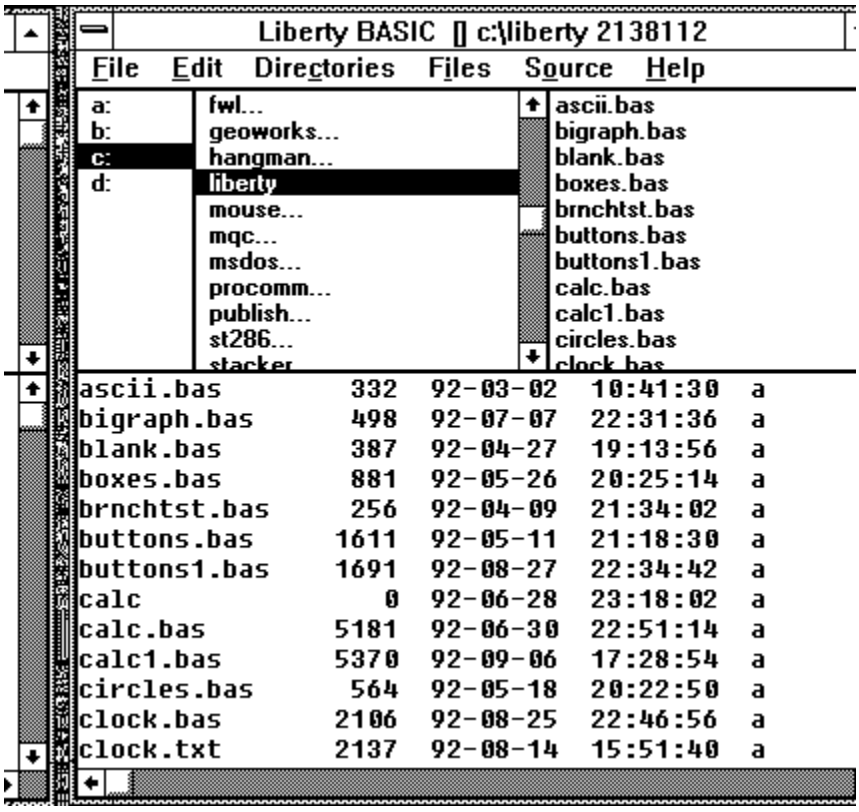
Overview of the Liberty BASIC Environment:

This chapter will introduce you to:

The Liberty BASIC browser ;
The Liberty BASIC Trace Window
BASIC editors

The Liberty BASIC browser

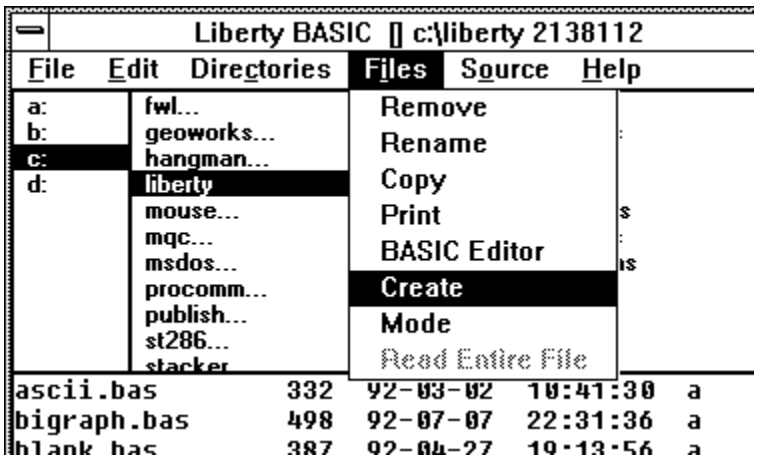
When you start Liberty BASIC, you get a window that looks like this:



