Software Testing Tools

Course Content for Online Training

Manual Testing
Introduction

- ✓ Introduction to software Testing
- ✓ Software Development Process
- ✓ Project Vs Product
- ✓ Objectives of Testing
- ✓ Testing Principals

Software Development Life Cycle

- ✓ SDLC

SDLC Models

- ✓ Waterfall Model
- ✓ Spiral Model
- ✓ V Model
- ✓ Prototype Model
- ✓ Agile Model (Scrum)
- ✓ How to Choose Model for a Project

Software Testing-Methods

- ✓ White Box Testing
- ✓ Block Box Testing
- ✓ Gray Box Testing

Levels of Testing

Unit Testing
- ✓ Structural Testing
- ✓ Statement Coverage Testing
- ✓ Condition Coverage Testing
- ✓ Branch Coverage Testing
- ✓ Path Coverage Testing

Integration Testing
- ✓ Big Bang Integration
- ✓ Top Down Approach
- ✓ Bottom up approach
- ✓ Stubs and Drives

System Testing

- ✓ Functional Testing
- ✓ Non Functional Testing
- ✓ Compatibility Testing
- ✓ Performance Testing
  - ✓ Load Testing
  - ✓ Volume Testing
  - ✓ Stress Testing
- ✓ Recovery Testing
- ✓ Installation Testing
- ✓ Globalization Testing
  - ✓ I18N
  - ✓ L10N
- ✓ Security Testing
- ✓ Usability Testing
- ✓ Accessibility Testing

User Acceptance Testing

- ✓ Alpha Testing
- ✓ Beta Testing

Testing Terminology

- ✓ Functional Testing
- ✓ End-End Testing
- ✓ Ad-hoc Testing
- ✓ Risk Based Testing
- ✓ Sanity/Smoke Testing
- ✓ Re-Testing
- ✓ Regression Testing
- ✓ Exploratory Testing
- ✓ Parallel Testing
- ✓ Concurrent Testing

Windows & Web Application Testing

- ✓ Check List for Window App Testing
- ✓ Check List for Web Application Testing
- ✓ Web App Testing Terminology

Software Testing Life Cycle (STLC)

Test Strategy

Test Planning

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Test Cases Design

- ✓ Error Guessing
- ✓ Equivalence Partition
- ✓ Boundary Value Analysis

Test Case Authoring

- ✓ Functional Test Case
- ✓ Review Test Case
- ✓ Walkthroughs
- ✓ Inspection
- ✓ Peer Review
- ✓ Traceability Matrix

Build Release Process

- ✓ SRN & DD
- ✓ Build Deployment
- ✓ Project Dev Env (Dev, Test, Prod)

Defect Reporting & Tracking

- ✓ Defect Reporting
- ✓ Defect Life Cycle
- ✓ Severity, Priority
- ✓ Defect Tracking Tools

Test Closure

- ✓ Criteria for Test Closure
- ✓ Test Summary Reports

Additional

- ✓ Introduction to VSS
- ✓ Project Metrics
- ✓ QA & QC
- ✓ ISO & CMM Standards
- ✓ Testing Certifications
- ✓ Interview Question
- ✓ Organization Hierarchy
- ✓ Role of Project Team Members

Test Management using
Quality Center

Overview on Test Management
Architecture of QC Tool

Site Administrator

- ✓ Create Project
- ✓ Create Users
- ✓ Assign User to Projects
- ✓ Monitor Connections & Licenses Sitescope
- ✓ Backup, Restore Projects
- ✓ Version Control

Quality Center

- ✓ Managing Requirements
- ✓ Working with test Plan
- ✓ Developing Manual & Automation Tests
- ✓ Coverage Analysis/Traceability
- ✓ Create Test Cases
- ✓ Running Tests
- ✓ Record Results
- ✓ Defect Reporting & Tracking
- ✓ Integration with QTP
- ✓ Test Resources
- ✓ Test Linkage
- ✓ Defect Linkage

Test Management

- ✓ Developing Reports
- ✓ Developing Graphs
- ✓ Dash Board

Customization

- ✓ Creating Groups
- ✓ Module Access

Automation -- QTP 11.00
Introduction to Automation

- ✓ What is Automation Testing
- ✓ Benefits of Automation Testing
- ✓ Manual Testing Vs Automation Testing
- ✓ Various Automation Test Tools
- ✓ Tool selection criteria

