If the original entry was blank, the entry bar will also be blank.

To edit an entry:

To edit an entry you can use the [Backspace] and [Delete] keys to change and type to replace it. You can also place the cursor by clicking the mouse at the appropriate place. The following keys are also valid while editing an entry:

Clear entry:	[Esc]
Cut to the clipboard:	[Control]-X
Copy to the clipboard:	[Control]-C
Paste from the clipboard:	[Control]-V

Entering a Label

Labels let you write explanatory information in a spreadsheet document. Labels make the numbers and formulas easier to understand. You can label the contents of a column or row, or include notes to explain how you perform a certain calculation. Labels help other people understand your spreadsheet document, and also help you when you return to a document that you haven't used in a long time.

You can do all sorts of creative things with labels: a line of hyphens can separate values in a column from their total; a number followed by a letter (3Q) can specify a quarter of the year; a number (1994) can label a year.

To enter a label:

1.   Select a cell.

2.   Type the label. If the label starts with a number or (=), precede it by a double quote mark (").

3.   Click the **OK** button or press the [Return] key.

To fit labels into cells:

If a label doesn't fit inside a cell, AtariWorks automatically runs the label into any blank cells that follow, cutting off the label at the first non-blank cell, if necessary. If you don't want the label

Chapter 5: The Spreadsheet

to overflow into an adjacent blank cell, select the adjacent cell and press the space bar. The cell now contains a character, even though you can't see it, so the label will not run into that cell. The entry bar shows the full entry, regardless of the width of the column.

Usually, a better solution is to widen that column to hold the label. In the top row, place the cursor on the dividing line between columns A and B and drag to the right to widen column A enough.

	A	B	C
1		10	20
2	Gross Sales, Domestic	███████	
3			
4			
5			
6			

Untitled (SS) (Not ‹

Whenever you start an entry with a double quote, AtariWorks stores the entry as a label. The quotation mark is a signal to AtariWorks that you're typing a label. The double quote appears in the entry bar, but will not appear in the cell. If you need a double quote to appear as the first character in a label, begin the entry with a double quote and follow it with another double quote or an equal sign.

When AtariWorks encounters a label while performing a calculation, it treats that cell as having a value of zero.

Entering a Number

To enter an integer or decimal number:

1. Select a cell.

2. Type a number. Include a decimal point, if necessary. For a negative number, begin with a minus sign.

3. Click the **OK** button or press the [Return] key. AtariWorks enters the number and displays it in the active cell.

To type a number in scientific notation:

For very large or very small numbers, you can use scientific notation. To type a number in scientific notation, type an integer or decimal number, followed by an E (upper or lower case, but with no space between) and an integer that represents an exponent of 10. For example, typing **4.3E8** represents 430,000,000. The valid range is from 1E37 down to 1E-36.

Building a Formula

Formulas make the Spreadsheet a useful tool. Without them, you'd just have rows and columns of numbers. Formulas tell AtariWorks what to do with all these numbers.

A formula makes up the content of a cell. When you select a cell, AtariWorks displays its content in the entry bar. In the cell itself, AtariWorks displays its formatted value. When the selected cell contains a constant value (either text or numbers), the display in the entry bar and in the cell will be the same. When the selected cell contains a formula, however, AtariWorks calculates it and displays the resulting value in the appropriate format in the cell. You can always examine the content of a cell by selecting the cell and looking in the entry bar.

What is the format of a cell? The format of a cell is different from its numeric value. A cell's format determines how the value is displayed; for instance, as a decimal, percentage, or in dollars. For more information, see **Changing Number Formats** under **FORMATTING AND PRINTING**, later in this chapter.

What is a formula? A formula calculates a new value from existing values. A formula can consist of numeric values, cell references, operators, and functions. A formula can be as simple as B1+B2, which adds the values in cells B1 and B2. Or a formula can be complex, like: = Pi ( )/2-ATan(B1/Sqrt(1-B12)).

With AtariWorks you can use the keyboard to enter your formula or you can set up most of a formula by pointing and clicking with the mouse. You can point to cells and paste functions without typing.

To enter a formula:

1.   Select a cell and press =.

2.   Type the formula in the entry bar.

3.   Click the **OK** button or press the [Return] key. AtariWorks enters the formula in the active cell, and displays the resulting value. The formula still shows up in the entry bar, so that you can see both the formula and the results simultaneously.

You can set up a simple total of a group of cells by pointing with the mouse and clicking.

Example: to get a total:

1.   Select an empty cell for the total and press =.

2.   Click each cell you want to add that is not a label. (Notice that you cannot use a range of cells in this particular case, so do not drag across the cells.) AtariWorks inserts addition operators (+) between the cells as you click.

3.   Click the **OK** button or press the [Return] key. AtariWorks enters the formula in the active cell, calculates it, and displays the resulting value.

B4		◊ =B2+B3					◊
▨		Untitled (SS) (Not Saved)					▨
	A	**B**	**C**	**D**	**E**	F	◊
1		10	20	30	40		
2	Gross Sales, Domestic	2346					
3	Gross Sales, Foreign	1142					
4	Total Sales	3488					
5							
6							

You can also sum a range of numbers with the **Sum** function. See the **Sum** example at the end of **Absolute References**, below.

Using References with Formulas

In AtariWorks, columns are labeled beginning with columns A through Z and then AA, AB, AC and so on. Rows are labeled as 1,2, 3,... The cell in column A, row 1, is referred to as A1. The number of cells you can fill is dependent upon the amount of memory available to you.

References make formulas flexible. You can use the same value in many formulas by entering the value in a cell and referring to that cell in the formulas. Then, if you change the value of the cell, AtariWorks recalculates the formulas using the new value.

When you build a formula, you can refer to cells using relative references or absolute references.

Relative References

A relative reference gives general directions relative to the current cell, rather than a specific location. It's like saying "Go up two cells and over one to the right." If you copy a relative reference to another cell, the reference changes relative to its new position. For example, if a relative reference in a formula points two rows up and one column to the right, and you copy the formula to another location, it still points two rows up and one column to the right, but it points to a different cell than it did originally.

Absolute References

An absolute reference is different. It refers to a specific cell by its absolute location at the time the reference is made. No matter where you copy the reference to, it still points to the same cell. For example, an absolute reference to cell B1 always points to cell B1, even if the formula containing the reference is copied to another location in the spreadsheet document. AtariWorks uses dollar signs to indicate that a reference is absolute. B1 is an absolute reference to cell B1.

The difference between relative and absolute references is important only when you cut or copy a formula from one cell and paste it into another or when you use the **Fill Right** or **Fill Down** command. For information on copying references, see **Copying Cells** under **Working With the Spreadsheet** later in this chapter.

To enter a formula using a reference:

You can enter a cell reference in a formula either by clicking the mouse or by typing. When you use the mouse, AtariWorks puts the reference into the entry bar for you.

1.   Select a cell and press =.
2.   Click the cell that you want to refer to, or type the cell reference.

You can refer to as many cells as the formula needs. If you do not type an operator in the formula before you select each cell after the first one, AtariWorks supplies the addition operator (+). For example, if you type an equal sign, then click two cells, AtariWorks adds the contents of the two cells.

You can also refer to a range (or block) of cells with one reference. The reference includes the beginning reference, a colon standing for to, and the ending reference. For example, the range reference A2:B5 refers to all the cells from A2 to B5 inclusive. You can use range references only in certain functions: for example, Sum (C4:E10).

To enter a range reference in a formula:

1.   Select a cell.

2.   Type a reference for a range of cells.
--or--
2.   Just click on the first cell in the cell range you want and drag to the last cell in the range.

To enter an absolute reference:

You can create absolute references by typing dollar signs before the

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column letter and row number. You can also use the [Control]/[Shift]/ [Alternate] keys while clicking the mouse to change the cell reference to absolute. It is dynamic. If you switch between [Control], [Shift] and [Alternate] keys while the mouse button is pressed, the type of absolute reference changes. If no key is pressed it is a relative reference.

Mixing References

If you want to refer to cells in such a way that only the column or the row reference is absolute (or relative), you can use mixed references. For example, in the reference $B3, only the column reference (column B) is absolute.

B7		◇ =B6/B4*100					◇
⊠			Untitled (SS) (Not Saved)				⊠
	A	**B**	**C**	**D**	**E**	**F**	⇧
1		10	20	30	40		
2	Gross Sales, Domestic	2346					
3	Gross Sales, Foreign	1142					
4	Total Sales	3488					
5							
6	Cost of Sales	2120					
7	Cost as % of Sales	60.779817					
8							

Operators

An operator is an instruction, such as + or -, that tells AtariWorks to calculate a new value from existing values. For example, in the formula =3+6, the addition sign (+) is the operator that instructs AtariWorks to add the operands 3 and 6 to produce the new value 9. AtariWorks uses two kinds of operators: arithmetics and comparisons.

Arithmetic Operators

The arithmetic operators represent standard calculator functions. These

include

+   Addition - Subtraction
-    Negation (if used with one operand only)
*   Multiplication
/   Division
^   Exponentiation

To use an arithmetic operator:

1.   Select a cell.

2.   Type the first number or click a cell reference.
3.   Type an arithmetic operator.

4.   Type the second number or click a cell reference.

5.   Type as many additional numbers and operators as you need.

6.   Click the **OK** button or press the [Return] key. AtariWorks enters the formula in the active cell, calculates it, and displays the resulting value.

Remember that if you don't type an operator after an operand (number or cell reference) in a formula, AtariWorks automatically inserts an addition sign (+) before the next cell reference when selected.

Comparison Operators

A comparison operator compares two values and produces the value 1 (TRUE) or 0 (FALSE). AtariWorks has six comparison operators:

=   Equals
<   Less than
<=   Less than or equal to
>   Greater than
>=   Greater than or equal to
<>   Not equal to

For example, 3<2 produces the value 0 (FALSE), while 2<3 produces the value 1(TRUE). If cell B17 contains 5 and cell B52 contains 13, then B17>B52 produces 0 (FALSE) and B17<B52 produces 1 (TRUE).

Order of Operators

If you combine several operators in a single formula, AtariWorks performs the operations in this order:

^	Exponentiation
-	Negation
* and /	Multiplication and division
+ and -	Addition and subtraction
= < <= > >= <>	Comparison operators

If two operators of the same level are encountered, their order of evaluation is left to right.

If you want to change this order, use parentheses. AtariWorks first calculates the expressions in parentheses, and then uses those results to calculate the rest of the formula. For example:

Without parentheses: 4*3+2 = 14; -3^2 = -9

With parentheses: 4*(3+2) = 20; (-3)^2 = 9

Functions

A function is a built-in calculation. A function is similar to an arithmetic operator, such as + or -, in that it produces a new value from other values, called arguments.

AtariWorks has 53 built-in functions that you can paste or type into formulas. For a detailed description of each function, see Appendix A, **Spreadsheet Functions.**

Parts of a function: Each function consists of the function name, a set of parentheses, and arguments (the values the function uses to produce a new

---

value) separated by commas.

Arguments to functions: In AtariWorks an argument to a function can be a number, a reference, a range reference, another function, or an expression such as C3/2. You can click cells to insert references into the arguments of a function.

The parentheses are very important. They tell AtariWorks where the arguments begin and end. When you paste a function using the **Paste Function** command from the **Edit** menu, AtariWorks provides the parentheses and positions the insertion point between them. All you do is type the arguments and the commas.

If you type the function instead of pasting it, remember to type the parentheses. Be sure to finish with a right parenthesis; otherwise, AtariWorks won't accept the formula.

Many functions have more than one argument. For example, Average (F1, F2, F3, F4, F5) calculates the average value of cells F1 through F5. It uses a series of references to find an average. Pmt (0.0167,36,12000) calculates the amount you'd have to pay back on a loan of $12,000 over a period of 36 months at 1.67% interest per month.

To enter a function into a formula:

You can include functions in a formula either by typing them or pasting them. To paste a function into a formula in the entry bar:

1.   Select the cell to hold the formula.

2.   Position the insertion point where you want the function to go in the formula.

3.   Choose **Paste Function** from the **Edit** menu.

4.   Click the function you want from the list. AtariWorks pastes the function into your formula, including the parentheses. The insertion point is inside the parentheses, ready to accept arguments to the function.

5.   Type any values or click any cell references required by the function.

6.   Include any additional operators and operands that you need in your formula.

7.   Click the **OK** button or press the [Return] key. AtariWorks enters the formula in the active cell, calculates it, and displays the resulting value.

If you choose to type a function rather than paste it, be sure to include parentheses before and after the arguments.

Avoiding Circular References

To help AtariWorks perform as efficiently as possible, avoid circular references in your formulas. A circular reference in a spreadsheet document is a reference that refers to a cell which in turn refers back to the original cell. More specifically, a circular reference occurs when, in order to calculate a formula in a particular cell, AtariWorks needs the value of the same cell that contains the formula. An example of such a reference is the formula =Sum (A1:A6) when entered in cell A1. Because a circular reference is a reference that has no ending point, the cells involved in a circular reference cannot be calculated. When AtariWorks encounters a circular reference it displays an error message.

