



Advanced UFT 12 for Test Engineers Cookbook

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Implementing function pointers

What is a function pointer? A function pointer is a variable that stores the memory address of a block of code that is programmed to fulfill a specific function. Function pointers are useful to avoid complex switch-case structures. Instead, they support direct access in runtime to previously loaded functions or class methods. This enables the construction of callback functions. A callback is, in essence, an executable code that is passed as an argument to a function. This enables more generic coding, by having lower-level modules calling higher-level functions or subroutines.

This recipe will describe how to implement function pointers in VBScript, a scripting language that does not natively support the usage of pointers.

Getting ready

Create a new function library (for instance, `cls.FunctionPointers.vbs`) and associate it with your test.

How to do it...

1. Write the following code in the function library:

```
Class WebEditSet
    Public Default Function Run(ByVal obj, ByVal sText)
        On Error Resume Next
        Run = 1 'micFail (pessimistic initialization)
        Select Case True
            Case obj.Exists(0) And _
                  obj.GetROProperty("visible") And _
                  obj.GetROProperty("enabled")
                'Perform the set operation
                obj.Set(sText)
            Case Else
                Reporter.ReportEvent micWarning, TypeName(me), "Obj:
                Exit Function
        End Select

        If Err.Number = 0 Then
            Run = 0 'micPass
        End If
    End Function
End Class
```

2. Write the following code in **Action**:

```
Dim pFunctionion
Set pFunctionion = New WebEditSet
Reporter.ReportEvent pFunctionion(Browser("Google").Page("Google"))
```

How it works...

The `WebEditSet` class actually implements the command wrapper design pattern (refer also to the *Implementing a generic Login class* recipe). This recipe also demonstrates an alternative way of overriding any native UFT TO method without recurring to the `RegisterUserFunc` method.

First, we create an instance of the `WebEditSet` class and set the reference to our `pFunctionion` variable. Note that the `Run` method of `WebEditSet` is declared as a default function, so we can invoke its execution by merely referring to the object reference, as is done with the statement `pFunctionion` in the last line of code in the *How to do it...* section. This way, `pFunctionion` actually functions as if it were a function pointer. Let us take a close look at the following line of code, beginning with `Reporter.ReportEvent`:

```
Reporter.ReportEvent pFunc(Browser("Google"), Page("Google"), WebEdit("q"),
```



We call the `ReportEvent` method of `Reporter`, and as its first parameter, instead of a status constant such as `micPass` or `micFail`, we pass `pFunctionion` and the arguments accepted by the `Run` method (the target TO and its parameter, a string). This way of using the function pointer actually implements a kind of callback. The value returned by the `Run` method of `WebEditSet` will determine whether UFT will report a success or failure in regard to the `Set` operation. It will return through the call invoked by accessing the function pointer.

See also

The following articles are part of a wider collection at www.advancedqtp.com (<http://www.advancedqtp.com>), which also discusses function pointers in depth:

- An article by Meir Bar-Tal at <http://www.advancedqtp.com/function-pointers-in-vb-script-revised> (<http://www.advancedqtp.com/%20function-pointers-in-vb-script-revised>)
- An article by Meir Bar-Tal at <http://www.advancedqtp.com/using-to-custom-property-as-function-pointer> (<http://www.advancedqtp.com/using-to-custom-property-as-function-pointer>)



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