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## Automation Testing Tool HP (QTP 10) Certification

### Introduction

- About Test Automation
- Circumstances of Test Automation Be Used
- Circumstances Test Automation Be Avoided
- The Automated Testing Process
- HP Quick Test Professional (QTP) in brief

### QTP's Recording and Identification Logic

- Logic behind QTP's Recording Process
- Logic behind QTP's Identification and Replay Process
- How to use Identification Dialog box before start recording
- Normal Recording, LowLevel Recording & Analog Recording with live examples

#### Object Identification Configuration

- Normal Identification
- Mandatory Properties
- Assertive Properties
- Smart Identification
- Base filter Properties
- Option filter properties
- Ordinal Identifier
- Making Tool Settings Global

#### Virtual Object Configuration

- Virtual Object Manager
- Defining a Virtual Object
- Removing or Disabling Virtual Object Definitions

## Object Repository (OR)

- Why Object Repository necessary
- How Object Repository works
- Test and Run-time Objects with TO Properties
- Types of Object Repository
- Per-Action versus Shared Object Repository
- The Object Spy
- User-defined Objects
- Object Repository Shortcomings
- Adding Objects
- Renaming Objects
- Deleting Objects
- Associating Object Repositories to an Action
- Exporting Local Objects
- Merging Repositories

## Data Tables

- Design and run-time data table
- When to use the global or a local data table
- Setting data table iterations
- Data table object model
- DataTable Object's Methods and Properties by real time
- Data table formatting

## Actions

- Types of Actions
- Inserting Calls to Actions
- Insert Call to New...
- Insert Call to Existing...
- Insert Call to Copy...
- Creating an Action
- Splitting Actions
- Renaming an Action
- Deleting an Action
- Making an Reusable/Non-Reusable

- Calling an existing Action
- Copying an Actions
- Action Parameters

## QTP Environment Variables

- Types of Environment variables
- Environment Object
- Defining, modifying and associating environment variables
- Loading Environment file during run-time (dynamic handling)
- Environment Variable using (.ini Extension and .xml) through script and example

## Checkpoints

- Types of checkpoints with explanation on real-time scenarios
- Practicing different checkpoints on Live application
- Problems with QTP built-in checkpoints
- Alternatives to QTP checkpoints
- Updating Checkpoints at run-time

## Synchronization

- Synchronization Points
- 1st Method – Using the Sync method
- 2nd Method – Using the Wait statement
- 3rd Method – WaitProperty method
- Checking Object Existence
- Browser Vs Page Sync

## Debugging in QTP

- Establishing Debugging Configuration
- Using Breakpoints
- Working with the Watch Expression Tab
- Working with the Variables Tab
- Working with the Command Tab
- Uses of Step Into, Step Over, Step Out

## Recovery Scenarios

- What is recovery scenario?
- When or when not to use Recovery Scenarios?
- Situations in which a Recovery Scenario won't work
- Recovery Scenario for IE Authentication window
- Default Recovery Scenarios
- The Recovery object
- Recovery Function Calls
- Error Handling

## Parameterization

- Data Driven Testing through Loop statements
- Dynamic Test Data Submission through Looping
- Data Driven Testing through Data Table
- Importing Test Data from External files (Excel Files)
- 

## VBScript basics and advanced program

**VBScript Basics to Advanced usage:** - We know that in Manual testing profile most of the people don't have any use of scripting and programming language so they don't have any idea about VBScript. Good knowledge of VBScript can only help you to stand as a Automation Tester, So we will train you in VBScript from initial level to expert level without thinking about any time constraint because I know, when you will know the Basic Concepts and Practical usage of VBScript then Framework creation will become too easy for you in proper guidance (prior programming or scripting knowledge is not mandatory)

**Automation** of MS Excel, File System Object, Dictionary Object, Automation of DataBase using VBScript, Integrating and working with QTP and Quality Center - All with Practical examples and scripting with line by line explanation. These parts are well explained in our detailed syllabus attached with mail.

## VBScript

- What is VBScript and how to run VBScript?
- VBScript's Basic syntax with live example
- How to use and run If..Then Else, SelectCase, For Loop, Do While and Until , while wend conditional constructs on realtime scenarios by examples
- Working with Arrays , Fixed length arrays , Dynamic Arrays with examples
- Optional arguments in VBScript
- VBScript's Important frequently used Inbuilt functions and statements with examples and line by line code explanation with practice code to make trainees comfortable with VBScript

## VB Script Fundamentals & Features

- Scripting Languages vs. Programming Languages
- Basic Features of VBScript
- Hosting Environments & Script Engines
- Crating & Running a Script

## Data Types, Variables

- VBScript data types
- Declaring Variables and Option Explicit Statement
- Assigning Values to Variables
- Scalar Variables and Array Variables
- Dynamic Arrays, Dimensional Arrays

## VBScript Statements-

call, Dim Do Loop, Execute, Exit, If then Else, For Next,Set , While Wend, With, option explicit, On Error Resume Next, On Error Go To 0, Dim, Redim, Public, Select Case,Methods

## VBScript Functions

(is array, is numeric, is date, is empty, Now, Ltrim, Rtrim, Trim, Mid, Split, LBound, UBound, Lcase, Ucase, Array, Date, Instr,Cint, Cdbl, Cdate, Cstr, LBound, UBound, Cstr etc.