A more common example of a circular reference involves a chain of cells and references. For example, a formula in cell E1 may refer to cell E2, which contains a reference to cell E3, which contains a reference to cell E4, which contains a reference back to cell E1. A circular reference like this cannot be resolved.

WORKING WITH THE SPREADSHEET

After you've set up a spreadsheet document, you're ready to start playing with the numbers to see the results of various scenarios. This section shows you ways you can work with a completed Spreadsheet document.

This section shows you how to:

• Play *What If...?*. You can change the content of a cell to see the effect that change has on the rest of your information.

• Choose when to recalculate, rather than having AtariWorks do it automatically.

• Display formulas to help analyze the design of a spreadsheet document.

• Find a cell anywhere in a spreadsheet document.

• Work with blocks of cells, copying, pasting, turning rows into columns and back, filling empty cells, and moving.

• Sort a spreadsheet document.

• Insert blank rows and columns.

These tasks help you analyze the information in your spreadsheet.

Changing the Content of a Cell

One of the Spreadsheet's most important assets is its ability to recalculate whenever you make a change. Each time you make a change, you play "What If?" What if the rate on your building loan goes up by 2%? What if it goes up 5%?

As long as you've saved your original spreadsheet document on disk, you're working with a copy. None of the changes you try are permanent unless you want them to be. On the other hand, if you find several alternative scenarios that you'd like to keep, you can print each one or save each one with a different name.

You can change the entire content of a cell by selecting the cell and typing the new information. The new information replaces the old. Or you can change part of a cell's formula or constant value in the entry bar. To do this, just click in the entry bar and type the information you want to add.

When you are done making changes, click the **OK** button (or press the [Return] key) to enter the new information into the cell. If you decide not to keep your changes, click the Cancel box. AtariWorks restores the previous contents of the entry bar.

Controlling Recalculation

The AtariWorks Spreadsheet normally calculates automatically whenever you enter or change a value. Each recalculation takes some time. You should not use numbers displayed on the screen until calculations are complete, since the numbers may change as a result of the calculations.

If you have many numbers to enter and don't want recalculations to be performed until you are finished, you can switch to manual calculation. With manual calculation, you tell AtariWorks when you are ready to recalculate.

To set manual calculation:

Choose **Manual Calculation** from the **Option** menu. Then, when you've entered all your information and are ready to recalculate manually, choose **Calculate Now** from the **Option** menu. (You may also use the Control-E keyboard combination.)

To return to automatic calculation:

If you no longer have many changes to make, you can switch back to automatic calculation. Choose **Auto Calculation** from the **Option** menu.

When you're examining the effects of changes to a single cell, automatic calculation saves you the trouble of repeatedly telling the Spreadsheet to recalculate.

Showing Formulas or Values

The Spreadsheet usually displays in its cells the values that result from calculations. The entry bar displays the content of a single, active cell. But sometimes you may want to see all the formulas in a spreadsheet document, so you can figure out the logic behind its design.

To show formulas:

To have AtariWorks display all the formulas and un-formatted values, choose **Show Formula** from the **Option** menu.

For analyzing numbers, it's better to look at values than formulas. To have AtariWorks display values, choose **Show Value** from the **Option** menu.

Finding a Cell

If you want to look at a cell that's just beyond the edge of the window, you can find it easily by scrolling. But a cell that's far away on a very large spreadsheet document may be difficult to find.

If you specify the coordinates of a cell, AtariWorks will find it for you. If you know only what's in the cell, you can specify its value, and AtariWorks will try to find a cell that matches what you type. AtariWorks can also take you to the first cell (press [Cir Home], find the last active cell (see below), or take you to the last cell (press [Shift]-[Cir Home]) in a spreadsheet document.

Two commands from the **Select** menu will allow you to find a particular cell: **Find Cell** and **Go To Cell**. Use **Find Cell** to have AtariWorks select a particular cell, and use **Go To Cell** when you just want to see the value of a cell, but do not want to select it. Note that the keyboard combination ([Control]-F or [Control]-G, respectively) is displayed at the right of the menu option for these commands.

With the **Find Cell** command, you can find and select a cell by specifying its reference or value. If the value you're looking for is text, you can specify a portion of the text and AtariWorks will look for the cell containing it.

To find and select a cell:

1.   Choose **Find Cell** from the **Select** menu. (You may also use the [Control]-F keyboard combination.)

2.   Type the reference or the value, or the text of the cell you're looking for, in the Find Cell dialog box.

3.   Click the **Find Next** button.

If you type a reference, AtariWorks moves to the cell and selects it. If you type the cell value, AtariWorks looks for a cell whose value matches what you typed. If it finds a match, AtariWorks moves to and selects the cell. If AtariWorks can't find anything to match the text you typed, it displays an alert box.

With the **Go To Cell** command, you can do exactly the same thing as in Find Cell without changing the active cell.

To find a cell without selecting it:

1.   Choose **Go To Cell** from the **Select** menu. (You may also use the [Control]-G keyboard combination.)

2.   Type the reference of the cell you're looking for in the Go To Cell dialog box.

3.   Click the **OK** button. AtariWorks moves to the cell but does not select it.

Finding an Active Cell

The **Show Active Cell** command from the **Select** menu help you move quickly around a spreadsheet document. If you have been scrolling all around the document looking at various cells, the **Show Active Cell** command takes you back to where you were last working.

To scroll to the currently selected cell, choose **Show Active Cell** from the **Select** menu. AtariWorks scrolls to the active cell.

Copying Cells

It doesn't take long to type the content of a cell. But there's no real need to type the same thing over and over again. With AtariWorks, you don't have to. Using commands from the **Edit** menu, you can copy the content of a cell. For example, if you have sales projections for four quarters, you can set up the formulas for the first quarter and then copy them for the rest.

What Happens When You Copy References?

When you copy and paste a formula that contains relative references, the references are adjusted to reflect their new locations. If you copy and paste a formula containing a relative reference that refers up two rows and over one column, the adjusted reference will refer up two and over one to whatever new cell holds that relative position. For example, if the formula in cell C7 is = C4 and you copy it to cell D7, AtariWorks changes the formula to = D4 so that it still refers to the cell three up from the formula cell. In this kind of situation, copying can be very helpful as long as the structure of the spreadsheet requires these parallel, relative references.

When you paste relative references, the new references look different from the old ones, and refer to different cells. However, a copy of an absolute reference refers to exactly the same cell as the original reference. Both of these occurrences can serve you well in parallel construction, but they also can cause problems if you don't want parallel constructions in your spreadsheet document.

Copying and Pasting Values and Formulas

When you copy, AtariWorks places a copy of the selected cells onto the Clipboard for you to paste somewhere else.

To copy and paste a selection:

1.   Select the area you want to copy.

2.   Choose **Copy** from the **Edit** menu (or press [Control]-C). AtariWorks puts the selection onto the Clipboard. You can paste multiple copies of the same item.

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3.   Click the upper-left cell of the area you want to paste into.

4.   Choose **Paste** (or press [Control]-V) from the **Edit** menu. AtariWorks pastes the full contents of the Clipboard back into the spreadsheet document, adjusting relative references to reflect their new locations.

Pasting Values Only

Sometimes you will want to paste just resulting values, without the formulas. The **Paste with Option...** command lets you choose to paste just values from the Clipboard back into a spreadsheet document. For example, if you have an accounts receivable ledger in one spreadsheet document and a general ledger in another, you could paste just the total of the accounts receivable (that is, values only) to the general ledger. You don't want to paste the formulas that produce the values, however, since those would produce different values in the general ledger.

To paste values only:

1.   Select the area you want to copy, and choose **Copy** from the **Edit** menu (or press [Control]-C).

2.   Click the upper-left cell of the area you want to paste into.

3.   Choose **Paste with Options...** from the **Edit** menu.

4.   Click the **Values Only** option.

5.   Click the **OK** button.

Transposing Rows and Columns

You might want to turn a column into a row if you want to plot that column as a bar chart. Or you might want to turn a row into a column so you can make a pie chart out of it. Transposing rows and columns is also useful for converting records and fields that you copy from the Database. For information about copying information from the Database, see the last Chapter of this manual, **Using the Tools Together.**

To transpose:

1.   Cut or copy a selection to the Clipboard. The selection can be a single row or column or any range of cells. (You may also use the [Control]-X or [Control]-C keyboard combinations.)

2.   Click the upper-left cell of the area you want to paste into. This cell can be in the same spreadsheet document or you can move to another one.

3.   Choose **Paste with Options...** from the **Edit** menu.

4.   Click the **Transpose** option and choose whether you want to paste values only or values and formulas.

5.   Click the **OK** button. AtariWorks transposes the rows into columns or vice versa, then adjusts relative references to reflect their new locations.

Filling into Adjacent Cells

Filling lets you copy the content of a row or column into adjacent rows or columns. Within a selection, you fill cells to the right of the first column of the selection or below the first row of the selection. Filling fills in all cells within the selection, replacing their content if they are not blank, so you should be sure that any cells containing information can be replaced.

To fill into adjacent cells:

1.   Drag across one column or row containing the data you want to copy and as many blank adjacent rows and columns as you want to fill. (Make sure the entire block is highlighted.)

2.   Choose **Fill Right** or **Fill Down** from the **Edit** menu. (You may also use the [Control]-R or [Control]-D keyboard combinations.) AtariWorks copies the contents of the original cells into the adjacent cells.

If you have any relative references in copied formulas, AtariWorks adjusts them relative to their new positions. Absolute references stay as they were.

Moving Cells

Suppose you developed a whole spreadsheet document and then decided you wanted your totals at the top instead of at the bottom. The **Move** command lets you select a block of cells and move it to a new location within the same spreadsheet document. When you move cells, all references in the cells in the new location refer to the same cells that they did before you moved them; the formulas still calculate from the same values. AtariWorks adjusts any other formulas on the spreadsheet document that contain references to the moved cells, so that they refer to the new location of the moved cells.

To use the **Move** command, you must know the coordinates of the cell at the upper-left corner of the location you want to move to.

To move a block of cells:

1.   Choose **Move** from the **Edit** menu.

2.   Type the reference of the cell that will contain the upper-left corner of the moved selection. AtariWorks will replace the contents of any cells that aren't blank, so make sure their contents can be replaced.

3.   Click the **OK** button. AtariWorks moves the selection from its old location and pastes it into the new one.

All relative references in the moved cells refer to the same cells as they referred to before the move.

Sorting

You can change the order of rows in a selection by sorting. You might want to sort a payroll document in alphabetical order by last names, or you might want to sort a stock room inventory by part number. AtariWorks lets you sort in ascending and descending order.

If you have numbers and text in the same column, the numbers come first, whether you're sorting in ascending or descending order. Blank cells are always

sorted last. You can sort on up to three key columns. This allows you to have subgroups for subtotals. For example, you could sort a payroll document by department, supervisor, and last name, setting up a subtotal for each category. That would let you analyze payroll expenses by department and supervisor. Sorting affects only selected cells. AtariWorks rearranges the selected cells in each row according to the order you specify for the key column. When you change the order, most cells will have different cell references. AtariWorks changes both absolute and relative references, inside and outside the selection, to reflect new cell locations.

To sort a spreadsheet document:

1. Select the cells you want to sort.

2. Choose **Sort...** from the **Edit** menu.

3. Type the letter of the column heading on which you want to sort the key column.

4. Click the order you want to sort in (ascending or descending).

5. If you have a second or third key column, move the insertion point into the appropriate box and type the letter.

6. Click the **OK** button or press the [Return] key. AtariWorks reorders your selection.

Note: You can only sort rows. If you try to sort columns based on key row headings, AtariWorks displays an alert box.

Copying a Spreadsheet Table as a GEM Metafile

To copy a spreadsheet table as a GEM Metafile, first select the range of cells you want to appear as a table. Then select **Copy as Metafile** from the **Edit** menu. AtariWorks copies the selected block to the clipboard as a GEM Metafile. This is useful if you want a part of your spreadsheet to appear as it is in a word processor document.

Inserting and Deleting Rows or Columns

You can insert rows or columns in a spreadsheet document whenever necessary. So if you have just finished a large document after hours of work and you discover that you need just one more row, AtariWorks can help you. To insert a row or column When you insert rows or columns, both relative and absolute references are adjusted accordingly. So if you have a cell referring to cell A1 and insert a row above row 1, the changed reference will be to cell A2, one row down.

To insert a row or column:

1.   Click the row or column heading where you want to insert a new row or column. Select the number of rows or columns you want to insert.

2.   Choose **Insert Row/Column** from the **Edit** menu or press [Control]-I. AtariWorks inserts the new row or column at the selection point, moving the selected row beneath the insertion, or the selected column to the right of the insertion. All the rows or columns that follow the new one are renumbered.

To insert multiple rows or columns:

1.   Click the row or column heading where you want to insert new rows or columns. Select the number of rows or columns you want to insert.

2.   Choose **Insert Row/Column** from the **Edit** menu. AtariWorks inserts the chosen number of rows or columns, moving the selected row or column down or to the right, as above.