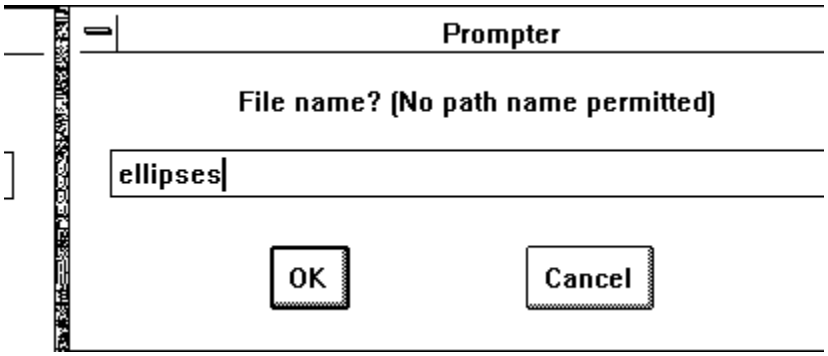
The window has four panes. Starting in the upper-left-hand corner, the first pane is where you select the disk drive on which your work is or will be stored. To its right is a pane where you select the directory where your work is. The next pane contains a list of ***.bas** files. The big pane comprising the lower half of the window is a source editor, which displays file details (see illustration above) until you select a file to edit.

Each of the panes in the browser has a pull-down menu. Each pull-down menu can also be popped-up. To pop up a menu, point into that pane with the mouse and press the right-hand mouse button once. We will use the pull-down menus for our examples here.

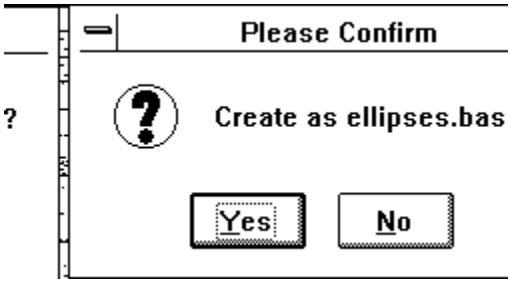
Let's begin by creating a BASIC program file. Pull down the **Files** menu and select **Create**.



You will be asked to type the name of your new BASIC program. Type **ellipses**, then strike return or click on **OK**.



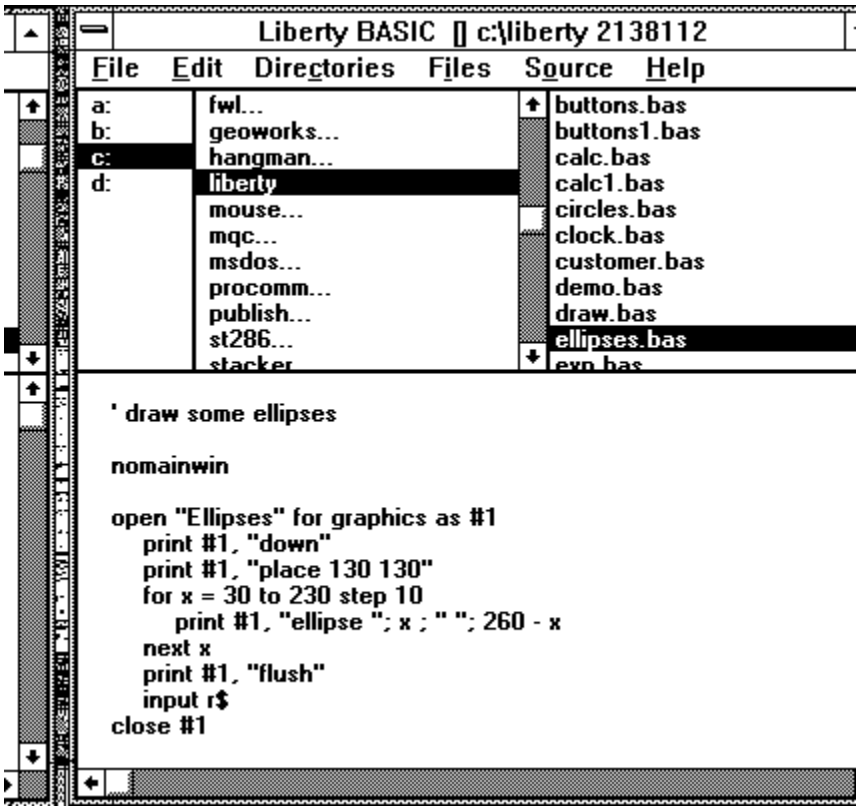
Then click on **Yes** or press Enter.



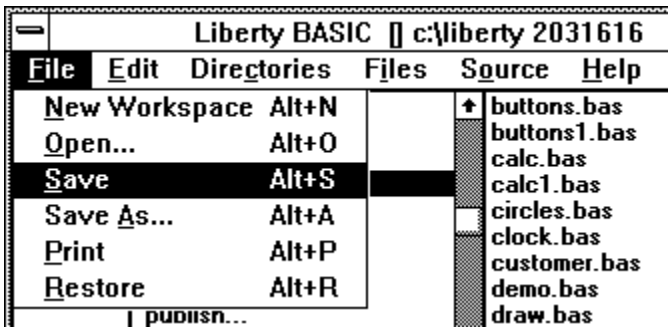
The file will be created, and you will be given an empty source editor pane.

