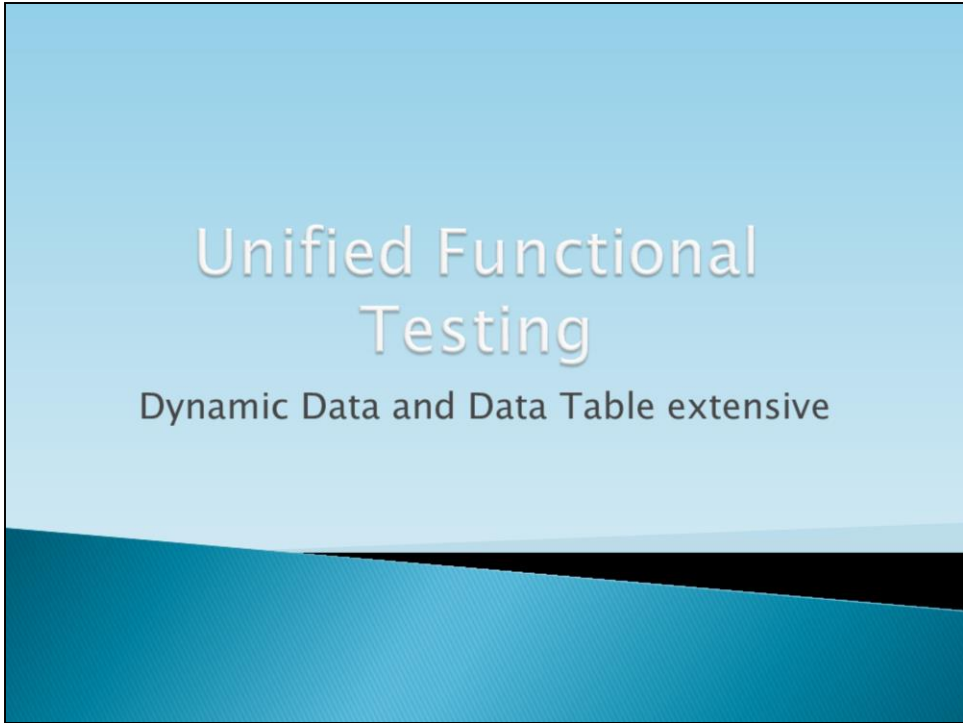


# Unified Functional Testing

Dynamic Data and Data Table extensive



# Lesson Objectives

By the end of this Lesson you will be able to:

- Retrieve data from application objects.
- Use the DATA TABLE object to store run-time data and drive actions.