To delete a row or column:

1.   Click the row or column heading that you wish to delete.

2.   Click on **Delete Row/Column** from the **Edit** menu or press [Control]-K. (To merely blank the cells in that row or column, leaving the row or column in place, click on **Delete** instead.)

FORMATTING AND PRINTING

The first two sections of this part of the manual explained how to set up a spreadsheet document and to perform calculations with it. In this section, you'll learn how to change the way it looks.

D15		◊					
			Untitled (SS) (Not Saved)				
	A		**B**	**C**	**D**	**E**	
1	SALES SUMMARY, 1993 (000 omitted)						
2							
3			1Q	2Q	3Q	4Q	
4	Gross Sales, Domestic		$2,346.00	$3,076.00	$2,879.00	$1,986.00	
5	Gross Sales, Foreign		$1,142.00	$1,816.00	$1,686.00	$1,223.00	
6	-------------		-----------	-----------	-----------	-----------	
7	Total Sales		$3,488.00	$4,892.00	$4,565.00	$3,209.00	
8							
9	Cost of Sales		$2,120.00	$2,761.00	$2,466.00	$1,850.00	
10	Cost as % of Sales		60.78	56.44	54.02	57.65	
11							

This section also explains how to print a spreadsheet document when you have the format adjusted.

Read this section to learn how to:

• Change the way numbers are displayed

• Realign the content of cells

• Emphasize cells with bold type or underlining

• Display or remove the grid

• Change the column width

• Protect cells from changes

- Set page breaks for printing

- Print a spreadsheet document

About Cell Formats

The value of a cell and how AtariWorks displays that value within the cell are different. The value of a cell is determined by its formula. How that value is displayed is determined by the format of the cell. You can change the appearance of a spreadsheet document in a variety of ways without affecting formulas or values in cells. When you change a cell's format, its value does not change; AtariWorks displays the cell's value in the new format. Using commands from the **Format** menu, you can specify the format of a cell after you enter the content of the cell.

Changing Number Formats

Unless you specify otherwise, AtariWorks displays numbers in General format (that is, as accurately as possible, given the cell width). For example, if you type 12345.6789, AtariWorks may display it in a variety of ways, depending on the width of the cell: 12345.679, 12345.7, 12346, 1E+4, and so on.

Numbers can be displayed in General format, as fixed decimals, dollars, percents, or in scientific notation. With all formats except General, you can set a fixed number of decimal places to display. One spreadsheet document can contain many different cell formats.

To change the format of cells:

1. Select the cells you want to format.

2. Choose General, Fixed, Dollar, Percent, or Scientific from the Format menu. AtariWorks adjusts the format of the selected cells accordingly.

Unless you specify otherwise, AtariWorks displays two decimal places in your numbers in all formats except General. You can choose to display up to 15 decimal places.

To change the number of decimal places:

1.   Select the cells for which you want to change the number of decimal places.

2.   Choose **No. of Decimals...** from the **Format** menu.

3.   Type the number of decimal places you want displayed.

4.   Click the **OK** button or press the [Return] key. AtariWorks adjusts the numbers accordingly.

Displaying Numbers with Commas

You can choose to display numbers with or without commas. If you type commas into your numbers as you enter them, AtariWorks treats the number as text. Because you may not want numbers treated as text, AtariWorks provides an alternative, and saves you the trouble of typing in commas.

To choose whether to show commas:

1.   Select the cells you want to format.

2.   Choose **Commas** or **No Commas** from the **Format** menu.

Aligning Cell Contents

Labels automatically line up on the left of the cell and numbers on the right. However, you might want to center or right-align your labels, or left-align your numbers. So AtariWorks lets you specify the alignment of cells. You can select columns, rows, a single cell, or a block of cells to realign.

To change the alignments of cells:

1.   Select the cell(s) whose alignment you want to change.

2.   Choose **Align Left, Align Center,** or **Align Right** from the **Format** menu. AtariWorks adjusts the alignment of the selected cell or cells.

Adding Emphasis to Cell Content

Spreadsheet cells contain normal (plain) type unless you change the type with the **Format** menu. You can add emphasis to the content of any cell by changing the style of the cell to Bold, Underlined, or both. Note that there are keyboard equivalent commands to the right of each menu option.

To change the type style of cells:

1. Select the cells whose type style you want to change.

2. Choose **Bold** from the Format menu (or type Control-B), **Underline** (Control-U), or **Normal Text** (Control-N). AtariWorks changes the type style of the selected cells.

Displaying the Grid

You can choose whether or not to display the grid. To display the grid, choose **Show Grid** from the **Option** menu. To remove the grid, choose **No Grid**.

Changing Column Width

When something doesn't fit in a cell, you can widen the cell. You can change the width of a column by dragging the line at the right of the column heading or by choosing **Column Width...** from the **Format** menu.

To change column width by dragging:

1. Position the pointer on the right edge of the column heading.

2. Press and hold the right mouse button. The pointer changes to a finger, and you can drag to the right to make the column wider, or drag to the left to make the column narrower.

When you enter a label, if you type more characters than will fit in a cell before you've widened it, AtariWorks continues the label into adjacent blank cells, if possible.

Using Fonts in Cell Contents

At the bottom of the **Options** menu is the **Fonts...** option. If you are using scalable fonts, as with SpeedoGDOS, you may wish to have the text of your spreadsheet document appear as if it were typeset. AtariWorks uses the same font for a single document. You can use different fonts for different documents.

To change fonts:

1.   Click on **Fonts...** at the bottom of the **Options** menu.

2.   From the Fonts dialog box, choose the font by clicking on the font selector bar and moving your mouse down the list until the font you want is highlighted. Click on the font.

3.   On the next line, you can type in the size of the font (a range from 1 point to 144 points is listed at the side of the line). There are blanks for three numbers, but you do not need to use all of them.

4.   Once you have the font style and size you want, click on the **OK** button or press the [Return] key.

Protecting Cells from Changes

When you set up forms for other people to fill in, or if you have important formulas that took a long time to set up, you probably would like to protect this work from being changed. In AtariWorks, you can do this with cell protection. Later on, if you need to change the contents of a protected cell, you can remove cell protection. You can set protection separately for each cell or range of cells.

To set cell protection:

1.   Select the cell or range of cells you want to protect.

2.   Choose **Protected** from the **Option** menu.

AtariWorks protects the selected cells. You won't be able to type in the protected cells unless you remove cell protection. The values in cells with

formulas still change, but you won't be able to change the formulas themselves until you remove cell protection.

To remove cell protection:

1. Select the cell or range of cells whose protection you want to remove.

2. Choose **Not Protected** from the **Option** menu.

Setting Page Breaks

In a spreadsheet document, you can set both horizontal and vertical page breaks. AtariWorks automatically sets page breaks according to the margins you choose in the **Page Setup...** command from the **File** menu. But you may want to specify your own page breaks. That's what the **Set Page Break** command is for.

To set a page break:

1. Select the cell that you want to be at the upper row/left column the new page.

2. Choose **Set Page Break** from the **Option** menu. Vertical and horizontal dashed lines (page break indicators) show where you've set the page break.

To remove a page break:

1. Select the cell in the upper-left corner of the page.

2. Choose **Remove Page Break** from the **Option** menu. AtariWorks removes the manual page break--both the horizontal and vertical dashed lines.

Printing

When you're ready to print a spreadsheet document, you can specify page breaks and set up headers and footers to print at the top and bottom of every

page. For a detailed explanation of the printing process, including how to fill out the necessary dialog boxes, see **Printing a Document** in Chapter 2. This section discusses only items that are specific to printing a spreadsheet document.

When you're ready to print a spreadsheet document, you have two options. You can choose to print:

• All cells through the last cell, or

• Only selected cells.

If you use the **Print...** command without selecting more than one cell, AtariWorks prints all cells through the last cell. With each of these options, you can choose whether or not to print row and column headings. If you want these printed, click the **Print Row and Column Numbers** option in the Page Setup dialog box.

To print an entire spreadsheet document:

1.   Choose **Page Setup...** from the **File** menu.

2.   Click the appropriate options.

3.   Click the **OK** button or press the [Return] key.

4.   Choose **Header/Footer...** from the **File** menu.

5.   Type any text you want for a header and footer.

6.   Click the **OK** button or press the [Return] key.

7.   Choose **Print...** from the **File** menu.

8.   Click the appropriate options.

9.   Click the **OK** button or press the [Return] key. AtariWorks prints your entire Spreadsheet document.

After you press **OK,** AtariWorks will ask you if you wish to suppress zeros. If you click on **Yes,** your printout will be blank in all cells that have a numeric value of zero (except labels). If you choose **No,** the zeros shown on the screen will also appear on your printout.

If the document is too wide to fit on one page, AtariWorks first prints on subsequent pages the remaining columns for the rows that fit on that page, before continuing to print the remaining rows.

To print a range of cells:

1. Select the range of cells you want to print.

2. Choose **Print...** from the **File** menu.

3. Click the appropriate options.

4. Click the **OK** button or press the [Return] key. AtariWorks prints just the selected range of cells.

If the selection crosses a page break, AtariWorks prints the selection on two pages.

CHARTING A SPREADSHEET DOCUMENT

The Spreadsheet's charting capability can convert information from spreadsheet documents into two kinds of charts. Each spreadsheet document can have up to 15 chart definitions stored with it. A chart definition consists of the information you specify in a dialog box for either a series chart or a pie chart. When you're trying out different scenarios in the Spreadsheet, changing the numbers or the formulas you use for calculation, the results show up immediately on your chart.

Charts can speed up your analysis of numbers. Relationships that are otherwise hard to see show up easily on a chart. You can use information from other spreadsheet or database programs to make charts. Just copy the information into a AtariWorks spreadsheet document, then you're ready to create a chart.

This section explains how to use the Spreadsheet's charting capability to plot the information in your spreadsheet documents. You'll learn how to:

- Create series charts

- Create pie charts

- Work with chart definitions and charts

AtariWorks can create two types of charts: series charts and pie charts. Series charts show relationships between numbers. For example, a series chart might illustrate a company's total sales for each of the last four quarters. Pie charts help you see proportions of a whole. For example, a pie chart might show a breakdown of your expenses as part of an overall budget.

Series Charts

This section gives a brief overview of the different kinds of series charts and describes how to create them. AtariWorks draws four types of series charts: line charts, bar charts, stack charts, and combination (called "combo" in the dialog box) charts. Each of these charts gives you a different way of looking at the same information. The type of chart you use depends on the information

you're analyzing, or how you want to show it. It's similar to working with an artist: you supply the information and explain what kind of chart you want, and the artist draws it. Of course, with AtariWorks you can use the same information with different types of charts to see quickly which one works best.

Line and Bar Charts

Line Charts: A line chart uses a line to link together points that represent numbers. When you compare more than one set of numbers, each set of numbers has one line. As each line crosses the categories on the horizontal axis, it makes the intersection with a distinct symbol called a point marker. Line charts are very effective at showing a growth or decline in numbers over time, a relationship called a *trend*.

Bar Charts: When you're comparing more than one set of numbers, a bar chart groups the numbers by category. Bar charts compare sets of numbers divided into discrete categories. Use bar charts when it's important to compare numbers within a category of numbers.

Stack and Combination Charts

Stack Charts: Stack charts are a variation on bar charts. Stack charts illustrate component parts of a total as they change. A regular bar chart doesn't show these amounts added up, so although you see how the amounts compare, you don't see their total.

Combination Charts: Combination charts combine a bar chart with a line chart. Use combination charts when you want to see one set of numbers (with bars) and the trend of another set of numbers(with a line) at the same time.

Creating a Series Chart

To create a series chart, set up a chart definition for a series chart by using the Chart Definition dialog box. In this dialog box, you provide all the information AtariWorks needs to draw a series chart of your spreadsheet data. You specify the chart type, a chart title, titles for the vertical and horizontal scales, the headings of the column and rows to be charted and to be used for the data legend and the horizontal titles, and the vertical scale of the chart.To see the

Chart Definition dialog box, choose **New Series...** from the **Chart** menu. This takes you directly to a new Chart Definition dialog box. You can put a title on the chart itself by typing it in the Chart Title box. If you don't specify a title, AtariWorks will plot the chart with the title "Untitled."

```
 Works  File  Edit  Window  Select  Format  Options  Chart
 A1          ◊ "                              SALES SUMMARY, 1993   (88 ◊
┌──────────────────────────────────────────────────────────────────┐
│    ┌─────────┬──────────────────────┬──────────────────────┐      │
│  1 │  Type   │   Values to be Plotted │   Vertical Scale     │      │
│  2 │  LINE   │   1st Row:  7___       │  ■ Numeric           │      │
│  3 │ □ ╱╲╱   │   2nd Row:  8___       │  □ Semi-Logarithmic  │      │
│  4 │         │   3rd Row:  8___       │                      │      │
│  5 │  BAR    │   4th Row:  8___       │   Range of values    │      │
│  6 │ ■ ▐█▌   │                        │                      │      │
│  7 │         │   From Column:  8_     │  Maximum:  5500___   │      │
│  8 │  STACK  │   To Column:    E_     │  Minimum:  2500___   │      │
│  9 │ □ ▐█▌   │                        │                      │      │
│ 10 │         │  Data Legends in Column:  A_   ■ Draw Grid    │      │
│ 11 │  COMBO  │  Horizontal Titles in Row: 3__   Label Chart  │      │
│ 12 │ □ ▐█▌   ├─────────────────────────────────────────────  │      │
│ 13 │         │       Chart Title:  Sample Series Chart____   │      │
│ 14 │  Vertical Scale Title:  Total Sales_____        │      │
│ 15 │  Horizontal Scale Title:  FY93 Quarters_____        │      │
│ 16 │          ┌───────────┐      ┌─────────┐                 │      │
│    │          │  Plot It! │      │ Cancel  │                 │      │
│    └──────────┴───────────┴──────┴─────────┴─────────────────┘      │
└──────────────────────────────────────────────────────────────────┘
```

The four icons in the upper-left corner of the Series Chart dialog box let you choose between a line chart, a bar chart, a stack chart, or a combination (combo) chart. To choose a chart type, click the icon that represents the type of chart you want to make. If you aren't sure what type you want, review the descriptions at the beginning of this section, or just choose a type to experiment with. You can easily change to another type later.

