

## Chapter IV-3 — User-Defined Functions

The name of a trace is, by default, the same as the name of the wave that it represents, but this is not always the case. For example, if you display the same wave twice in a given graph, the two trace names will be unique. Also, for programming convenience, an Igor programmer can create a trace whose name has no relation to the represented wave.

Trace names are used when changing traces in graphs, when accessing waves associated with traces in graphs, and when getting information about traces in graphs. See **Trace Names** on page II-282 for a general discussion.

These operations take trace name parameters:

**ModifyGraph (traces), ErrorBars, RemoveFromGraph, ReplaceWave, ReorderTraces, GraphWaveEdit**

**Tag, TextBox, Label, Legend**

These operations return trace names:

**GetLastUserInfo**

These functions take trace name parameters:

**GetUserData, TraceInfo, TraceNameToWaveRef, XWaveRefFromTrace**

These functions return trace names:

**TraceNameList, CsrInfo, CsrWave, TraceFromPixel**

### Trace Name Parameters

A trace name is not the same as a wave. An example may clarify this subtle point:

```
Function Test()
    Wave w = root:FolderA:wave0
    Display w
    ModifyGraph rgb(w) = (65535,0,0)           // WRONG
End
```

This is wrong because **ModifyGraph** is looking for the name of a trace in a graph and **w** is not the name of a trace in a graph. The name of the trace in this case is **wave0**. The function should be written like this:

```
Function Test()
    Wave w = root:FolderA:wave0
    Display w
    ModifyGraph rgb(wave0) = (65535,0,0)       // CORRECT
End
```

In the next example, the wave is passed to the function as a parameter so the name of the trace is not so obvious:

```
Function Test(w)
    Wave w
    Display w
    ModifyGraph rgb(w) = (65535,0,0)           // WRONG
End
```

This is wrong for the same reason as the first example: **w** is not the name of the trace. The function should be written like this:

```
Function Test(w)
    Wave w
    Display w

    String name = NameOfWave(w)
    ModifyGraph rgb($name) = (65535,0,0)       // CORRECT
End
```