Now type in the source code below, so that your window looks like the illustration.

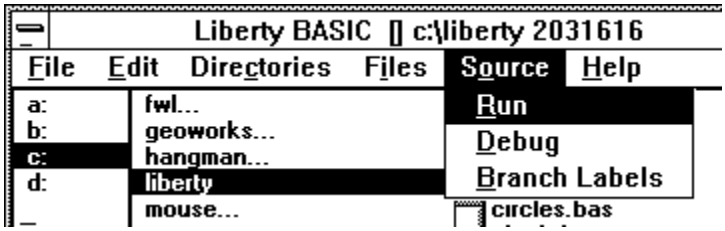
```
' draw some ellipses

nomainwin

open "Ellipses" for graphics as #1
   print #1, "down"
   print #1, "place 130 130"
   for x = 30 to 230 step 10
      print #1, "ellipse "; x ; " "; 260 - x
   next x
   print #1, "flush"
   input r$
close #1
```



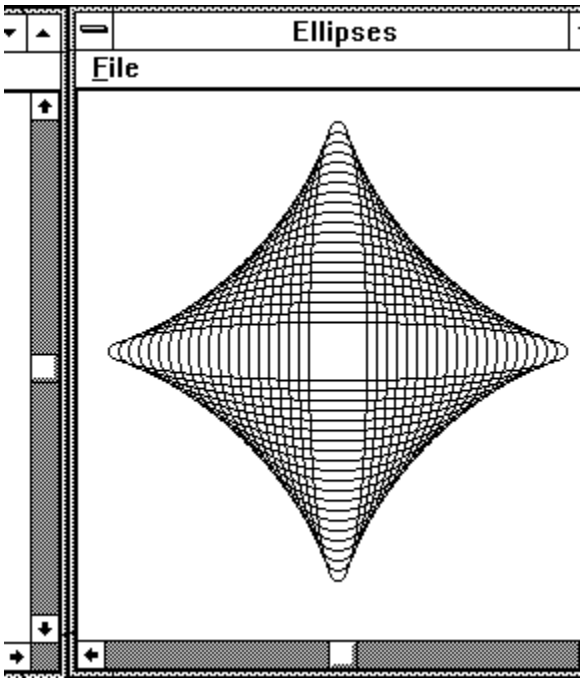
Now pull down the **File** menu and select **Save** and your program will be saved to disk.



Now let's run the program.



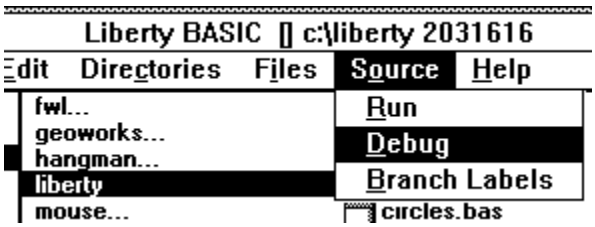
and we get:



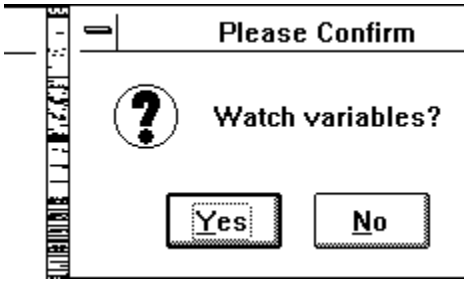
Now close the window.

