



Software Testing Using QTP UFT Training Curriculum

STRUCTURE



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“Transform your Career with Quality Assurance Mobile Testing Training at TOPS”

Course Objectives:

- Learn software testing fundamentals, manual testing, database testing, and basic mobile testing concepts.
- Prepare yourself for ISTQB certification exam and clear it in first attempt.
- Project yourself as a skilled software tester and a knowledgeable quality expert.
- Understand the key issues in testing software applications.
- Learn how to design tests that adequately cover requirements and business events.
- Advance your career by reinforcing your testing expertise.
- Learn from an industry recognized expert in software testing and quality
- Start applying for jobs and get hired by top MNCs worldwide.

Course Description:

This course is designed for people seeking foundation level certification based on the ISTQB certification program and also interested in learning basic software testing fundamentals, manual testing concepts, database testing, mobile testing, live project training, etc. This course completely covers the current ISTQB syllabus and also provides additional information and guidance in key areas.

Our Software testing training program is suitable for testers, test analysts, test engineers, test consultants, test managers, user acceptance testers and software developers. This Foundation Level qualification is also appropriate for anyone who wants a basic understanding of software testing, such as project managers, quality managers, software development managers, business analysts, IT directors and management consultants.

Course Content:

Course 1. Software Testing

Module 1: Software Testing Fundamentals

- Introduction
 - What is Software Testing?
 - Why do we need Testing?
 - How to perform the Testing?
 - Benefits of Testing
- Software Testing Terminologies
 - Mistakes, Faults, Bugs & Failures
 - Priority & Severity
 - Debugging & Root Cause Analysis
 - Verification & Validation
 - Test Bed/Environment
 - Mock-ups
 - Test Scenario
- Quality Assurance & Quality Control
 - What is Quality Assurance?

- What is Quality Control?
- Quality Assurance vs Quality Control
- Software Testing as a Career
 - Best testing practices used in Software Industry
 - Software Tester Roles
 - Job Responsibilities of a Software Tester
 - Why choose Software Testing as a career?
 - How training can help you to become a Software Tester?

Module 2: SDLC vs STLC

- Requirement and Analysis
 - Requirement Gathering
 - SRS Creation
 - Feasibility Study
 - Requirement Validation
 - SRS Approval
 - Project Kick-off
 - Application Walkthrough
 - Requirement Analysis
- Design Concepts in Software Testing
 - System Design
 - Architecture Design
 - Module Design
- Coding/Development
- Testing
- Implementation/Live
- Software Testing Life Cycle (STLC)
 - Requirements analysis
 - Test planning
 - Test development
 - Test execution
 - Test reporting
 - Test result analysis or Defect Analysis
 - Retesting
 - Regression testing
 - Test Closure
- SDLC Vs STLC
 - What is The Difference?
 - Which is better? What to choose?

Module 3: Software Testing Models and Methodologies

- Software Testing Models
 - Waterfall Model
 - Iterative Model
 - Prototyping Model
 - Progressive Model

- Spiral Model
- V-Model
- RAD (Rapid Application Development)
- Agile Methodology?
 - What is Agile?
 - Why choose Agile Methodologies?
- Scrum Role in Agile
 - Product Owner
 - Scrum Master
 - Scrum Team
- Work Products
 - Product Backlog
 - Spring Backlog
 - Burndown Chart
- Ceremonies
 - Sprint Planning Meeting
 - Daily Scrum Call
 - The Sprint
 - Sprint Review
 - Sprint Retrospective
 - Scrum of Scrums
- Testing Methodologies
 - Black Box Testing
 - Boundary Value Analysis
 - White Box testing
 - Path Testing
 - Mutation Testing

Module 4: Testing Levels and Testing Types in Software Engineering

- Testing Levels
- Testing Types
- How to choose them?
- Signification of Different Testing Types
- Unit Testing
- Integration Testing
- Re Testing
- Regression Testing
- Usability Testing
- Performance Testing
- Software Stress Testing
- Security Testing
- Smoke Testing
- Compatibility Testing
- System Testing
- UAT (User Acceptance Testing)

- Alpha & Beta Testing

Module 5: Test Cases and Test Plans in Testing

- Test Cases
- Review Process
 - Peer Review
 - Walkthrough
 - Inspection
- Bug/Defect Management
 - Bug/Defect Lifecycle
 - Bug Tracking through Tool (Jira/Bugzilla)
- Test Plan
 - Introduction
 - Test Objective
 - Test Environment
- Scope of Testing
 - Modules to be Tested
 - Modules not to be Tested
 - Types of Testing
 - Levels of Testing
- Testing Schedule
 - Entry Criteria
 - Testing Flow
 - Test Deliverables
 - Defect Tracking
 - Task Management
 - Suspension/Resumption Criteria
 - Risk & Mitigation Plan
 - Completion/Exit Criteria
- Test Design Checklist
- Test Execution Checklist
- Cross Browser Testing