You can also specify titles for the horizontal and vertical scales of the chart. Scale titles help to explain the units of information shown on the scales. If you don't type scale titles in the text boxes, AtariWorks will not show any vertical and horizontal scale titles.To specify titles for the scales, type titles in the Vertical Scale Title and Horizontal Scale Title text boxes in the Series Chart dialog box. When you plot the chart, these titles appear on the chart itself.

Numbers define a chart, telling AtariWorks how high to make a bar or where to put a point on the scale. The numbers that define a chart are in the rows and columns of your spreadsheet document. AtariWorks lets you plot up to four sets of information in a series chart. That means you can choose up to four rows from a spreadsheet document for charting.

To specify the rows and columns that you want to chart:

1.   In the Values to be Plotted boxes, type the headings (numbers) of the rows that contain the values you want to chart from the spreadsheet document. If the data you want to chart is in columns, you'll need to transpose it into rows before charting. Activate the spreadsheet document and use the **Copy** and **Paste with Options** commands from the **Edit** menu.

2.   In the From Column and To Column boxes, type the headings of the columns which begin and end the information you want in the rows you specified in step 1.

AtariWorks will chart numbers in the specified rows from the beginning column to the ending column.

Note: The columns must be adjacent to one another.

Labels help you identify your numbers. Your spreadsheet row labels (the text that describes the information in the rows) become the data legend. The data legend describes the sets of information in the chart. Your spreadsheet column labels become titles for the horizontal axis. AtariWorks calls these horizontal titles.

To specify a data legend and horizontal titles:

1.   In the Data Legends in Column box, type the heading of the column containing the label(s) for the row(s) of information you're charting. The data legend will appear at the bottom of the chart, and will identify the shading patterns used for each bar in a bar chart, or the shape of the point marker used for each line in a line chart.

2.   In the Horizontal Titles in Row box, type the heading of the row containing the labels for the columns that you're charting. These labels will appear along the horizontal scale to label each bar in a bar chart or each point in a line chart. (If you are charting many columns, there may not be room for every label on the chart).

Setting the Vertical Scale

You can choose to have a numeric scale or semilogarithmic scale for the chart. A numeric scale is divided into ten regular increments (10, 20, 30, 40,...100, for example).

A semilogarithmic scale exaggerates the size of smaller numbers and minimizes the size of larger numbers. Such a scale makes it easier to show very large numbers and very small numbers on the same chart. You can also choose to limit the chart to a certain range, between a minimum and a maximum. You might want to do this if all your amounts were greater than a certain amount, like a million, or less than a certain amount, like two million, or between two amounts. If your minimum were one million and your maximum two million, you could use the full range of the chart to see the numbers between those two figures. Setting a maximum can also make a chart with a numeric scale easier to read.

When you choose a numeric scale, AtariWorks uses the largest number in the chart as the top of the scale. AtariWorks divides the scale into ten segments. To establish more standard divisions, you can set a maximum that is a multiple of ten.

To set the vertical scale:

1.   In the New Series Chart dialog box, click **Numeric** or **Semilogarithmic** for the vertical scale.

A grid helps you see where points on the chart line up on the scales. Labels (titles) help you identify what the numbers mean. You can choose whether a chart will show the grid or the labels. To show the grid or labels, if they are not already checked in the New Series Chart dialog box:

- Click the **Draw Grid** option.
  --or--
- Click the **Label Chart** option.

If the options are checked already, and you do not want either a grid or the labels on your chart, click to ignore them.

Plotting the Chart

After you've filled out the dialog box, you can take any of the following actions.

To plot the chart, click the **Plot It!** button. AtariWorks draws the chart and stores the definition with the spreadsheet document.
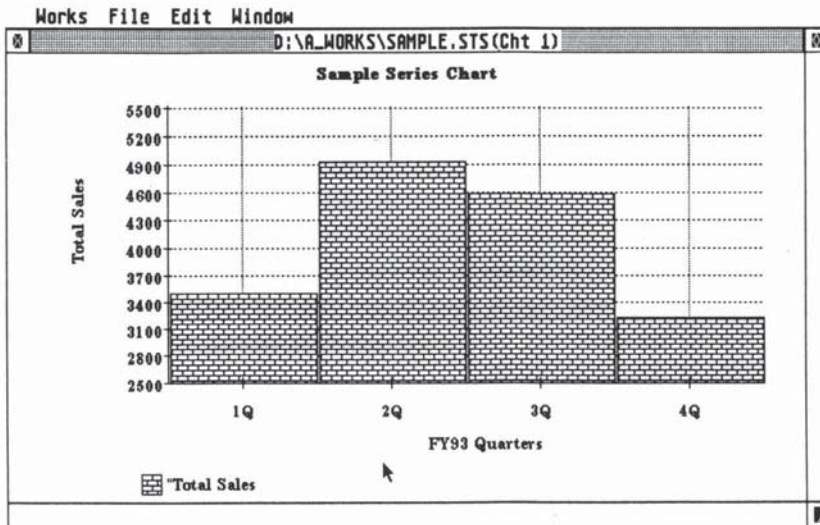
To return to the spreadsheet document without storing the chart definition or drawing the chart, click the **Cancel** button.

If you want to continue working with your series chart before you begin to

learn about pie charts, skip ahead in this section to **Working with Charts** and **Chart Definitions.**

Pie Charts

This section explains when to use pie charts, what pie charts show, and how to create them.

When to Use a Pie Chart

Pie charts compare parts of a whole. For example, a pie chart can illustrate which parts of a company's budget are allocated to production, marketing, development, and overhead. Pie charts compare only one set of information, dividing it into parts of a total, represented by the whole pie. In a spreadsheet document, this corresponds to one column of numbers. A column of labels provides the key for each slice of the pie. AtariWorks calls these labels value titles.

If you have a spreadsheet document with several columns of information that you want to chart as a pie chart, you will have to define a pie chart for each column. Each of the pie chart definitions will be stored with your spreadsheet document, so that you can look at them at any time.

Creating a Pie Chart

To set up a chart definition for a pie chart, you use the Pie Chart Definition dialog box. In this dialog box, you specify the column containing the values you want to plot, the beginning and ending row headings, and the column containing the labels for the value titles.

To see the Pie Chart Definition dialog box:

1.   Select **New Pie...** or **Select...** from the **Chart** menu.

2.   Choosing **New Pie Chart** takes you directly to a Pie Chart Definition dialog box.

3.   Choosing **Select Definition** gives you the Select Chart dialog box.

Select a chart definition name and click the **OK** button to see the Chart Definition dialog box.

You can put a title on the chart itself by typing it in the Chart Title box of the Pie Chart Definition dialog box. If you don't specify a title, AtariWorks will plot the chart without any title.

To specify a chart title, type a title for the chart in the Chart Title box. When you plot the chart, this title appears directly above the chart.

When you define a pie chart, you need to tell AtariWorks what values to plot. Fill in the rest of the New Pie Chart dialog box to indicate which values you want to plot and which value titles you want to use.

Exploded Pie: You can also explode a sector of the pie chart if you wish. Thus, you can make a particular item more emphatic than the others.

Works	File	Edit	Window	Select	Format	Options	Chart

| A1 | | ◊ | " | | | SALES SUMMARY, 1993 | (88 | ◊ |

D:\A_WORKS\SAMPLE.STS (SS) (Saved)

	A	**B**	**C**	**D**	**E**		◊
1							
2			**Pie Chart Definition**				
3						Q	
4	Domestic		Chart Title: Sample Pie Chart			986.00	
5	Foreign					223.00	
6							
7	Total Sal		Plot Values in Column:	B_		209.00	
8			From Row:	4___			
9	Cost of S		Through Row:	5___		850.00	
10	Cost as %		Column of Value Titles:	A_		57.65	
11			Explode Row:	5___			
12							
13			Plot It!	Cancel			
14							
15							
16							◊

Plotting the Chart

After you've filled out the dialog box, you can take either of the following actions.

To plot the chart, click the **Plot It!** button. AtariWorks draws the chart and stores the definition with the spreadsheet document:

Sample Pie Chart
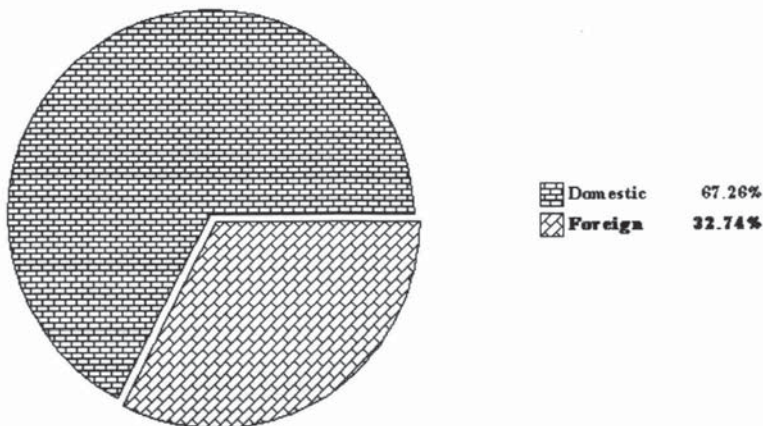
| | Domestic | 67.26% |
| | Foreign | 32.74% |

To return to the spreadsheet document without storing the chart definition or drawing the chart, click the **Cancel** button.

Working with Charts and Chart Definitions

Once you've set up a chart definition for either a series chart or a pie chart, you can continue to work with it. You can:

• Change the name of a chart definition.

• Select either a chart or a chart definition to look at again.

• Change a chart by changing information in the spreadsheet document or by changing its definition.

• Copy or remove chart definitions from a Spreadsheet document.

Changing Chart Definition Names

The title bar of a chart definition dialog box shows the name of the chart definition. When you set up several chart definitions for a single spreadsheet document, you'll be able to identify each one by name. Unless you specify a name with the Edit menu as described below, AtariWorks automatically names each chart definition with the name of the spreadsheet document plus the word "Chart" and a number from 1 to 5.

Selecting a Chart

After you've defined a chart, you can choose to draw it directly from the **Chart** menu. You don't have to set up a new definition every time you want to chart something. Here's how to draw a chart quickly:

1.   **Choose Draw...** from the **Chart** menu. AtariWorks displays a dialog box listing the chart definition(s) stored with the active spreadsheet document.

2.   Select the chart you want to see.

3.   Click the **OK** button or press the [Return] key. AtariWorks draws the chart.

Selecting a Chart Definition

If you've set up a chart definition, you might want to look it over or make changes. You can move to a chart definition dialog box from the **Chart** menu when you're working in the Spreadsheet:

1.   Choose **Select...** from the **Chart** menu. AtariWorks displays a dialog box listing the chart definitions stored with the active spreadsheet document.

---

2. Select the definition you want to see.

3. Click the **OK** button or press the [Return] key. AtariWorks opens the dialog box containing the definition you specified.

You may find that you need to change something about a chart. You can change the actual contents of a spreadsheet document and see those changes reflected immediately in the chart. Or you can change the chart definition, the information you want to chart, the type of chart, the titles on the chart, or the scale. You can work on a spreadsheet document and a chart at the same time, as you analyze your information. If you're making projections or comparing alternatives, you see graphically how alternative numbers or calculations affect your results, without waiting, because the chart is linked directly to the spreadsheet document.

To change spreadsheet information while charting:

1. Click anywhere in the Spreadsheet window to activate it.

2. Select the cells you want to change and make the changes. As you enter the changes in the spreadsheet document, the chart will reflect them.

The chart definition tells AtariWorks what information to plot and where to put it. You can change a chart definition whenever you want.

To change a chart definition:

1. Open a chart definition dialog box. You can do this from the **Chart** menu.

2. Change the appropriate information in the definition.

3. Click **Plot It!** to see the changed chart, save the changes to the definition and discard the original definition.

Copying a Chart Definition

AtariWorks lets you make a copy of a chart definition. Then you can make changes to the copy without changing the original. You'll find this useful if you need to make several similar charts from the same spreadsheet document.