Using the Debugger:

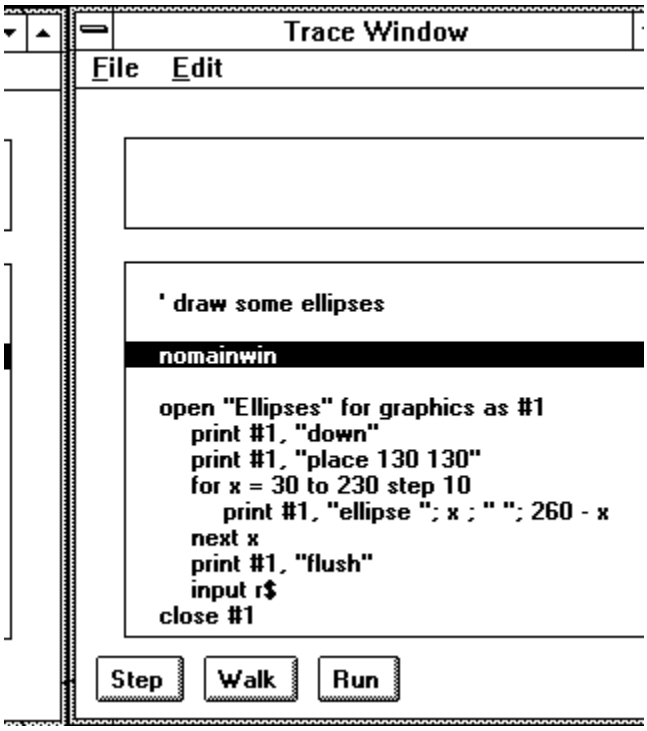
Let's take a closer look at how our **ellipses** program works using the debugger.
Pull down the **Source** menu and select **Debug**.



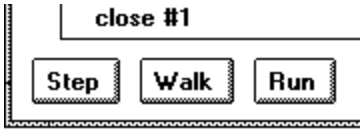
A dialog will appear asking if you want to watch variables. Respond by clicking on **Yes** or by pressing Enter.



A Trace Window will appear, and also another window labeled
Program named - 'ellipses.bas'



Select the Trace Window to bring it to the foreground and to make it the active window. Notice that it has two panes. The pane on the top shows variables as they change value. The pane on the bottom shows each line of code as it executes.

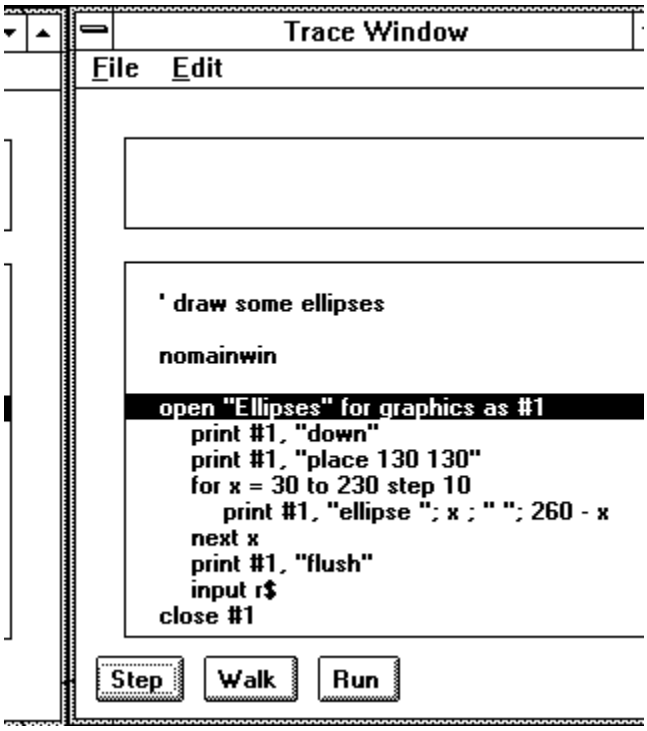


The three buttons on the bottom of the window let you pick three different modes of execution:

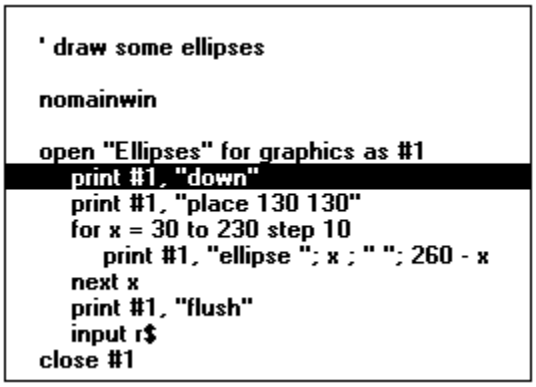
Step - Step one line at a time through program execution
Walk - Run the program non stop highlighting each line as it executes
Run - Run full speed. Do not highlight each line

Execution always begins in **Step** mode when the **Debug** option is used.