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Introduction to QTP 11.00

- ✓ Overview of Quick Test Pro
- ✓ Starting Quick Test
- ✓ Quick Test Window
- ✓ Quick Test Window Layout
- ✓ Using Quick Test Commands

Different ways of Developing Automation Tests

- ✓ Recording a test
- ✓ Standard Recording
- ✓ Analog Recording
- ✓ Low Level Recording
- ✓ Writing Script
- ✓ Descriptive Programming

Working with Test Objects and Object Repositories

- ✓ How QTP learns & identifies Objects
- ✓ Working with Test Objects
- ✓ Object Spy
- ✓ Configuring Object Identification
- ✓ Smart Identification
- ✓ Merging Shared Object Repositories
- ✓ Comparing shared objects Repositories
- ✓ Associating shared objects Repositories to a Test
- ✓ Working with Test objects methods & Properties

VB Script Language Overview

- ✓ VB Script Data Types
- ✓ VB Script Variables
- ✓ VB Script Constants
- ✓ Conditional Statements
- ✓ Loops
- ✓ Select case
- ✓ Arrays
- ✓ functions

User Defined Functions

- ✓ Creating User Defined Functions
- ✓ Advantages of Using Functions
- ✓ Creating Generic Functions
- ✓ Creating Function Libraries

- ✓ Associating Function Libraries
- ✓ Preparing Regression Test Automation Suites
- ✓ Function Decomposition Implementation

Advanced VB Scripting

- ✓ Working with Internet Explorer Application
- ✓ Working with File system Objects
- ✓ Working with Data Base Connection
- ✓ Working with Record Set Object
- ✓ Working with COM Object
- ✓ Working with Word Application Object
- ✓ Error handling with Err Object
- ✓ Working with Dictionary Object
- ✓ Working with XML Util Object
- ✓ Working with QC Util Object
- ✓ Working with DOM Object
- ✓ WSH Scripting Basics
- ✓ Working with Shell

Synchronization

- ✓ Need of Synchronization
- ✓ Different ways of Synchronizing the Tests
- ✓ Configuring Default Synchronization Time Out
- ✓ Exist Statement
- ✓ Wait Statement
- ✓ Synchronizing Point

Checkpoints

- ✓ Checkpoint Introduction
- ✓ Adding Checkpoints to a Test
- ✓ Types of Checkpoints
- ✓ Standard Checkpoint
- ✓ Image Checkpoint
- ✓ Bitmap Checkpoint
- ✓ Table Checkpoint
- ✓ Text Checkpoint
- ✓ Text Area Checkpoint
- ✓ Accessibility Checkpoint
- ✓ Page Checkpoint
- ✓ Database Checkpoint
- ✓ XML Checkpoint
- ✓ Checkpoints Supported Environment
- ✓ Validating the Above Checks through Code

Output Values

- ✓ Output Values Introduction
- ✓ Different Output Values
- ✓ Defining Output Values
- ✓ Storing Output Values
- ✓ Using Output Values in Script
- ✓ Substitute Above Output Values through Code

Transactions

- ✓ Purpose
- ✓ Inserting Transactions
- ✓ Inserting Ending Transactions
- ✓ Analyzing Transaction Results

Working with Actions

- ✓ Introduction to Actions
- ✓ Benefits of Actions
- ✓ Creating Tests with Multiple Actions
- ✓ Guidelines for working with Actions
- ✓ Creating new Actions
- ✓ Insert Actions
- ✓ Inserting Copy of Actions
- ✓ Inserting Existing Actions
- ✓ Splitting Actions
- ✓ Action Parameters
- ✓ Test Modularity Implementation
- ✓ Creating an Action Template
- ✓ Difference Between Reusable Actions and Functions

Developing Data Driven Tests

- ✓ Introduction to Parameterize Tests
- ✓ Parameterize a Test Manually
- ✓ Parameterize a Test using Data table
- ✓ Parameterization through XML Files, Excel Files, Flat Files
- ✓ Parameterize a Test using Environment Variables
- ✓ Data Driven Test
- ✓ Create Data Driven Tests
- ✓ Local and Global Data Tables

Regular Expressions

- ✓ Introduction to Regular Expressions
- ✓ Defining Regular Expressions
- ✓ Working with RegExp Object

Debugging

- ✓ Need of Debugging
- ✓ Break Points
- ✓ Step Into
- ✓ Step Over
- ✓ Step Out
- ✓ Debug Viewer
- ✓ Watch
- ✓ Variable
- ✓ Command