To copy a chart definition:

1.   Choose **Duplicate...** from the **Chart** menu. AtariWorks displays a dialog box listing the chart definitions stored with the active spreadsheet document.

2.   Select the definition you want.

3.   Click the **OK** button or press the [Return] key. The chart definition dialog box appears. You can change the title of the chart and its characteristics.

When you click **Plot It!**, you store the new definition with the spreadsheet document. The original definition remains stored unless you decide to remove it.

Removing a Chart Definition

Suppose you decide you no longer need a chart, or accidentally make a chart you don't want. Or perhaps you already have reached the limit of fifteen definitions, and you want to make a new one. You can remove a chart definition you don't want to make room for another.

To remove a chart definition:

1.   Choose **Erase...** from the **Chart** menu. AtariWorks displays a dialog box listing the chart definitions stored with the active spreadsheet document.

2.   Select the definition you want to remove.

3.   Click the **OK** button or press the [Return] key. AtariWorks removes the chart definition.

Viewing More Than One Chart at the Same Time

You can have more than one chart for a spreadsheet document on the screen simultaneously and compare them. You can also have two or more charts of same or different spreadsheet documents open at the same time in different documents. Just set different definitions and plot the charts in different windows. Now resize and place them side by side and you are ready to compare the results. Now change your numbers in the spreadsheet window and see how they reflect in different windows.

Saving Charts as GEM Metafiles

Choose **Save** from the **File** menu when the chart window is active. AtariWorks shows the Files Selector box. Give the chart a filename and click **OK.** AtariWorks saves the chart as a GEM Metafile to the disk. You can now import the file into the Word Processor or into any other application of your choice.

USING THE TOOLS TOGETHER

AtariWorks is more than three separate tools. While each tool helps you in one area of your work, the tools can also work together to perform additional tasks they can't perform alone. The Word Processor is ideal for writing, and with information from the Database you can also use it to make business forms, customized letters, and mailing labels. You can copy Database figures to the Spreadsheet, and you can include Spreadsheet figures in Database documents. You can also copy Spreadsheet information, including charts, to the Word Processor. Then you can use the Word Processor's special type styles and other features to make the information more attractive.

This part of the manual explains how to use the AtariWorks tools together:

• **Moving Information Among the Tools** tells you how to move information and pictures among the three AtariWorks tools. It also explains how to move charts from the Spreadsheet into the Word Processor.

• **Merging: Creating Mailing Labels, Form Letters, and Forms** shows you how to use the Database to create form letters and mailing labels, to address envelopes, and to fill in forms you create in the Word Processor.

A Note About Memory Usage

Copying information among tools is subject to available memory, particularly if you are copying large selections. When you copy information to the Clipboard and paste the Clipboard's contents, you paste a *copy* of the Clipboard's contents, increasing memory usage by the amount you copy.

The procedures in this section discuss moving information in terms of copying from one tool to another. You can also move information by cutting it out of a document. This process works exactly the same as copying, except that the information is deleted from the original document. If this is what you want, substitute the **Cut** command for the **Copy** command in any of these procedures.

MOVING INFORMATION AMONG THE TOOLS

This section explains how to move information among the AtariWorks tools. You'll learn how to:

- Copy information to the Word Processor

- Copy Word Processor information to the Database or Spreadsheet

- Copy Database information to the Spreadsheet

- Copy Spreadsheet information to the Database

- Add finishing touches and edit pictures

Copying Information Among Tools

Copying information among the AtariWorks tools is easy. Just open the documents you need; the rest is as simple as pointing and clicking. Select the information, copy it to the Clipboard, and paste it at its destination.

You can copy information from open documents only. Depending on document size and available memory, you can have up to seven document windows open at a time. This makes integrating your information that much easier.

To copy information among the tools:

1.   Make sure that the file from which you want to copy is open.

2.   If necessary, activate the document you want to copy from by choosing its name from the **Window** menu or clicking on the particular window.

3. Select (highlight) the information you want to copy:

Works File Edit Window Select Format Options Chart

| A1 | ◊ " | | | SALES SUMMARY, 1993 | (00 | ◊ |

D:\A_WORKS\SAMPLE.STS (SS) (Saved)

	A	B	C	D	E	⇧
1		SALES SUMMARY, 1993 (000 omitted)				
2						
3		1Q	2Q	3Q	4Q	
4	Domestic	$2346.00	$3076.00	$2879.00	$1986.00	
5	Foreign	$1142.00	$1816.00	$1686.00	$1223.00	
6	-----	-----	-----	-----	-----	
7	Total Sales	$3488.00	$4892.00	$4565.00	$3209.00	
8						
9	Cost of Sales	$2120.00	$2761.00	$2466.00	$1850.00	
10	Cost as % of Sales	60.78	56.44	54.02	57.65	
11						

4. Choose **Copy** from the **Edit** menu.

5. Open the file you want to paste into:

Works File Edit Window Search Format Style

D:\A_WORKS\SALES_93.STW (WP) (Not Saved)

```
DATE:     2/29/93
FROM:     Ron
TO:       Bob
SUBJ:     Preliminary Sales Report

          Here's the first cut at the year's sales by quarter:
```

6a. To copy into the Word Processor, position the insertion point in a blank line or select the text that you want to paste over (scroll if

necessary). If you select text, AtariWorks replaces it with the contents of the Clipboard:

```
 Works  File  Edit  Window  Search  Format  Style
┌─────────────────────────────────────────────────────────────────┐
│▓         D:\A_WORKS\SALES_93.STW (WP) (Not Saved)              ▓│
├─────────────────────────────────────────────────────────────────┤
│ 1 Pₚ ▆▆▆▆ ▆▆▆▆ 1½2 ▆↓↓↓ Fₛₛ ▆B𝐼𝑈O Sᵛ S₆  𝕀 ╱ ─            ⇧│
│  1......|2......|3......|4......|5......|6......|7......           │
│1 DATE:      2/29/93                                              │
│  FROM:      Ron                                                  │
│  TO:        Bob                                                  │
│  SUBJ:      Preliminary Sales Report                            │
│                                                                  │
│      Here's the first cut at the year's sales by quarter:      │
│                                                                  │
│                  SALES SUMMARY, 1993  (000 omitted)            │
│                                                                  │
│                    1Q         2Q         3Q         4Q         │
│       Domestic     $2346.00   $3076.00   $2879.00   $1986.00   │
│       Foreign      $1142.00   $1816.00   $1686.00   $1223.00   │
│       ------------------------------------------------------   │
│                                                                  │
│       Total Sales  $3488.00   $4892.00   $4565.00   $3209.00  ◊│
│◊                                                              ◊ ▮│
└─────────────────────────────────────────────────────────────────┘
```
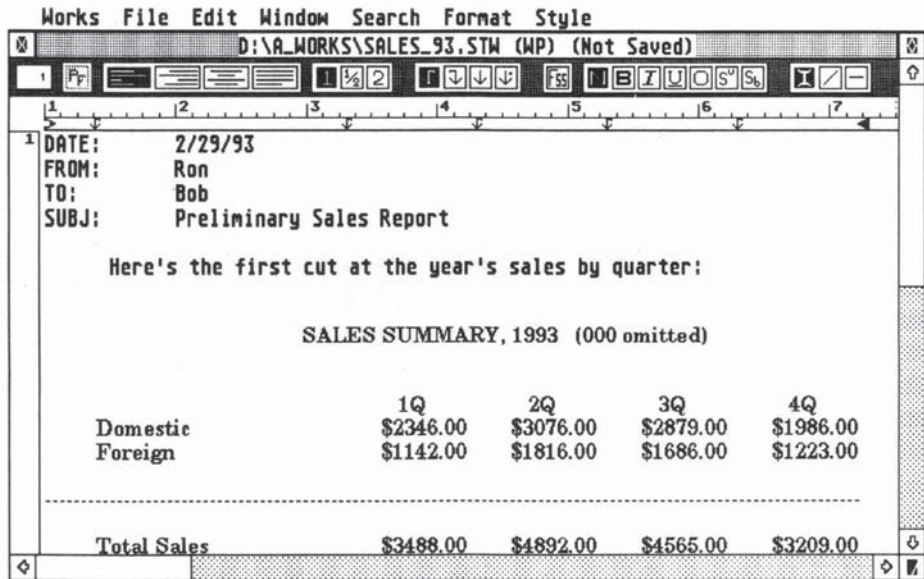
6b. To copy into the Database or Spreadsheet, select the entry or cell at the upper-left corner of the area you want to paste into. You can also select a range of entries or cells as the paste area:

```
 Works  File  Edit  Window  Select  Format  Control
┌──────────┬───┬──────────────────────────────────────────────┬──┐
│    1     │ ◊ │                                              │ ◊│
├──────────┴───┴──────────────────────────────────────────────┴──┤
│▓                  Untitled (DB) (Not Saved)                   ▓│
├──────────┬──────────┬──────────┬──────────┬──────────┬─────────┤
│ item     │ first 0  │ second 0 │ third 0  │ fourth 0 │        ⇧│
├──────────┼──────────┼──────────┼──────────┼──────────┼─────────┤
│▐▐▐▐▐▐▐▐▐▐│..........│..........│..........│..........│         │
├──────────┼──────────┼──────────┼──────────┼──────────┼─────────┤
│          │..........│..........│..........│..........│         │
└──────────┴──────────┴──────────┴──────────┴──────────┴─────────┘
```
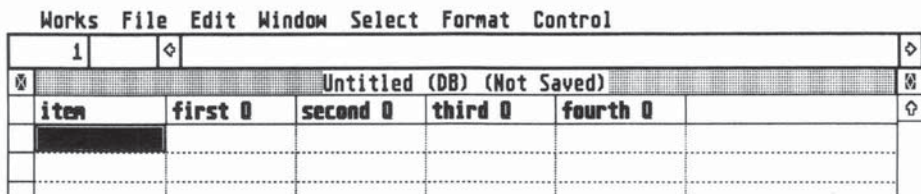
7.   Choose **Paste** from the **Edit** menu. AtariWorks pastes the copied information:

```
Works  File  Edit  Window  Select  Format  Control
  1│      │◊│                                 SALES SUMMARY, 1993    (000│◊
☒▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓Untitled (DB) (Not Saved)▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓☒
  item                first 0    second 0   third 0    fourth 0              ⇧
  ██████████████████
                      10         20         30         40
  Domestic            $2346.00   $3076.00   $2879.00   $1986.00
  Foreign             $1142.00   $1816.00   $1686.00   $1223.00
  ------------------
  Total Sales         $3488.00   $4892.00   $4565.00   $3209.00

  Cost of Sales       $2120.00   $2761.00   $2466.00   $1850.00
  Cost as % of Sales  60.78      56.44      54.02      57.65
```

As long as the information remains on the Clipboard, you can paste the information as many times as you want. For example, to use the same chart at the beginning of each section of a document, you can copy it once from the Spreadsheet, then scroll through your document, pasting a copy of it each time you come to a new section.

Copying Information to the Word Processor

When you select information to copy to the Word Processor, you need to consider how it will look in a Word Processor document. Your selection may be longer than a single page, or wider than a standard page. AtariWorks divides selections longer than a page into page-sized pieces for the Word Processor. If Database records or Spreadsheet rows are wider than a Word Processor page, AtariWorks formats your information to fit while you paste it in.

You can copy information from one Word Processor document to another. Just use the general procedure described above. Notice that if you position the insertion point in a blank line, AtariWorks automatically opens up enough space to paste the entire contents of the Clipboard.

Before you copy a chart to the Word Processor, you should insert enough blank space for the chart, and the surrounding white space that gets copied with it, by inserting return characters. Otherwise, the chart will be pasted over existing text.

Note: If you do paste the chart over text, you'll see the chart overlaid on the text. Position the insertion point at the beginning of the first line of the covered text, and press [Return] repeatedly until the text scrolls out from under the chart. Alternatively, you can move the chart. If you want to indent the chart from the left margin, press the [Tab] key or space bar to position the insertion point where you want it. AtariWorks pastes the chart below and to the right of the insertion point. Once the chart is pasted into the Word Processor, you can treat the chart as a picture. For more information, see **Editing Pictures** later in this section.

Copying Spreadsheet Information to the Word Processor

When you copy Spreadsheet information to the Word Processor, each column arrives separated by a tab character. Each row ends with a return character. If the rows are wider than the Word Processor page, AtariWorks formats the information while you paste it in.

Spreadsheet information is always pasted in the font style and size used by the Spreadsheet, but you can change the font and type size once the information is in the Word Processor.

When you copy Spreadsheet numbers or formulas to the Word Processor, AtariWorks pastes them as text. The relationship among the cells in the Spreadsheet no longer exists. For example, if you change a number in a column copied to the WordProcessor, the total for that column will not change. You need to select the total as text and change it by using the standard Word Processor editing techniques.

You may want to adjust tab stops to change the appearance of the columns. For more information, see the section on **Setting and Using Tabs** in the **Word Processor** chapter.

Copying Database Information to the Word Processor

When you copy records from the Database, each field arrives separated by a tab character. Each record follows on its own line, ending with a return character. Records that are wider than the Word Processor page can be selected and formatted to fit after you paste.