# Topics

1. Retrieving data from complicated objects
2. DataTable object
3. ChildItem method



# Dynamic and Static Data

```

1  ' Static (Hard Coded Data)
2  WpfWindow("HP MyFlight Sample Application").WpfComboBox("fromCity").Select "Denver"
3  WpfWindow("HP MyFlight Sample Application").WpfComboBox("toCity").Select "Frankfurt"
4  WpfWindow("HP MyFlight Sample Application").WpfImage("WpfImage_3").Click 8,8
5  WpfWindow("HP MyFlight Sample Application").WpfCalendar("datePicker").SetDate CurrentDate
6  WpfWindow("HP MyFlight Sample Application").WpfComboBox("Class").Select "First"
7  WpfWindow("HP MyFlight Sample Application").WpfComboBox("numOfTickets").Select "2"
8  WpfWindow("HP MyFlight Sample Application").WpfButton("FIND FLIGHTS").Click
9  WpfWindow("HP MyFlight Sample Application").WpfTable("flightsDataGrid").SelectCell 2,1
10 WpfWindow("HP MyFlight Sample Application").WpfButton("SELECT FLIGHT").Click
11 WpfWindow("HP MyFlight Sample Application").WpfEdit("passengerName").Set "Gili"
12 WpfWindow("HP MyFlight Sample Application").WpfButton("ORDER").Click
13
14 ' Dynamic Data
15 WpfWindow("HP MyFlight Sample Application").WpfComboBox("fromCity").Select DataTable("From", dtGlobalSheet)
16 WpfWindow("HP MyFlight Sample Application").WpfComboBox("toCity").Select DataTable("To", dtGlobalSheet)
17 WpfWindow("HP MyFlight Sample Application").WpfImage("WpfImage_3").Click 8,8
18 WpfWindow("HP MyFlight Sample Application").WpfCalendar("datePicker").SetDate DataTable("Date", dtGlobalSheet)
19 WpfWindow("HP MyFlight Sample Application").WpfComboBox("Class").Select DataTable("Class", dtGlobalSheet)
20 WpfWindow("HP MyFlight Sample Application").WpfComboBox("numOfTickets").Select DataTable("Tickets", dtGlobalSheet)
21 WpfWindow("HP MyFlight Sample Application").WpfButton("FIND FLIGHTS").Click
22 WpfWindow("HP MyFlight Sample Application").WpfTable("flightsDataGrid").SelectCell 2,1
23 WpfWindow("HP MyFlight Sample Application").WpfButton("SELECT FLIGHT").Click
24 WpfWindow("HP MyFlight Sample Application").WpfEdit("passengerName").Set DataTable("Name", dtGlobalSheet)
25 WpfWindow("HP MyFlight Sample Application").WpfButton("ORDER").Click
  
```

Data																		
G1	From	To	Date	Class	Tickets	Name	G	H	I	J	K	L	M	N	O	P	Q	R
1	Denver	Frankfurt	3-May-2017	First	2 Gili													

UFT scripts can use data that is hard coded in the script or from external resource:

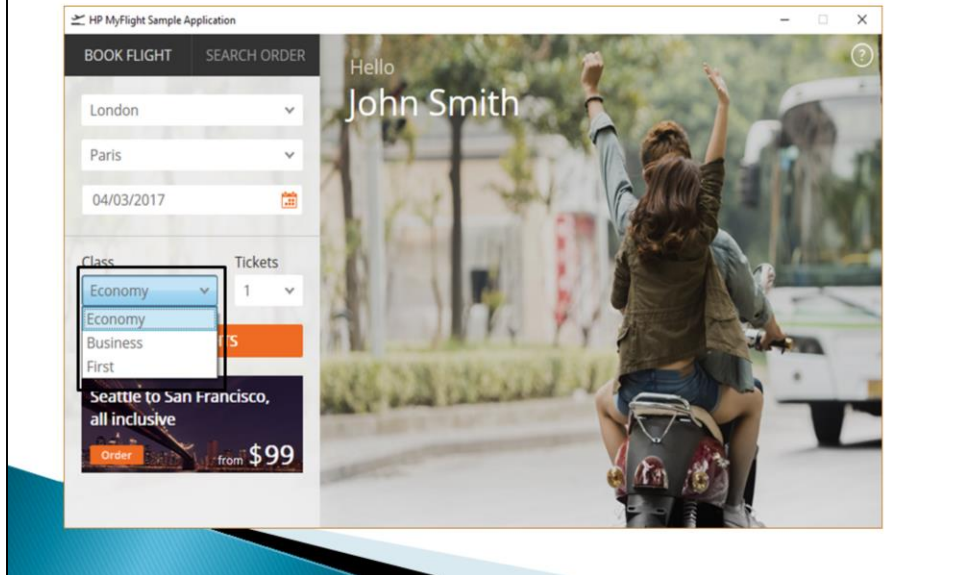
1. Dynamic Data- data from the run-time application or from an external source.
2. Static data - hard-code specific test values in script or in data sheets.

