

## Chapter IV-7 — Programming Techniques

When a *macro* ends, the state of preferences reverts to what it was when that macro started. If you change the preference setting within a *function*, the preferences state does *not* revert when that function ends. You must turn preferences on, save the old preferences state, execute Igor operations, and then restore the preferences state. For example:

```
Function DisplayWithPreferences(w)
  Wave w

  Variable oldPrefState
  Preferences 1          // Turn preferences on
  oldPrefState = V_Flag   // Save the old state

  Display w              // Create graph using preferences

  Preferences oldPrefState // Restore old prefs state
End
```

## Experiment Initialization Procedures

When Igor loads an experiment, it checks to see if there are any commands in the procedure window before the first macro, function or menu declaration. If there are such commands Igor executes them. This provides a way for you to initialize things. These initialization commands can invoke procedures that are declared later in the procedure window.

Also see **BeforeFileOpenHook** on page IV-287 and **IgorStartOrNewHook** on page IV-292 for other initialization methods.

## Procedure Subtypes

A procedure subtype identifies the purpose for which a particular procedure is intended and the appropriate menu from which it can be chosen. For example, the Graph subtype puts a procedure in the Graph Macros submenu of the Windows menu.

```
Window Graph0() : Graph
  PauseUpdate; Silent 1      // building window...
  Display/W=(5,42,400,250) wave0,wave1,wave2
  <more commands>
End
```

When Igor automatically creates a procedure, for example when you close and save a graph, it uses the appropriate subtype. When you create a curve fitting function using the Curve Fitting dialog, the dialog automatically uses the FitFunc subtype. You usually don't need to use subtypes for procedures that you write.

This table shows the available subtypes and how they are used.

Subtype	Effect	Available for
Graph	Displayed in Graph Macros submenu.	Macros
GraphStyle	Displayed in Graph Macros submenu and in Style pop-up menu in New Graph dialog.	Macros
GraphMarquee	Displayed in graph marquee. This keyword is no longer recommended. See <b>Marquee Menu as Input Device</b> on page IV-163 for details.	Macros and functions
CursorStyle	Displayed in Style Function submenu of cursor pop-up menu in graph info pane.	Functions
DrawUserShape	Marks a function as suitable for drawing a user-defined drawing object. See <b>DrawUserShape</b> .	Functions
GridStyle	Displayed in Grid-Style submenu of mover pop-up menu in drawing tool palette.	Functions