Database information is always pasted in the font style and size used by the database, but you can change the font or type size once the information is in the Word Processor.

Copying Information to the Database or the Spreadsheet

AtariWorks copies information to the Database and Spreadsheet in the same way. Each entry or cell contents ends with a tab character to indicate the end of a field or column, and each record or row ends with a return character. This section explains how to copy information to these tools, using spaces, tab characters, and/or return characters to keep the information in its characteristic columns and rows.

Copying Information from the Word Processor

You may have information in a word processor document that you want to copy to the Database or Spreadsheet. You can copy the information as you normally would, but you need to tell AtariWorks how to distinguish between fields and records or columns and rows. Each piece of information that will go into a field or cell should be separated from the next piece by a tab character. Each record or row should end with a return character. Any blank lines become blank records or rows.

To copy Word Processor information to the Database or Spreadsheet:

1.   In the Word Processor, insert tab characters between text that you want to appear in separate fields or columns.

Let's review the kinds of tabs that can be used and how they're created:

• Click on the Ruler for a left tab stop.

• Press and hold the [Control] key and click on the Ruler for a Right tab stop.

• Press and hold the [Shift] key and click on the Ruler for a Center tab stop.

• Press and hold [Shift] and [Control] together and click for a Decimal tab stop.

2.   Insert return characters to start new records or rows.

3.   In the Word Processor document, select the text that you want to copy.

4.   Choose **Copy** from the **Edit** menu.

5.   Activate the Database or Spreadsheet document.

6.   Activate the entry or cell in the upper-left corner of the area you want to paste into. Since the information fills fields and cells to the right, and records and rows downward, make sure that the records or cells in this area are blank.

7.   Choose **Paste** from the **Edit** menu, or use the keyboard equivalent, [Control]-V. AtariWorks pastes the copied information.

Copying Database Information to the Spreadsheet

When you copy Database information to the Spreadsheet, each entry becomes one cell in the Spreadsheet, each record becomes part of a row, and each field becomes part of a column.

To copy information from the Database to the Spreadsheet:

1.   Select the information in a Database list window. You can select

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individual or adjacent records, fields, or field entries.

2.   Choose **Copy** from the **Edit** menu.

3.   Activate the Spreadsheet window.

4.   Activate the cell in the upper-left corner of the area you want to paste into. Since the information fills cells to the right and rows downward, make sure that the cells in this area are blank or make new blank cells to accommodate the pasted information. If you want to copy over existing cells, you can.

5.   Choose **Paste** from the **Edit** menu. AtariWorks pastes the selected information into the Spreadsheet.

Text becomes Spreadsheet labels, and numbers become Spreadsheet values. AtariWorks copies the field names as labels in one row, with each record in a separate row. The information is displayed in the existing cell format.

Copying Spreadsheet Information to the Database

When you copy Spreadsheet information to the Database, each Spreadsheet column becomes a database field. Each spreadsheet row or portion of a row you copy becomes a database record. If you paste a spreadsheet column below an existing field, or a spreadsheet row to the right of an existing record, the new and existing information combine to make one field or one record.

In the Database, you'll need to set up enough fields to accommodate all the columns you're copying from the Spreadsheet. The columns that don't fit won't be pasted into the Database.

To copy information from the Spreadsheet to the Database:

1.   Select the information in the Spreadsheet. You can select a single cell, a block of cells, or entire rows or columns.

2.   Choose **Copy** from the **Edit** menu.

3. Activate the Database window.

4. Activate the entry in the upper-left corner of the area you want to paste into.

5. Choose **Paste** from the **Edit** menu. AtariWorks pastes the selected cells into the database document. Each cell becomes a database entry.

Adding Finishing Touches

Once you've moved information from one tool to another, you can modify it as you would any information in that tool. Since the Word Processor gives you the most options for formatting, this section gives you some ideas on how you can enhance the appearance of information you've integrated in a Word Processor document.

Formatting Text

Here are some ideas for changing the appearance of the overall document:

• Change the font, type size, or type style of the entire document or portions of it.

• If you've copied a large amount of information, you may wish to repaginate by inserting manual page breaks.

• Move the tab stops to adjust columnar tables.

• Change the line spacing or indent certain pieces of information for emphasis.

• Add headers and footers using the range of options available in the Word Processor.

• Use the **Draw** command to add lines, boxes, or circles to separate and draw attention to important information.

Editing Pictures

A picture can be a chart or table from the Spreadsheet, or lines and shapes from the Word Processor, or imported GEM Metafiles. When you add a picture to a Word Processing document, you can still work with it in the following ways:

- Add text for titles and labels.

- Add lines from the labels to the picture.

- Draw additional lines or shapes with the **Draw** command.

- Change the proportions to make the picture wider or taller.

- Delete pictures.

- Change the font face of the text in a GEM Metafile.

For more information on using the Word Processor's drawing capability, see **Formatting a Document** in the **Word Processor** chapter.

Selecting and Sizing a Picture

Once you've copied a picture into a word processor document, you may find that it's not in the right place, it doesn't quite fit, or it would look better in a different size. In order to manipulate a picture in the Word Processor, you first must select it. After you've selected a picture, you can change its size, or copy, move, or delete it.

To select a picture:

1. Choose **Select Picture** from the **Edit** menu, or use the keyboard equivalent [Control]-Z. The cursor must be on the same line as the picture.

2. Click on or to the left of the picture. The entire picture is highlighted (reversed in color from the color of the main text area). The picture remains selected until you click elsewhere.

Remember, text that you type with the Word Processor is not part of a picture and can't be selected while a picture is selected. You can, however, select both text and a picture by choosing **Select All**, or using the keyboard equivalent [Control]-A. If you're not satisfied with the change, you can choose **Undo** from the **Edit** menu (or press the [Undo] key) and try again.

To move a picture with Cut or Copy:

1.   Select the picture.

2.   Choose **Cut** or **Copy** from the **Edit** menu (or use keyboard equivalents), position the insertion point, and paste it at the new location.

Adding and Removing Text with Pictures

You can type text directly over a picture in a word processor document or in any area around it. You can add special labels to a graph, add a large title to a chart for a presentation, or call out special points using lines and text.

To add text to a picture:

1.   Position the insertion point where you want to type on the picture. (Unless you want to begin typing at the left margin, you'll need to use the space bar or the [Tab] key to reach the location you want.)

2.   Start typing.

Text that crosses a line or dark area of a picture may be difficult to read. Experiment with different type styles such as Outline until you get the desired effect. Text typed over a picture in the Word Processor is the same as text you type anywhere else. Standard AtariWorks editing commands work normally.

To remove text from a picture:

1.   Select the text.

2.   Choose **Cut** or **Clear** from the **Edit** menu.

MERGING:
CREATING MAILING LABELS, FORM LETTERS, AND FORMS

The Word Processor and the Database work together to let you combine information from a Database document into a form you create in a Word Processor document. With this merge capability, you can create form letters, address mailing labels and envelopes, and print on preprinted continuous forms. By using the Word Processor's drawing and formatting capabilities, you can design an attractive form that AtariWorks fills out for you automatically.

This section begins with an overview of the merge procedure, followed by several examples of how to use merging in your work. You'll learn how to:

- Create a merge document using the Word Processor and Database

- Print a series of customized documents

- Create mailing labels

- Create a form letter

- Fill out forms--those you design yourself using the Word Processor and preprinted forms

Creating a Merge Document

A merge document looks like any other Word Processor document, except that it contains placeholders instead of regular text. A placeholder contains the name of a Database document and a field name.

To create a merge document, you add information from a Database document to a Word Processor document. First, you indicate where you want information to go by inserting placeholders into your Word Processor document with the **Begin Merge** command. Then you use the **Mail Merge** command to print customized copies of the Word Processor document.

For each entry in a Database field you specify, AtariWorks prints one Word

Processor document, replacing the placeholder with an entry from the specified field. Thus, each record in the Database document produces one customized Word Processor document. The general procedure for creating a merge document and printing the customized copies is summarized below. Specific examples follow on how to use merging to create mailing labels, form letters, and customized forms. The Database document must be a file that has been previously saved.

To Create a Merge Document:

1.   Create a Database document with the information you need, or open an existing Database file. You can have more than one Database document open from which to merge.

2.   Create a new Word Processor document, or open an existing Word Processor file.

3.   In the Word Processor document, type any text that will remain the same for all the copies.

4.   Position the insertion point where you want to insert the first placeholder.

5.   Choose **Begin Merge** from the **Edit** menu.

6.   A dialog box opens with the active Database documents and fields listed; choose the Database document you want.

7.   AtariWorks will now list the fields from the selected database document.

8.   Choose the field you want to merge. AtariWorks inserts a place holder, containing the name of the Database document and the specified field name, at the insertion point in the Word Processor document.

Note: AtariWorks does not wordwrap a placeholder to the next line if the placeholder will not fit. To check, choose **Show Data** from the **Edit** menu.

9. After you insert each placeholder, you can add any appropriate spacing or punctuation around it before inserting another.

10. Repeat steps 4 through 9 for each piece of Database information you want to include in your Word Processor document.

To View Merge Information

Any time you want to view Database information as it will look in your finished document, choose **Show Data** from the **Edit** menu.

AtariWorks displays information from the first record in the specified Database document if no record is selected, or from the currently selected record. You can change the information displayed by activating the Database document and selecting another record. When you activate the Word Processor document again, you will see information displayed from the newly selected record.

Choose **Show Data** to see the placeholders again. If you close a specified Database document, or if you open the Word Processor merge document before you have opened a specified Database document, you'll see the message DATABASE NOT ON DESKTOP in the appropriate placeholder. You need to open the Database document in order to print or see information displayed from the records. If you delete a specified field or change a specified field name in a Database document, you'll see the message FIELD NOT IN DATABASE in the appropriate placeholder.

To delete a placeholder:

1. Select the placeholder as you would any text.

2. Press the [Backspace] or[Delete] key, or use the **Cut** or **Clear** command from the **Edit** menu. The placeholder disappears.

To change the font or style of a placeholder

1. Select the placeholder as you would any text.

2.   Choose commands from the **Font** or **Style** menu or use the appropriate Tool Bar icons. The information in the placeholder changes to reflect your choices.

Printing Merge Documents

You use the **Print Merge** command to print your merge documents.

To prepare for printing:

1.   In the specified Database document(s), sort the records to arrange them in the order you want them to print.

2.   If you want to print only a subset of the records in the Database, use the **Record Selection** or **Match Records** command from the **Select** menu to select the records you want to print.

3.   Activate the Word Processor merge document, and choose **Page Setup...** from the **File** menu and make any wanted changes.

4.   Set the Header/Footer strings if desired by choosing the **Header/Footer...** command from the **Edit** menu.

5.   Prepare your printer for printing, adding any special forms or paper.

To print your customized documents:

1.   Choose **Print Merge...** from the **File** menu. You'll get the same dialog box as for normal printing.

2.   Click any appropriate options, then click the **OK** button. AtariWorks will begin to print the customized documents.

Note: If you choose **Print** instead of **Print Merge...**, AtariWorks prints one copy of the Word Processor merge document with the placeholders rather than the Database information. If you choose **Show Field Data** and then choose **Print**, AtariWorks prints one copy of the document with the data from the first record or the selected record.

Creating Mailing Labels

To create mailing labels, you change options in the Page Setup... dialog box to correspond to the measurements of your mailing label, then create a merge document in the Word Processor containing only placeholders. You can save the document to use whenever you want to print mailing labels.

To change options with Page Setup:

1.   Create a new Word Processor document.

2.   Choose **Page Setup...** from the **File** menu.

3.   If necessary, choose the paper size and margins appropriate to your label.

4.   Select **Label Specifications**. A dialog box appears showing different parameters needed for the label specifications.

a. Set **Enable Label Printing**.

b. Enter the number of labels in a row and a column on the paper.

c. Select **Print Grid** if you want a grid to be printed around the labels.

d. Select **Show Label No.** if you want label numbers to show in the grid on your screen.

5.   Click the **OK** button.

A grid will appear on the screen showing the different labels as they will print. Except for the first label in the top left, all others are grayed out. The information contained in this box will be printed on each label with the information from the database(s) used.

Next, you will need to set up the merge document. To review this procedure, see **Creating a Merge Document** earlier in this section. The steps to follow include:

1.   Open the Database file you want to use for the mailing labels.

2.   Activate the Word Processor merge document and design your mailing label by choosing the font, type size, and type style you want from the **Font** and **Style** menus.

3.   Choose **Begin Merge** from the **Edit** menu to insert the placeholders. Arrange the placeholders as you normally would a name and address-- usually with the name on the first line, street address on the second, and city, state, and zip on the third.

To see how the actual information looks, and to adjust the alignment, if necessary, choose **Show Field Data** from the **Edit** menu.

To print the labels:

1.   Choose **Print Merge...** from the **File** menu. AtariWorks will display the regular Print dialog box.

2.   Click the **OK** button.

You may need to experiment with label alignment. Test your alignment with a few records first. Adjust the horizontal alignment of the labels in the printer until you are satisfied.