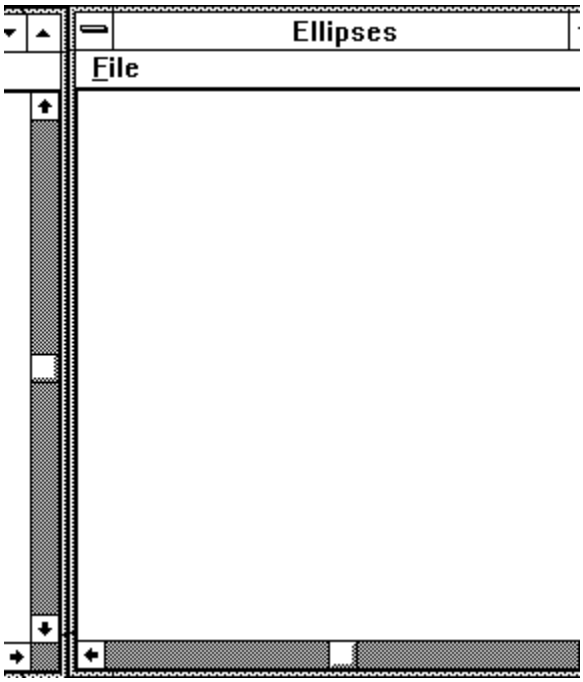
Now let's click on the **Step** button once. Your Trace Window should look like:



Now we see that the **nomainwin** statement has been executed. The **nomainwin** command does nothing in **Debug** mode, only in **Run** mode. See the text in chapter 3 on **NOMAINWIN**. When we click on **Step** again, the **open** statement will open a graphics window for us labeled **Ellipses**. Try it.



Now notice that the Trace Window now highlights the next line, and that a graphics window appears labeled **Ellipses**.

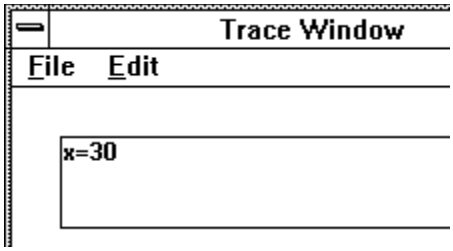


Now click on **Step** twice more. The two statements:

print #1, "down"
print #1, "place 130 130"

will be executed. You won't be able to immediately see the effect of these two statements. The first one tells the window's graphic pen to be 'lowered' to the surface of its 'paper'. The second statement places the pen at 130 in x and y.

Now click on **Step** again. Now look at the variables pane in the Trace Window.

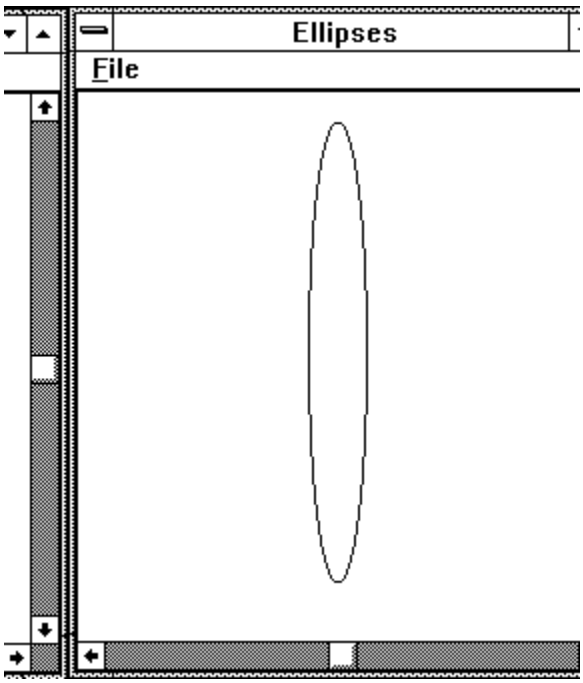


This shows that the variable **x** has been assigned the value 30. Each and every time that **x** (or any other variable), changes, we will be informed as to just what that change is.