Module 6: Project Life Cycle Management/Live Project

- Introduction to Project Life Cycle
 - Identify Testing Artifacts
 - Test Strategy
 - Test plan
 - Software Test Life Cycle (STLC)
 - Prepare Test Case
 - Optimizing Test Cases (Testing Techniques)
 - Bug Reporting and Management
 - Application Sign Off
- Live Project
 - Requirement Analysis
 - Prepare Query Log

- Writing Test Cases
- Review of Test Cases
- Execution of Test Cases
- Bug Finding & Reporting
- ISO and CMMI Certifications, its significance

Module 7: ISTQB Certification

- Software Testing Fundamentals
 - Why is Testing Necessary
 - What is Testing?
 - Seven Testing Principles
 - The Psychology of Testing
 - Code of Ethics
- Testing Throughout the Software Life Cycle
 - Software Development Models
 - Test Levels
 - Test Types
 - Maintenance Testing
- Static Techniques
 - Static Techniques and the Test Process
 - Review Process
 - Static Analysis by Tools
- Test Design Techniques
 - The Test Development Process
 - Categories of Test Design Techniques
 - Specification-based or Black-box Techniques
 - Structure-based or White-box Techniques
 - Experience-based Techniques
 - Choosing Test Techniques
- Test Management
 - Test Organization
 - Test Planning and Estimation
 - Test Progress Monitoring and Control
 - Configuration Management
 - Risk and Testing
 - Incident Management
- Tool Support for Testing
 - Types of Test Tools
 - Effective Use of Tools: Potential Benefits and Risks
 - How to Introduce a tool into an Organization?

Module 8: Database Testing

- What is database testing?
- Database testing through SQL
- What is SQL?
- Basic SQL Queries

- Create SQL Queries
- Writing SQL Queries
- SQL Where Clause
- AND/OR clauses
- Order By/Update/Delete database
- Primary Key vs Foreign Key
- Joining Tables
- LEFT/RIGHT JOIN
- Joining more than two tables- complex queries
- Using Aggregation to determine data health
- Foreign Key Problems
- Using Sub-queries
- Generating Test Data
- Views and Indices

Module 9: Mobile Testing Basics

- Mobile Testing Introduction
 - Overview of Mobility Testing
 - Mobile Application Development Process
 - Introduction to various Mobile platforms
 - Introduction to Various Apps, Mobile App, Web based App, Native App, Hybrid App.
- Mobile Testing Strategy
 - Device Emulator
 - Mobile Cloud Computing (Remote Real Devices)
 - Real Time Devices
 - Automation Tools
 - Emulators and its usage
 - Installation and un- installation of Android Emulator
- Mobile Testing Approach
 - Mobility Application – Test Approach/Phases
 - Test Requirements
 - Test Planning
 - Test Environment setup
 - Test Design
 - Test Execution and Defect tracking
 - Test Reports and Acceptance
- Mobile Testing Scope
 - Unit testing
 - Integration testing
 - Functional testing
 - Device conformance testing
 - System testing
 - Regression testing
 - Mobile browser compatibility testing

- Performance testing

Course 2. HP-UFTv12.50 & HP-ALMv12.50

1. Overview of “Automation Testing”

- Introduction to Automation Testing Tool-UFT
- Automation Tool (UFT) Architecture
- Environment supported by UFT
- Test Automation Process and Methodology
- POC in Test Automation (Proof of Concept)
- UFT Performance Improvement Tips
- How to identify the Test Case for Automation
- Object Identification Issue with UFT
- Best Practice to implement Automation Process in Software Industry

2. Automation Basics

- Object
- Properties
- Method
- Introduction to Web Objects
- Introduction to Expert & Keyword View
- Record & Play
- Recording Mode (Normal | Analog | Low Level)
- Running Mode (Fast | Normal | Debug | Maintenance | Update Mode)
- Introduction to all UFT Tabs & Short Cut Keys

3. Object Repository

- Local Object Repository
- Shared Object Repository
- Object Repository Manager
- Merging Object Repository
- Compare Object Repository
- Associate different Repositories with Test
- Associating Object Repositories with an Action

4. Object Spy

- Test Object Properties & Methods
- GetROProperty & GetTOProperty
- Run Time Object Properties & Methods

5. VB Script Basics

- VB Script Data Types & Variables and Constants
- Programming Loops & Array (Static Array & Dynamic Array)
- VB Script Built-In Functions
- VB Script User Defined Functions, Procedures & Subroutines
- VB Script Objects
- VB Script Statements
- VB Script Fundamentals & Features

6. Parameterization

- Data Table
- Xls file using DataTable.Import
- Excel Object Model
- Environment Variables
- Random Number Generator
- Global Dictionary Objects

7. UFT Checkpoint

- UFT inbuilt Checkpoint
 - ✓ Standard Checkpoints
 - ✓ Text Checkpoints
 - ✓ Text Area Checkpoints
 - ✓ Bitmap Checkpoints
 - ✓ Database Checkpoints
 - ✓ Accessibility Checkpoints
 - ✓ Xml Checkpoints (Application Area)
 - ✓ Xml Checkpoints (Resource File)
- Custom Checkpoints