You can use this same method to create other label-like documents. Here are a few suggestions:

• Address envelopes.

• Print continuous index cards to catalog your tape or compact disc collection.

• Print membership cards for a club.

Creating a Form Letter

A form letter contains some standard text, but also adds information

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specific to each recipient. Names and addresses are the most common types of information you would want to merge into a form letter. But you can also create a Database document with specific phrases or sentences that apply to individual recipients.

For example, if you sell bicycles to bike shops, you might want to thank each shop individually for its order, mentioning the amount the shop purchased.

To set up a form letter, you create a merge document by typing all the text that will remain the same in each letter, and inserting placeholders for the information that will vary. If you need to review this procedure, follow the instructions in **Creating a Merge Document** earlier in this section.

Creating and Filling Out Forms

Nearly any office or business uses a variety of forms:

- Expense reports

- Address lists of customers, clients, friends, and contacts

- Invoices and statements

You can set up a form in the Word Processor as though you were preparing a document for an individual client. By merging with the Database, you can set it up once, and have AtariWorks fill it out whenever you need it. Your entire form can come from your Word Processor document, or you can design a layout that prints information on a preprinted continuous form.

By creating your form in the Word Processor, you'll have flexibility with alignment, positioning, fonts, type sizes, type styles, and shapes and lines from the Draw feature. Use **Page Setup...** from the **File** menu and **Draw Pattern...** from the **Edit** menu, or use drawing tools found on the Tool Bar. Use the type options available to you from the **Style** and **Font** menus or appropriate icons on the Tool Bar.

To set up a form that you can later complete during a print merge:

1.   Open or create the Database document that contains your information.

2.   Create a new Word Processor document and design your form. Type any standard text.

3.   When you are satisfied with your form, add placeholders and complete your merge document.

Note: If you need to review this procedure, see **Creating a Merge Document** earlier in this section.

Using Preprinted Forms

If you decide to use preprinted continuous forms, measure one of the forms and include the measurements in the Page Setup... dialog box. If you need to review this procedure, see **Creating Mailing Labels** earlier in this section. Using preprinted forms will take some experimentation to get precise alignment. But once the merge document is set up, you can save it and use it over and over again to print that form.

Appendix A

SPREADSHEET FUNCTIONS

AtariWorks has 53 built-in functions that you can paste or type into formulas. As explained in Chapter 5, a function is similar to an arithmetic operator, such as + or -, in that it produces a new value from other values, called *arguments.* This section describes all of the functions AtariWorks makes available in its Spreadsheet. It is divided into two parts:

• A discussion of the arguments expected by AtariWorks functions.

• A detailed listing of the available spreadsheet functions arranged by subject category, in alphabetical order.

ARGUMENTS TO FUNCTIONS

General

A function can have no arguments or it can have one or more arguments. Arguments can be numbers, formulas, cell references,or range references. Arguments can also be other functions that relate to a number.

An empty cell, or a cell containing text, is normally treated as 0 (zero) when used as an argument to a function. However, the functions **Average, Count, Max, Min, StDev, Sum, and Var** ignore such cells completely.

In AtariWorks, all function arguments have a numeric value. In some cases, however, these values represent a logical value of either TRUE or FALSE. The first argument in the **If** function is an example. For such arguments, the number 0 (zero) represents the logical value FALSE, and all other numbers represent the logical value TRUE. Similarly, all functions in AtariWorks return numeric values as results. In some cases, however, these returned values

represent a logical value or either TRUE or FALSE. The **IsNA** function is an example. As the result of such functions, the number 0 (zero) represents the logical value FALSE; and the number 1 represents the logical value TRUE. For example, IsNA(A1) equals 1, where A1 contains N/A, and IsNA(A1) equals 0 where A1 contains a label or a number, or it is blank. The **And, Or,** and **Not** functions are examples of these types of functions in that their arguments, as well as their results, are logical values represented by numbers.

For example:

Not(1) equals 0
And(-1,2,4) equals 1
Not(2) equals 0
And(-1,2,0) equals 0
Not(0) equals 1
Or(0,0,5) equals 1

Notation Conventions

In the function directory that follows, arguments are described with this notation:

Value or number Refers to an argument that must be a number, cell reference, or formula, as in Min(2,3), Min(A1,B1), or Min(3+A1,Sqrt(4))

Range Refers to an argument that must be a range reference, such as B9:F9

Values Refers to an argument that can be any of the above.

To distinguish different arguments in a function, numbers are added to the standard notation, as in value-1, value-2, range-1, range-2, values-1, values-2, and so on. When there is a useful descriptive word for an argument, such as "rate" in a financial function, that word is used in place of the generic term "value." Sometimes, the standard notation is modified by another word, as in lookup-number or compare-range.

DIRECTORY OF FUNCTIONS

The detailed directory of functions in this section is presented in alphabetical order grouped by subject category. Arguments to functions are provided in parentheses.

Financial Functions

FV(Rate , NPer , Pmt , PV , Type)

The **FV** function gives the future value of an investment involving constant cash flows. A more complete description is provided below under **Rate**. If you omit either *PV* or *type*, their values are assumed to be 0.

Use the following cash flow convention: represent cash received with a positive number, cash paid out with a negative number.

IRR(range , guess)

The **IRR** function gives the internal rate of return of a series of cash flows, represented by the numbers in *range*. The IRR is the interest rate that gives the series of cash flows a net present value of 0.

AtariWorks uses an iterative technique to compute IRR, which can have more than one solution. If the successive results of IRR do not converge after 20 iterations (repetitions), **IRR** gives the error value *Error*.

Range should be a reference that contains numbers. If *range* contains text or blank values, those values are ignored.

Guess specifies the starting value of the iteration. If **IRR** does not converge. Try different values for *guess*. Usually, a starting value between 0 and 1 will yield a meaningful result.

Example:

If you have an investment represented by the cash flows ($5000), $1000, $1500, $2000, ($3000), $2500, and $5000, which are entered in A1:A7, then:

IRR (A1:A7, 10%) equals 15.05%.

NPer(Rate , Pmt , PV , FV , Type)

The **NPer** function gives the number of periods of an investment involving constant cash flow. A more complete description is provided below under **Rate**. If you omit *FV* or *Type*, their values are assumed to be 0.

NPV(Rate , values-1, values-2,...)

The **NPV** function gives the net present value of a series of future cash flows, represented by the numbers in the list of values, discounted at a constant interest rate specified by *Rate*.

The cash flows are assumed to occur at equal intervals, the first cash flow occurring at the end of the first interval.

The list of values can contain one or more arguments. The *values* arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Pmt(Rate , Nper , PV , FV , Type)

The **Pmt** function gives the periodic payment of an investment involving constant cash flows. A more complete description is provided below under **Rate**. If you omit *FV* or *Type*, their values are assumed to be 0.

Use the following cash flow convention: represent cash received with a positive number, cash paid out with a negative number.

PV(Rate , NPer , Pmt , FV , Type)

The **PV** function give the present value of an investment involving constant cash flows. A more complete description is provided below under **Rate**. If you omit *FV* or *Type*, their values are assumed to be 0.

Use the following cash flow convention: represent cash received with a positive number, cash paid out with a negative number.

Rate(NPer , Pmt , PV , FV , Type , guess)

The **Rate** function gives the interest rate per period on an investment involving cash flows. **Rate** is one of five standard parameters in cash flow problems involving constant payments. The other four functions already have been briefly described: FV (future value), NPer (number of periods), Pmt (periodic payment), and PV (present value). The following discussion applies to all five functions when used together.

Rate and *Nper* must refer to the same period or interval. For example, if *Nper* is the number of months, then Rate must reflect the effective monthly interest rate.

Type indicates whether payments occur at the beginning or the end of the periods. If *Type* is 0, the first payment is assumed to occur at the end of the first period; if *Type* is 1, the first payment occurs at the beginning of the period. If you omit *Type* from your function formula, it is assumed to be 0.

For the arguments *PV, FV,* and *Pmt*, use the following cash flow convention: cash received is represented by a positive number; cash paid out is represented by a negative number. The examples below illustrate this convention.

AtariWorks uses an iterative technique to compute **Rate**, which can have zero, one, or two solutions. If the successive results of **Rate** do not converge after 20 iterations, **Rate** gives the error value *Error*.

Guess specifies the starting value of the iteration. If you omit *guess*, it is assumed to be 0.1 or 10%. If **Rate** does not converge, try different values for *guess*. Usually, a starting value between 0 and I will yield a meaningful result.

All of the arguments must be numbers. In **PV, FV, NPer,** and **Pmt,** you can omit the last two arguments, which will be assumed to be 0. In **Rate,** you can omit the last three arguments, which will be assumed to be 0, except for *guess,* as noted above.

AtariWorks uses the following equations to solve for one financial argument in terms of the others:

$$PV * (1+Rate) * NPer + Pmt * (1 + Rate * Type) (1 + Rate)$$
$$* NPer - 1 + FV = 0$$
(for Rate <> 0)

$$PV + Pmt * NPer + FV = 0$$
(for Rate = 0)

Examples:

(1) You have received a loan of $15,000 at an interest rate of 9% (monthly rate of 0.75%), and you must pay it off in 18 months, paid at the end of each month. PV is 15000, Rate is 0.75%, NPer is 18, and FV and Type are 0. The monthly payment is calculated by the following formula:

Pmt(0.0075 , 18 , 15000)

(2) A limited partnership plans to buy a commercial strip for $1,850,000 with expectation of selling the property for $2,250,000 in 6 years. The rent for the commercial units amounts to $475,000 annually. PV is -1850000, FV is 2250000, NPer is 6, Pmt is 475000, and Type is 0. The numbers $475,000; $1,850,000;and $2,250,000 are entered in cells A1, B2, and C3. If your guess at the annual rate of return is 10%, the actual annual rate of return is calculated using the following formula:

Rate(6 , A1-B2 , C3 , 0 , 0, 0.1).

---

(3) You presently have $3,200 in your savings account earning 6% annual interest (0.5% monthly interest, or 0.005 as Rate), and you plan to deposit $200 at the beginning of every month for the next 24 months. PV is 3200, Rate is 0.005, Pmt is -200, NPer is 24, and Type is 1. The amount of money your savings account will accumulate by the end of 24 months is calculated with the following formula:

FV(0.005, 24, 200, 3200 , 1).

Logical Functions

And(values-1 , values-2...)

The **And** function gives the value 1 (TRUE) if all the values in the list of arguments are non-zero (TRUE). If any of the values is 0 (FALSE), it gives the value 0 (FALSE).

If a reference argument contains text or blank values, those values are ignored.

Examples:

And(2+2=4,2+3=5) equals 1
And(2+2=5,2+3=5) equals 0

Choose(index , number-1 , number-2 ...)

The **Choose** function uses *index* to select a value from the following arguments in the list. If *index* is 1, **Choose** gives *number-1;* if *index* is 2, **Choose** gives *number-2;* and so on.

If *index* is less than 1 or greater than the number of the last value in the list, **Choose** gives the error value *Error*.

Examples:

Choose(2 , 10 , 20 , 30 , 40) equals 20

If cells are used to indicate values, the above function would read like this:

Choose(A3 , B7 , C7 , D7 , E7) equals B7

False( )

The **False** function takes no arguments and returns the value 0 (FALSE).

Example:

Choose(2 , False( ) , True( ) , True( ) , False( ) , True( )) equals 1

If(number , number-if true , number-if-false)

The **If** function gives *number-if-true* if *number* is non-zero (TRUE), and *number-if-false* if *number* is 0 (FALSE).

Example:

Given that A5 contains the number 98, and B10 contains the number 90:
If(Or(A5<80 , B10<75) , 1 , 0) equals 0

IsBlank(values-1 , values-2...)

The **IsBlank** function can have any number of arguments. All arguments must be cell references. **IsBlank** gives the value 1 (TRUE) if all cell references in the list of arguments are blank or contain text. Otherwise, it gives the value 0 (FALSE).

IsError(value)

The **IsError** function gives the value 1 (TRUE) if *value* is the error value
Error. Otherwise, it gives the value 0 (FALSE).

If you want to see if a range of cells contains any *Error* values, use the
Sum function to sum the range. If any cells contain *Error*, the result of the
Sum function will be *Error*.

Example:

Given that A1 contains the formula = 3/0:
If(IsError(A1), 0 , 1) equals 0

IsNA(value)

The **IsNa** function gives the value 1(TRUE) if *value* is the error value N/A.
Otherwise, it gives the value 0 (FALSE).

Example:

Given that A1 contains the formula = NA( ):
If(IsNA(A1) , 0 , 1) equals 0

Not(number)

The **Not** function gives the value 0 (FALSE) if *number* is non-zero
(TRUE), and gives 1 (TRUE) if number is 0 (FALSE).

Examples:

Not(1+1 = 2) equals 0
Not(1+1 = 3) equals 1

Or(values-1 , values-2...)

The **Or** function gives the value 1 (TRUE) if any of the *values* in the list of arguments is non-zero (TRUE). If all of the *values* are 0 (False), it gives the value 0 (FALSE).

If a reference argument contains text or blank values, those values are ignored.