Now click on **Step** again. The line:

print #1, "ellipse "; x ; " "; 260 - x

will be executed, and you will see this:

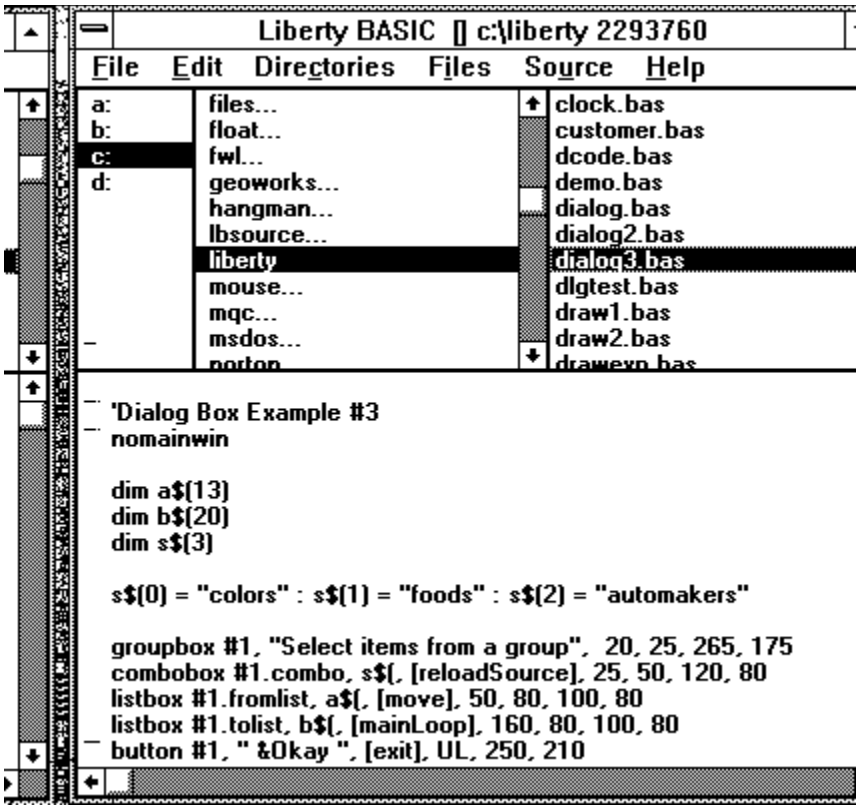


Now click on **Step** a dozen or so times, watching the value of **x** change and seeing several new ellipses drawn. Finally, click on **Walk** and the program will run non-stop, highlighting each line as it goes, and displaying each new value of **x**. When this is done, you may close the graphics window, the Trace Window, and the window labeled: **Program named: 'ellipses.bas'**.

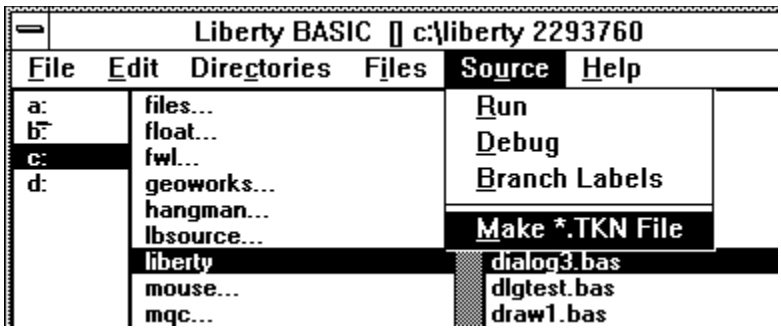
When you close this third window, Liberty BASIC will ask if you want to terminate **ellipses.bas**. Respond by pressing Enter or clicking on **Yes**.

Creating a tokenized file:

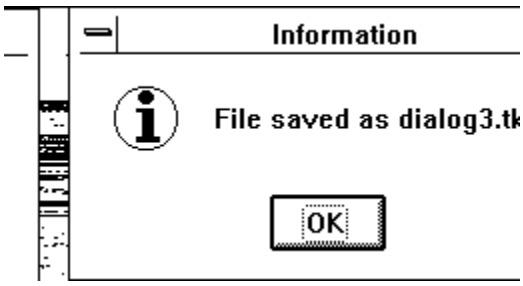
Liberty BASIC provides a facility that greatly speeds program loading. To do this, you must create a ***.TKN** file from your **.BAS** source file. This is a simple matter. We will tokenize the **dialog3.bas** source file as an example. Bring up the **dialog3.bas** file as shown here:



Now pull down the **Source** menu and select **Make *.TKN File**, like so:

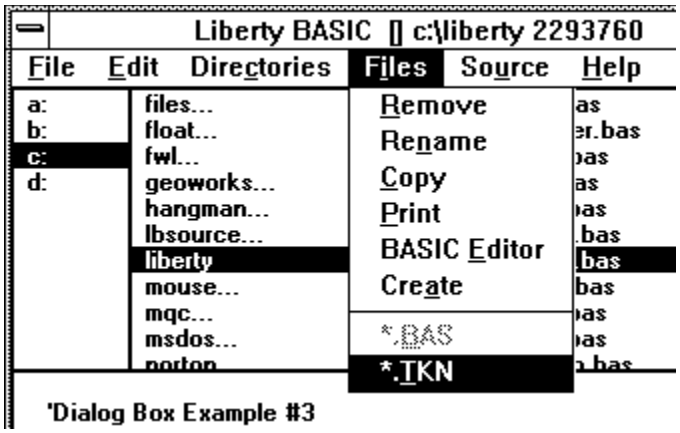


Liberty BASIC will compile **dialog3.bas** into a tokenized format and save it. When it is ready you will see:

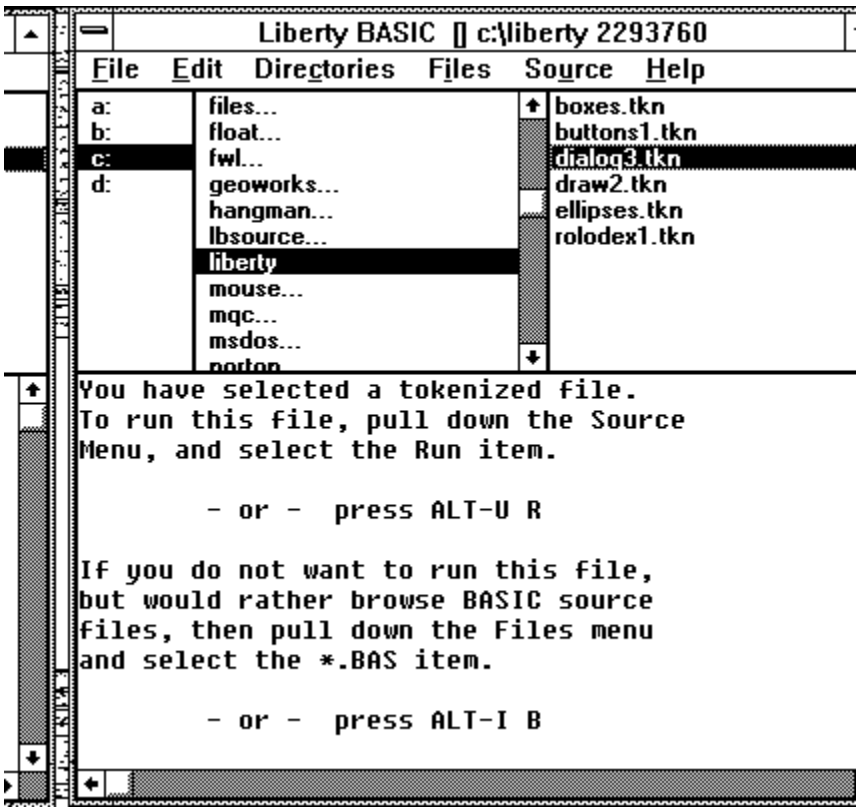


Clear the dialog box by pressing **Enter** or by clicking on **OK**.

Now we are ready to run the ***.TKN** file. Pull down the **Files** menu and select ***.TKN** as shown:



The list of ***.BAS** files will be replaced by a list of ***.TKN** files. Select the **dialog3.tkn** file as shown:



Now pull down the **Source** menu and select **Run**. Liberty BASIC will compile your program almost twice as quickly as when running from a ***.BAS** file. To see a list of ***.BAS** files again, pull down the **Files** menu and select ***.BAS**.

Shortcuts:

Here is a list of key combinations that activate useful features in Liberty BASIC:

Shift + Del	Cut
Ctrl + Ins	Copy
Shift + Ins	Paste
Clear	Del
Select All	Ctrl + A
Print Selection	Ctrl + P
Find/Replace	Ctrl + F
Find Again	Ctrl + G
Open Scratchpad	Alt + N
Open a File Editor	Alt + O
Save	Alt + S
Save As	Alt + A
Print	Alt + P

These features are also available in the **File** and **Edit** pull-down menus.