## Retrieving Data from Objects

- ▶ You can retrieve data directly from the objects in the application under test.
- ▶ The following are common Windows and Web objects that contain the data that you retrieve from a run-time application and use in a script:
  - WINCOMBOBOX
  - WINLIST
  - WEBLIST
  - WEBTABLE



# WpfCombobox Object

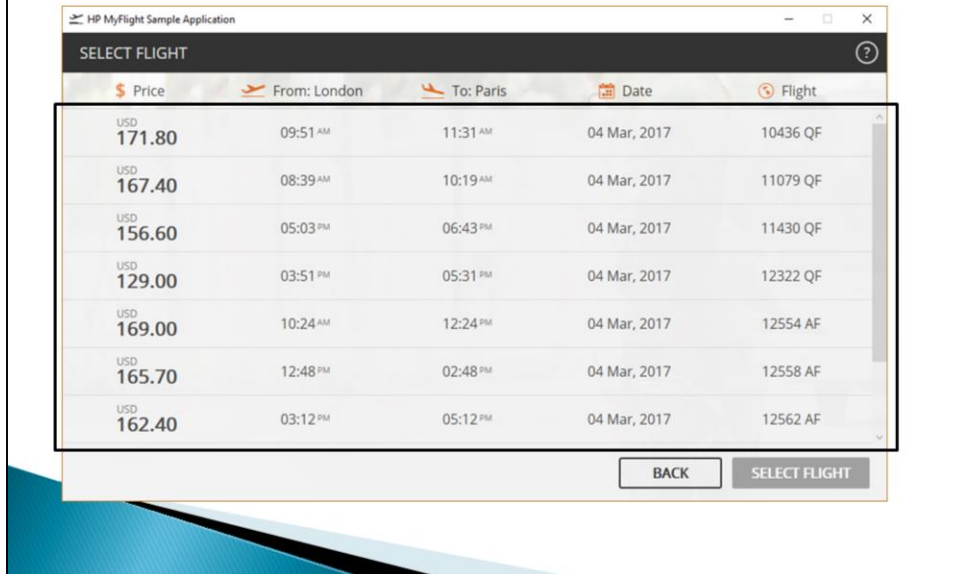


The **WPFCOMBOBOX** objects represent selection boxes in WPF Windows applications. You retrieve data from the WPFCOMBOBOX object by using the `GetItem`, `GetItemsCount` and `GetContent` methods.

Example:

```
NumberOfItems=WpfWindow("HP MyFlight Sample  
Application").WpfComboBox("Class").GetItemsCount
```

# WpfTable Object



The screenshot shows a WPF application window titled "HP MyFlight Sample Application". Inside, there's a "SELECT FLIGHT" window with a table of flight options. The table has five columns: Price, From, To, Date, and Flight. The data is as follows:

Price	From: London	To: Paris	Date	Flight
USD 171.80	09:51 AM	11:31 AM	04 Mar, 2017	10436 QF
USD 167.40	08:39 AM	10:19 AM	04 Mar, 2017	11079 QF
USD 156.60	05:03 PM	06:43 PM	04 Mar, 2017	11430 QF
USD 129.00	03:51 PM	05:31 PM	04 Mar, 2017	12322 QF
USD 169.00	10:24 AM	12:24 PM	04 Mar, 2017	12554 AF
USD 165.70	12:48 PM	02:48 PM	04 Mar, 2017	12558 AF
USD 162.40	03:12 PM	05:12 PM	04 Mar, 2017	12562 AF

At the bottom of the window, there are two buttons: "BACK" and "SELECT FLIGHT".

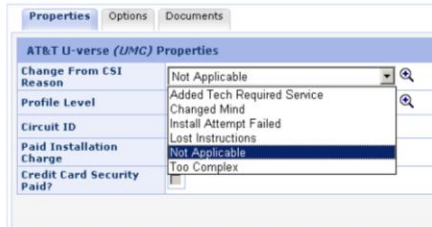
The **WPFTABLE** objects represent tables in WPF Windows applications.

You retrieve data from the WPFTABLE object by using the `GetCellData`, `RowCount` and `ColumnCount` methods.