Examples:

Or(1+1 = 2 , 2+2 = 5) equals 1
Or(1+1 = 3 , 2+2 = 5) equals 0

True( )

The True function takes no arguments and gives the value 1(TRUE).

Example:

Choose(2 , False( ) , True( ) , False( ) , True( )) equals 1

Mathematical Functions

Abs(number)

The **Abs** function gives the absolute value of *number.*

Examples:

Abs(2) equals 2
Abs(-2) equals 2

Exp(number)

The **Exp** function gives *e* raised to the power of *number.* The mathematical constant *e* is 2.7182818..., the base of the natural logarithm.
This function is the inverse of the **Ln** function (natural logarithm).
To calculate powers of other bases, use the exponentiation operator (^).

Examples:

Exp(1) equals 2.7182818 (the value of the natural base, *e*)
Exp(Ln(3)) equals 3

Int(number)

The **Int** function gives the largest integer less than or equal to number.

Examples:

Int(8.9) equals 8
Int(-8.9) equals -9

Ln(number)

The **Ln** function calculates the natural logarithm of *number.*

Natural logarithms use the mathematical constant *e*, 2.7182818.., as a base.

Number must be positive.

Ln is the inverse of the **Exp** function, *e* raised to the power *number.*

Examples:

Ln(2.7182818) equals 1
Ln(Exp(3)) equals 3

Ln(8) / Ln(2) equals 3 (the base 2 logarithm of 8)

Log10(number)

The **Log 10** function gives the base 10 logarithm of *number*.

Number must be positive.

Log10 is the inverse of base 10 exponentiation.

Examples:

Log10(10) equals 1
Log10(1E5) equals 5
Log10(10^5) equals 5
Log10(8) / Log10(2) equals 3 (the base 2 logarithm of 8)

Mod(number , divisor-number)

The **Mod** function give the remainder (modulus) after *number* is divided by *divisor-number*. The result has the same sign as *divisor-number*.

If *divisor-number* is 0, **Mod** gives the error value *Error*.

Examples:

Mod(3 , 2) equals Mod(-3 , 2) equals 1
Mod(3 , -2) equals Mod(-3 , -2) equals -1
Mod(7 , 4) equals 7-Int(7 /4)*4 equals 3

Pi( )

The **Pi** function takes no argument and gives the number 3.1459..., an approximation of the mathematical constant .

Example:

ATan(1) * 180 / Pi( ) equals 45 (degrees)

Rand( )

The **Rand** function gives a random number in the range 0 to 0.999... . It generates a new random number every time the spreadsheet document is recalculated.

Round(number , number-of-digits)

The **Round** function gives *number* rounded to *number-of-digits*. If *number-of-digits* is positive, *number* is rounded to that many decimal places. If *number-of-digits* is 0, *number* is rounded to the nearest integer. If *number-of-digits* is negative, *number* is rounded to the left of the decimal point.

Examples:

Round(2 . 15 , 1) equals 2.2
Round(2 . 149 , 1) equals 2.1
Round(-1 . 475 , 2) equals -1.48
Round(891 , -2) equals 900

Sign(number)

The **Sign** function gives 1 if *number* is positive, 0 if *number* is 0, and -1 if *number* is negative.

Examples:

Sign(7 + 3) equals 1
Sign(4 - 4) equals 0
Sign(3 - 7) equals -1

Sqrt(number)

The **Sqrt** function gives the positive square root of *number*.

Number must be greater than or equal to 0. If *number* is negative, **Sqrt** gives the error value *Error*.

Special-Purpose Functions

Error( )

The **Error** function takes no arguments and returns the value *Error*.

Example:

Given that A1 contains the formula = Error( ):
If(IsError(A1), 0 , 1) equals 0

HLookup(lookup-number , compare-range , index-number)

The **HLookup** function searches the first row of *compare-range* for the largest value that is less than or equal to *lookup-number*. Having found that value in some column of the first row, **HLookup** moves up or down in that column by an amount specified by *index-number* and gives the value found there. (*Index-number* can be any number; non-integers are rounded).

If *index-number* is 1, **HLookup** gives the value from the current row.
If *index-number* is 2, **HLookup** gives the value from the row below.
If *index-number* is 0, **HLookup** gives the value in the row above the current row.
If *index-number* is -1, **HLookup** gives the value in the row that is two rows above the current row.

The values in the first row of *compare-range* must be in ascending order. If *lookup-number* is smaller than the smallest value in the first row of *compare-range*, **HLookup** gives the error value *Error*.

Example:

If A1:E1 contains the values 10000, 20000, 30000, 40000, and 50000, and A5:E5 contains the values .01, .02, .03, .04, and .05, then:

HLookup(35000 , A1:E1 , 5) equals .03
HLookup(35000 , A1:E , 1) equals 30000
HLookup(5000 , A1:E1 , 5) equals *Error*
HLookup(.035 , A5:E5 , -3) equals 30000

Index(range , row , column)

The **Index** function gives the content of the indexed cell, selected by the indices *row* and *column*, starting from the cell in the upper-left corner of range.

Examples:

Index(B2:D4 , 2 , 3) equals the value of D3
Index(B2:D2 , 1 , 2) equals the value of C2
Index(B2:B4 , 2 , 1) equals the value of B3
Index(B2:D2 , 0 , 0) equals the value of A1
Index(C4:D4 , -1, -1) equals the value of A2

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Index(A1:A5 , 3 , 1) / 3 equals 3

Lookup(lookup-number , compare-range , result-range)

The **Lookup** function searches *compare-range* for the largest value that is less than or equal to *lookup-number*. **Lookup** gives the corresponding value in *result-range*.

The values in *compare-range* must be in ascending order. If *lookup-number* is smaller than the smallest value in *compare-range*, **Lookup** gives the error value *Error*. *Compare-range* and *result-range* should have the same length. Each of these range arguments must be one-dimensional, but they need not both be in the same direction.

Examples:

If A1:E1 contains the comparison values 10000, 20000, 30000,40000, and 50000, and A4:E4 contains the values 10, 20, 30, 40,and 50, then:

Lookup(35000 , A1:E1 , A4:E4) equals 30
Lookup(5000 , A1:E1 , A4:E4) equals *Error*
Lookup(35000 , A1:E1 , A1:E1) equals 30000

Match(lookup-number , compare-range , type)

The **Match** function gives the number of the comparison value in *compare-range* that matches *lookup-number*. If *lookup-number* matches the first comparison value, **Match** gives 1. If *lookup-number* matches the second comparison value, **Match** gives 2, and so on. If *lookup-number* does not match any of the comparison values, **Match** gives the error value *Error*. If *compare-range* contains multiple rows, **Match** searches from left to right, one row at a time; that is, it first searches the first row, then the second row, and so on.

The rules for matching the values are determined by *type:*

If *type* is 1, *lookup-number* matches the largest comparison value that is less than or equal to *lookup-number*. If *lookup-number* is less than the smallest comparison value, then it does not match any of them. The comparison values should be in ascending order.

If *type* is -1, *lookup-number* matches the smallest comparison value that is greater than or equal to *lookup-number*. If *lookup-number* is greater than the largest comparison value, it does not match any of them. The comparison values should be in descending order.

If *type* is 0, *lookup-number* matches the first comparison value that is equal to *lookup-number*. If *lookup-number* is not equal to any of the comparison values, then it does not match any of them. The comparison values can be in any order.

Examples:

If A1:A5 contains the numbers 60, 70, 80, 90, and 100, then:
Match(75 , A1:A5 , 1) equals 2
Match(55 , A1:A5 , 1) equals *Error*
If A1:A5 contains the numbers 100, 90, 80, 70 and 60, then:
Match(75 , A1:A5 , -1) equals 3
Match(105 , A1:A5 , -1) equals *Error*

If A1:C3 contains the numbers:
10 20 30
40 50 60
70 80 90 then:
Match(40 , A1:C3 , 0) equals 4

NA( )

The **NA** functions gives the error value N/A.

Example:

Given that A1 contains the formula = NA ( ):
If(NA(A1) , 0 , 1) equals 0

Type(value)

The **Type** function gives the type of *value*. If *value* is a cell reference and the cell referenced is blank or contains text, **Type** gives 2. Otherwise, **Type** gives 1 when *value* is a number, 8 when *value* is the error value N/A, and 16 when *value* is the error value *Error*.

Examples:

If A1 contains the text 'Smith', then:
Type(A1) equals 2
Type(5) equals 1
Type(1 / 0) equals 16

VLookup(lookup-number , compare-range , index-number)

The **VLookup** function is identical to **HLookup** except that it searches the first column (rather than row) of *compare-range,* and moves left or right in that row by an amount specified by *index-number.*

Statistical Functions

Average(values-1 , values-2.:.)

The **Average** function gives the average of the numbers in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
Average(A1:A5) equals 11
Average(A1:A5 , 5) equals 10
Average(A1:A5) equals Sum(A1:A5) / Count(A1:A5)

Count(values-1 , values-2...)

The **Count** function gives the count of the numbers in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
Count(A1:A5) equals 5.   Count(A1:A5 , 5) equals 6.

Max(values-1 , values-2...)

The **Max** function gives the largest number in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
Max(A1:A5) equals 27
Max(A1:A5 , 30) equals 30

Min(values-1 , values-2...)

The **Min** function gives the smallest number in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
Min(A1:A5) equals 2
Min(A1:A5 , 0) equals 0

StDev(values-1 , values-2...)

The **StDev** function gives the sample standard deviation of the numbers in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

The formula used is: Sqrt(Var(values-1 , values-2 , ...))

The sample standard deviation is the best estimate of the population standard deviation based in a sample of the population. If your sample represents the entire population, you can compute the true population standard deviation by including the average of the sample in the list of arguments to StDev:

StDev(Population, Average(Population))

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
StDev(A1:A5) equals 9.460
StDev(A1:A5 , Average(A1:A5)) equals 8.462

Sum(values-1 , values-2...)

The **Sum** function gives the sum of the numbers in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
Sum(A1:A5) equals 55
Sum(A1:A5 , 5) equals 60

Var(values-1 , values-2...)

The **Var** function gives the sample variance of the numbers in the list of arguments. The arguments should be numbers or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

The formula used is: $(n*(x2) - (x)2) / (n * (n-1))$.

The sample variance is the best estimate of the population variance based on a sample of the population. If your sample represents the entire population, you can compute the true population variance by including the average of the sample in the list of arguments to **Var.**

Var(Population , Average(Population))

Examples:

If A1:A5 contains the numbers 10, 7, 9, 27 and 2, then:
Var(A1:A5) equals 89.5
Var(A1:A5, Average(A1:A5)) equals 71.6

Trigonometric Functions

ACos(number)

The **Acos** function gives the arccosine of *number.* The arccosine is the angle in radians whose cosine is *number. Number* must be in the range -1 to 1. The angle will be in the range 0 to

Examples:

Acos(-0.5) equals 2.094 (2 /3 radians)
Acos(-0.5) * 180 / Pi( ) equals 120 (degrees)

ASin(number)

Ther **ASin** function gives the arcsine of *number.* The arcsine is the angle in radians whose sine is *number. Number* must be in the range -1 to 1. The angle will be in the range -( )/2 to ( )/2.

Examples:

ASin(-0.5) equals -0.524 (-( )/6 radians)

ASin(-0.5) * 180 / Pi( ) equals -30 (degrees)

ATan(number)

The **ATan** function gives the arctangent of *number*. The arctangent is the angle in radians whose tangent is *number*. The angle will be in the range - ( )/2 to ( )/2.

Examples:

ATan(1) equals 0.785 (/4 radians)
ATan(1) * 180 / Pi( ) equals 45 (degrees)

ATan2(x-number , y-number)

The **ATan2** function gives the arctangent of *x-number* and *y-number*. The arctangent is the angle in radians determined by the point whose *x* and *y* coordinates are *x-number* and *y-number*. The angle will be in the range - to , excluding . If both *x-number* and *y-number* are 0, **Atan2** gives the value 0.

Examples:

ATan2(1 , 1) equals 0.785 (/4 radians)
ATan2(-1 , -1) equals -2.356 (-3 /4 radians)
ATan2(-1 , -1) * 180 / Pi( ) equals - 135 (degrees)

Cos(number)

The **Cos** function gives the cosine of *number,* where *number* is an angle in radians.

Examples:

Cos(1.047) equals 0.5
Cos(60 * Pi( ) / 180) equals 0.5

Degrees(number)

The **Degrees** function converts an angle in radians to degrees.

Example:

Degrees(Pi( )) equals 180

Radians(number)

The **Radians** function converts an angle in degrees to radians.

Example:

Radians(180) equals 3.14159... (the value of   ).

Sin(number)

The **Sin** function gives the sine of *number,* where *number* is an angle in radians.

Examples:

Sin(0) equals 0
Sin(Pi( ) / 2) equals 1
Sin(3 * Pi( ) / 2) equals -1

Tan(number)

The **Tan** function gives the tangent of *number,* where *number* is an angle in radians.

Examples:

Tan(0.785) equals 0.990;   Tan(45 * Pi( ) / 180 equals 1