## VBScript Objects

- Err Objects with Methods and Properties

- Match Object with Methods and Properties
- Regular Expression Object with Methods and Properties

## Descriptive Programming

- Advantages of Descriptive Programming
- Static Programming
- Dynamic Programming
- Creating Library files using Constants /Collection objects
- Handling Dynamic Objects
- Handling duplicate Objects
- Retrieving Child Objects
- Regular Expressions
- Regular Expression Characters
- When to use Regular Expressions in QTP
- Testing a Regular Expression Using Code
- Using a Regular Expression to Identify a Dynamic Object
- Replacing Data from a String Using a Regular Expression
- Handling Dynamic Objects
- Using Regular Expressions in Checkpoints
- Defining Regular Expressions
- Search Operations
- Regular expressions in Recovery scenarios
- Regular Expression Object
- Dictionary Objects
- What is Dictionary Object and what is the need of Dictionary Object
- How to create and use Dictionary object
- What are the properties and methods of Dictionary Object with real-time scenarios and examples
- Difference between Dictionary object and an Array.

## Library Files

- Associating a Library globally with a Test
- Dynamically Loading libraries locally at run-time
- Dynamically Loading libraries globally at run-time
- Understanding Execution Scope
- Applicability of Option Explicit
- Executing code in Local scope from within Global Scope

## User Defined Functions

- Types of Procedures
- Internal & External Functions

- Creating Library files
- Creating Sub Procedures
- Creating Function Procedures
- Associating Library files
- Loading Function Libraries run-time
- Generic Functions
- Project Specific Functions

## QTP Automation Object Model

- QTP Automation Object Model (AOM)
- Passing arguments to Test Cases
- How to automate QTP at runtime dynamically by scripting
- How to set Per test settings at run time by scripting
- How to set Global Options at run time by scripting

## HTML DOM

- When to use the HTML DOM
- When not to use the HTML DOM
- HTML DOM Objects & HTML Node
- The Document Object
- The HTML Element Object & The HTML Element Collection
- Getting the Web page Element using the DOM

## Working with Web Tables

- Web Tables
- Accessing the WebTable
- Using OR and Descriptive Programming
- Using an object inside the table
- Getting the location of an object inside the table
- Clicking inside a WebTable
- Exporting WebTable to a DataTable
- Extending WebTable functionality by writing user defined functions
- Finding a cell in a Table

## Working with Databases

- Connecting to a Database
- Building Connection Strings
- Checking the State of a Connection or Recordset
- Exporting the Results of a Query to Data Table
- Executing a Stored DB procedure

## Working with Microsoft Excel

- The Excel Automation Object Model
- MS-Excel's objects and their Properties with main applicable methods
- Performance Enhancements
- How to use an excel sheet as a database in real time applications
- Create an Excel File
- Create an Excel file and enter some Data
- Read an Excel spread sheet
- Write data to an Excel spread sheet
- Add formatted data to a spread sheet
- Sort Excel worksheet
- Data Driven Testing by fetching Test data from an Excel file
- Compare Two Excel files
- Data driven Testing through Data Table methods

## Database Object Model

- ActiveX Data Objects
- ADODB Connection Object & Recordset Object
- Test Database Creation & Collecting Test Data
- Databases Connections (Ms-Access, SQL Server and Oracle)
- Data Driven Testing by fetching Data from a Database
- Data Comparisons

## Working with Microsoft Internet Explorer & Mozilla FireFox

- Launching Internet Explorer (IE)
- Page Synchronization
- Enumerating all IE Windows
- Launching a new browser
- Getting Web page DOM
- IE and Mozilla Popup Dialogs
- Handling popup dialog by using a code
- Checking for Broken images on a Web Page
- Using a Browser Object as a Window Object



## Working with HP Quality Center

- Quality Center
- Connecting QTP with QC
- QC Paths, Relative Paths in QC & Resolving Relative Paths
- QCUtil Object
- QC Open Test Architecture (OTA)
- The TDConnection Object
- The Command and Recordset Objects
- Simple way of Downloading files from QC
- Getting the Current Test Location
- Enumerating All Tests present in a Test Lab folder

## Automation Frameworks and Micro Programming with RealTime Implementation

**Automation Frameworks:** - the real experience in automation can be only justified by knowledge of different Automation Frameworks. But the knowledge should not be like knowing definitions and going through some PPTs and theoretical docs.

### Automation Framework Basics

- Modular Framework
- Data Driven Framework
- Keyword Driven Framework
- Hybrid Automation Framework

**Documentation Related to Automation Test Plan,** Automation Framework Design Diagram (Which is always skipped by learners but important to justify your experience in Automation)

Its a theoretical approach that there are 5 types of framework 1) Data Driven 2) Keyword Driven 3) Modular 4) Function Library 5) Hybrid Framework.

But the practical Approach is that All the 4 types are just the quality of Automation Frameworks and In Real Time Scenarios most of the time the Automation Framework is always Hybrid Automation Framework

because to fulfill our requirement regarding automation we have should try to get benefits of all the Automation Framework approaches. That's why we are explaining 2 Types of Hybrid Framework (requirement, situation and approach would not be different) and one Pure Keyword Driven Framework.

And our manner is mentioned below

- 1) Requirement and situation where it should be used for each type of Framework.
- 2) Designing the Framework in Classes from Scratch
- 3) Explanation of code line by line during classes and some.
- 4) We Would give you real time assignment that will make you expert in every Automation framework.
- 5) At Last would discuss about initiatives can be taken.
- 6) Technical Help during training and beyond training period to Implement the framework
- 7) Would provide all the scripts and code regarding All the Frameworks.

**MS Excel - Macro Programming:-** We can use macro programming which is based on VBScript. and not tough to learn after learning VBScript and MS Excel Automation Interface which will be covered after 10 Classes.

This will us to make Automation utilities which is being used frequently now in industry