Example:

```
CellValue = WpfWindow("HP MyFlight Sample Application").WpfTable("flightsDataGrid").GetCellData(1, 1)
```

# WebList Object



The WEBLIST object represents lists in Web applications.

You retrieve data from a WEBLIST object very much the same way as a WINLIST object. The WEBLIST object uses the GetItem method to retrieve data.

The WEBLIST object uses the GETROPROPERTY method to retrieve the items count.

*Example:*

```
NumberOfReasons=Browser("My Browser").Page("My Page").WebList("My WebList").GetROProperty("Items Count")
```

```
RandomIndex=RandomNumber(0,NumberOfItems-1)
```

```
Reason = Browser("My Browser").Page("My Page").WebList("My WebList").GetItem(RandomIndex)
```

```
Browser("My Browser").Page("My Page").WebList("My WebList").Select Reason
```



# WebTable Object



WEBSITE objects represent information tables in Web applications.

You retrieve data from a WEBSITE object by using the GetCellData, ColumnCount, and RowCount methods.

2 examples of pressing the "plus" image according to the component name:

*ChildItem Example:*

```
For i = 1 to Browser("My Browser").Page("My Page").WebTable("My WebTable").RowCount
    If Instr(Browser("My Browser").Page("My Page").WebTable("My WebTable").GetCellData(i, 2),
ComponentName) > 0 Then
        Browser("My Browser").Page("My Page").WebTable("My
WebTable").ChildItem(i, 1, "Image", 0).Click
    End If
Next
```

*SetTOPProperty Example:*

```
For i = 1 to Browser("My Browser").Page("My Page").WebTable("My WebTable").RowCount
    If Instr(Browser("My Browser").Page("My Page").WebTable("My WebTable").GetCellData(i, 2),
ComponentName) > 0 Then
        Browser("My Browser").Page("My
Page").Image("Plus").SetTOPProperty("index", i - 1)
        Browser("My Browser").Page("My Page").Image("Plus").Click
    End If
Next
```

## Populating a Data Table Dynamically

- Instead of hard-coding data in a data sheet before a run session, you can retrieve the data from an application at run-time and store it in the DATATABLE.

```
NumberOfItems=Window("Flight Reservation").WinComboBox("Fly From:").GetItemsCount  
RandomIndex=RandomNumber(0,NumberOfItems-1)  
DataTable.Value("From") = Window("Flight Reservation").WinComboBox("Fly From:").GetItem(RandomIndex)  
Window("Flight Reservation").WinComboBox("Fly From:").Select DataTable("From",dtGlobalSheet)
```



# Commonly Data Table Methods

- ▶ **GetSheet** – Returns the specified sheet from the run-time Data Table.
- ▶ **GetSheetCount** – Returns the total number of sheets in the run-time Data Table.

*'add a new column'*

```
DataTable.GetSheet("dtGlobalSheet").AddParameter "NewColumn","Row1Value"
```

*'delete the old column'*

```
DataTable.GetSheet("dtGlobalSheet").DeleteParameter("OldColumn")
```

```
SheetCount = DataTable.GetSheetCount
```

```
Reporter.ReportEvent 0, "Sheet number", "There are " & SheetCount & " sheets in the Data Table."
```

## Frequently Data Table Methods

- ▶ **GetRowCount**– Returns the specified sheet from the run-time Data Table.

```
RowCount = DataTable.GetSheet("MySheet").GetRowCount  
Reporter.ReportEvent 2, "There are " & RowCount, "rows in the data sheet."
```

- ▶ **Value** – Retrieve or assign data to a cell in a Data Table object.

```
OldVal=DataTable.Value("OldColumn","dtGlobalSheet")  
DataTable.Value("NewColumn","dtGlobalSheet")=OldVal
```

## What's Next?

- Review Questions
- Next Lesson
  - The next lesson in the course is:  
**External Data**



End of Lesson