8. Function Libraries used in UFT

- vbs File
- qfl File
- txt File
- Associate Function Library : Using **AOM** (Automation Object Model)
- Associate Function Library : Using **ExecuteFile** Method
- Associate Function Library : Using **LoadFunctionLibrary** Method
- Associate Function Library : Using 'File > Settings > Resources > Associate Function Library' option from the Menu bar

9. Objects Identification Mechanism by UFT

10. Tune UFT to work with AUT (Application under Test)

11. Actions

- Create New Action
- Call to Existing Action
- Call to Copy Action
- Associate Action with Test on Run Time using LoadAndRunAction
- Split Action

12. Object Model

- Test Object Model (TOM)
- Automation Object Model (AOM)
- Component Object Model (COM)
- Document Object Model (DOM)

13. Advanced Concepts about Synchronization

- Exist

- Wait
- Sync
- WaitProperty
- Object.ReadyState

14. UFT Settings

- Action Level Setting
- Test Level Setting
- UFT Level Setting

15. Recovery Scenario & Error Handling

- UFT inbuilt Recovery Scenario Wizard
- If...Else loop
- Error Object
- On Error Resume Next

16. UFT & ALM Connectivity

17. FSO (File System Object)

- Working with files and folders
- Create, Open, Append and Delete

18. UFT Advance Topics

- Reporter Event
- Relative Path
- Open Application using UFT
- Close Application using UFT

➤ Descriptive Programming

- Using Real Objects Run Time Property (attribute/<propertyname>)
- Static DP
- Dynamic DP
- Hybrid DP

➤ Smart Identification Mechanism

➤ Debugging of UFT Script

- Watch.
- Variable.
- Command.

➤ Overview of Test Setting & Options Dialog Box

➤ Introduction to Reserved Objects provided by UFT to make the script more generic

➤ Advance Concept about Regular Expression

- **Handling of “Dynamic Objects”.**
 - Using Object Identification Setting.
 - Descriptive Programming (DP) using “Run Time”/ “Test Object” Properties.
 - Using Recovery Scenario Wizard
- **Concept of “Virtual Object”**
 - Using OR Approach.
 - Using DP Approach.
- **Database Connectivity**
 - Create Dynamic Database Connection.
 - Working with Excel as Database (ADODB connection with Excel).
- **Component Object Model (COM)**
 - Implementation of ‘Excel Object Model’.
 - Implementation of ‘Outlook Object Model’.
 - Implementation of ‘Word Object Model’.
 - .INI Files
- **File System Object - FSO**
 - Working with Text Files
 - Working with Folders
 - Working with Drives
 - Create low level results using file system object
- **Difference between Test Object & Real Object**
- **Windows Shell Scripting using WSH**
 - Send Keyboard Input to Application.
 - Update Windows Registry.
 - Methods: Run & AppActivate etc.
- **Some UFT Advance Concepts**
 - Mercury.DeviceReplay” for “Keyboard” and “Mouse” oriented operations.
 - Relative Path.
 - Path Finder.
 - Advantage of Register User Function.
 - Custom Replay Solutions.
 - Web Replay Type.
 - Image Comparison.
 - RegisterUserFunction
- **Customization of UFT Results.**
 - Using Reporter Event
 - Embed Html in UFT Test Result
- **Functional Automation Test Feasible Analysis**

- **Design & Development Automation Test Catalogue**
- **Import UFT setting on run time using Configuration file**
- **Some Advanced Technique to Identify the Objects like:**
 - Get Text Location.
 - Get Visible Text
 - Convert Browser into Window.
- **Working with Windows Registry.**
 - Updating Web Objects property in Registry for DP.
 - Register COM Objects with UFT.
 - Handling Utility Objects through Registry.
- Code Review and Optimization Techniques used in UFT
- Extern Object to access the Win32 windows library functions
- Custom Web Event Recording Configuration
- How to Handle Third Party controls
- **Windows Management and Instrument (WMI)**
 - Win32 Process.
 - Win32 TimeZone.
 - Win32 Processor.
- **Document Object Model (DOM)**
 - Advantage of DOM.
 - Working with the Real (Html) Object.
 - Convert “Test Objects” into “Run Time Objects” and “Run Time Objects” into “Test Objects” as per the application requirements.
 - Identify the 'Objects' with the help of 'ANCHOR'.
 - Elimination of Virtual Objects by use of DOM.
 - Comparison with of Html Object with UFT Test Object.
 - Attributes of DOM Objects.
 - Customization of Test Script by using DOM.
 - Methods of DOM Objects.
 - Working with Extremely Complex Hierarchy.
- **DLL Files**
 - Design DLL Files.
 - Register DLL Files.
 - Access DLL Files through UFT.
- **Implementation of Dot Net Factory**
- **Mapping "Custom Test Object" Class to "Pre-Defined UFT Test Object" Class**

- **Test Automation Framework**
 - Keyword Driven Framework
 - Data Driven Framework
 - Hybrid Driven Framework

ALM (Application Life Cycle Management)

- Integration of UFT & Quality Center
- Integrate Test Automation Framework with ALM
- Save Automation Test with ALM
- Run Automation Test with ALM
- Save Results with ALM