Recovery Scenarios

- ✓ Introduction to Recovery Scenarios
- ✓ When to use Recovery Scenarios
- ✓ Defining Recovery Scenarios
- ✓ Recovery Scenario Manager
- ✓ Managing Recovery Scenarios
- ✓ Associating Recovery Scenarios to your Test
- ✓ Programmatically Controlling the Recovery Mechanism

Descriptive Programming

- ✓ Introduction to Descriptive Programming
- ✓ When to use Descriptive Programming
- ✓ Descriptive Programming Approach
- ✓ Static Representation
- ✓ Dynamic Representation
- ✓ Handling Dynamic Objects
- ✓ Handling Similar Objects
- ✓ Developing Generic Scripts

Virtual Objects

- ✓ Define Virtual Objects
- ✓ Manage Virtual Objects

Working with Web Tables

AOM Scripts

- ✓ Developing Start Up Scripts
- ✓ Launching QTP
- ✓ Setting Tool Options
- ✓ Setting Test Options
- ✓ Opening a Test
- ✓ Running a Test
- ✓ Store Results in Required Location
- ✓ Closing a Test
- ✓ Closing QTP

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API Programming

- ✓ API Introduction
- ✓ Windows API Library
- ✓ Registering API Library
- ✓ Calling the Library Functions in API

Scripting in Real-time Environment

- ✓ Quick Test Pro Coding Standards & Best Practices
- ✓ Naming Conventions
- ✓ Coding Rules

Automation Frameworks

- ✓ Automation Approach
- ✓ Planning and Design Frame Work
- ✓ Implementation of
- ✓ Modularity Framework
- ✓ Library Architecture Framework
- ✓ Keyword-Driven Framework
- ✓ Data-Driven Framework
- ✓ Hybrid Framework

Working with Quality Center

- ✓ Connecting to Quality Center
- ✓ Disconnecting from Quality Center
- ✓ Integrating Quickest with Quality Center
- ✓ Uploading Automation Resources in Quality Center
- ✓ Saving Tests into Quality Center
- ✓ Opening Tests from Quality Center
- ✓ Executing Tests from Quality Center

Additional Coverage

- ✓ Utility Objects
- ✓ Step Generator
- ✓ Function Definition Generator
- ✓ Examples & Scenarios Relevant to Major Businesses

Performance Test Automation using Load Runner

Overview

- ✓ Performance Testing Concepts
- ✓ Performance Testing Types
- ✓ System Architecture
- ✓ Objective of the Performance Testing
- ✓ Phases of the Perf Testing
- ✓ Components of Load Runner
- ✓ LoadRunner Testing Process

Recording

- ✓ Structure of the script based planning
- ✓ Use Vugen to record a Vuser Script for Web Environment
- ✓ Describe HTML & URL recording levels
- ✓ When to use HTML and/or URL recording levels

Playback

- ✓ Identify the appropriate Web Run-time settings to set
- ✓ Configure Web Run-time settings to run the script
- ✓ Verify Vuser script functionality in VuGen
- ✓ Solve Playback problems by parameterizing the script
- ✓ Different types of parameterizations

Manual Correlation

- ✓ Distinguish between available correlation Methods
- ✓ Correlation a script manually using Correlation Functions
- ✓ Correlation during and After Recording
- ✓ Correlation after Recording
- ✓ Use the scan for Correlation tool
- ✓ Correlation data during recording
- ✓ Define rules for Correlation in Recording Options
- ✓ Enable Correlation during recording

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Introduction to scenarios

- ✓ Explain elements that make a Load Runner scenario
- ✓ Identify different types of scenarios
- ✓ How to choose a scenario
- ✓ Present the basic steps for creating a scenario

Using Run-Time settings

- ✓ Script and scenario Run-Time settings
- ✓ Configure Run-Time settings in the Controller

Scenario Execution

- ✓ Prepare for Scenario run
- ✓ Identify techniques to efficiently run a scenario

Scheduling scenarios

- ✓ Scheduling Group and by scenario
- ✓ Prepare VuGen user Installation
- ✓ Configure scenario ramp up and ramp down

Performance Monitors

- ✓ Values of Performance Monitors
- ✓ Select Performance Monitors
- ✓ Add measurements Performance Monitors
- ✓ Performance Overlays to track down bottlenecks

Result Analysis

- ✓ Value of root cause analysis – resources bottlenecks, code loops
- ✓ Diagnose errors with Load Runner Application and Architecture