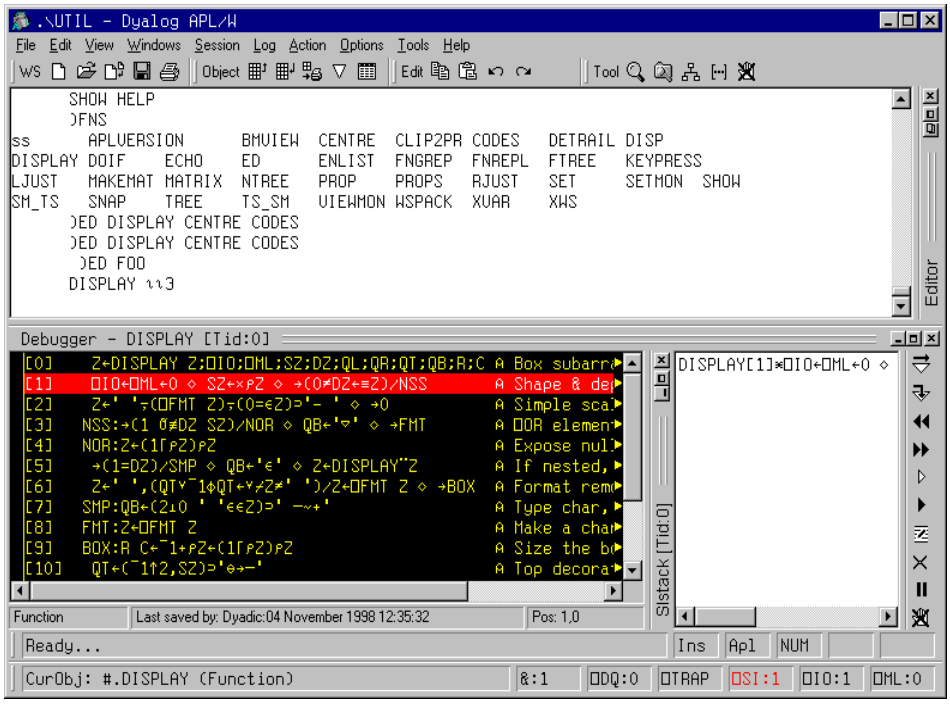
The Tracer

The Tracer is a visual debugging tool that provides a series of different window options. The Tracer may be a single dockable window that displays the function that is currently being executed, or it may have several windows, one for each function on the calling stack. The Tracer has a number of subsidiary windows which are also dockable; one displays the current SI stack; the other displays information about different threads. In addition, there is a separate dockable toolbar.

In the default Session, the SIstack window is docked along the right edge of the Tracer and the Trace Tools window is docked along the right edge of the SIstack. This arrangement is shown below.

The Tracer automatically springs up when you invoke it. The picture below shows what happens when you trace the *DISPLAY* function by pressing Ctrl+Enter.



While tracing, the current line, i.e. the next line due to be executed, is highlighted. Tracing can be controlled using the keyboard alone, or with the optional Trace Tools. If you click the execute button the current line is executed and the cursor moved to the next one. If instead you click the trace button, the line is executed, but any defined functions and operators used on the line are traced in turn. At any point, the execution stack is displayed as illustrated in the picture below.

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- The Development Environment
- Tracer

The Tracer

Other buttons allow you to move the point of execution forwards or backwards in the code, or to exit the current function which cuts back the stack to the calling environment. You can edit the current function, re-fix it and continue or you can open a window for any other object by simply double-clicking on a name. Not only is this useful for correcting your code as you go, but you can also use it to display a variable and watch it change. You can also skip back to the Session leaving the stack suspended (and visible) while you perhaps experiment with alternative expressions.

The Tracer can be invoked in a number of ways. To follow execution from the start, you can type an expression (or point at an existing expression in the session log) then press Ctrl+Enter or select Trace from the Action menu. The same actions will invoke the Tracer if you have a suspended function. Alternatively, you can set an option for the Tracer to be initiated when an error occurs.

You can set and clear breakpoints (indicated by a red circle) by clicking the mouse, in either Trace or Edit windows. When you are done debugging, you can click to continue execution with or without the Tracer enabled.

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