Manual testing & Quality Center :

MANUAL TESTING

SDLC -

- What are the different phases of SDLC?
- How does the process of Software Development Start?
- Project Initiation
- Requirement Gathering and Analysis
- What is Requirement document and what it contains?
- What is use case document and what it contains?
- What is Basic path and Alternate Path?
- Role of Business Analyst
- Example for explaining each phase
- Role of technical specification team
- What is Technical specification document?
- What is System Design?
- Role of Design team
- What is design document?
- Role of architecture team
- System development
- Role of development team
- Deliverable of Development phase
- System testing
- Role of testers and types of testing
- User acceptance testing
- System deployment
- System maintenance
- Events in the maintenance phase like bug fixes

STLC
- How are the phases of STLC carried out?
- What is testing?
- Role of testers
- Why do we need to test?
- Activities involved in the testing phase
- What is test plan and test case document?
- Steps of test case execution
- What does test case document contain?
- How to write test case document?
- What is required to test any application?

TEST CASES
- What is test case?
- What does test case document contain?
- How to write test case document?
- Different test case techniques

TEST PLAN
- What is Test Plan?

- How to write test plan document?
- What does the test plan document contain?
- Who writes and approves the test plan document?
- How manage the test case documents?
- What is the pass/fail criterion?

TYPES OF TESTING
- Different Phases of testing
- What is unit testing?
- What is Minimum acceptance testing?
- What is integration, system and system integration testing?
- What is User acceptance testing?
- What is Regression Testing?

DEFECT ANALYSIS
- What is a defect?
- Various Defect tracking tools
- How to use the defect tracking tools?
- How to enter the details of defect in the defect tracking tool?
- How to identify a defect?
- What is severity and priority?

TRACEABILITY MATRIX
- What is Traceability Matrix[TM]?
- Who Prepares the TM document?
- What is the reference for writing TM?
- What is the use of TM?
- What is present in the TM document?
- Sample TM
- Tools used for developing TM

Various Teams and their Roles
- Configuration Management Team
- Role of configuration management team
- What is Deployment?
- Deployment Team
- Role of Deployment team
- Version Control
- Various version tools and its usage
- Difference between QC and QA
- What is automation testing?
- Why, what and when to automate?
- Various tools used for automation testing

MANAGEMENT TOOL
QUALITY CENTER
- Introduction to Quality Center
- What is Quality Center ?
- Why to use Quality Center
- Version of Quality Center
- Overview of quality Center user interface
- Various tabs in Quality center
- Requirement Module
- Requirement Module Overview
- Creating Requirement tree

- Creating Parent & Child requirements
- Understanding the Description tab
- Understanding the History tab
- Uploading attachments to requirement
- A glance at various columns in requirement
- Types of views in requirement module
- Requirement grid view
- Requirement coverage view
- Test Plan Module
- Creating folder structure
- Create test cases
- Requirement coverage
- Test Lab Module
- Overview of Test Lab
- Detail of various tabs
- Creating folders
- Creating Test sets
- Adding test cases
- Different columns in Execution Grid
- Execution Flow tab
- Scheduling Test runs
- Test Set Properties tab
- Linked Defects tab
- Running Tests manually
- Running Tests automatically
- Viewing Test results
- Quality Center Defects
- Overview of Defects
- Creating defects after test execution
- Adding defects in defect module
- Creating defects during test execution
- Linking Defects
- How to close a defect
- Closing defects after retest
- Mailing the defects
- Quality Center reports & graphs
- Why Reports & Graphs?
- How to create reports & graphs for Analysis?

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Automation test Implementation Using QTP 10.0

Overview/Introduction to Automation testing:

- Drawbacks of Manual Testing

- Advantages of Test Automation

- Benefits of Automation testing

- Overview on the Testing tools available in the industry
- Tool selection
- Selection criteria for the test cases to be automated

Introduction to QTP:

- History of Quick Test Professional
- Supporting Environments
- License types
- Starting Quick Test window
- Add in Manager window
- Quick Test Professional GUI window

Key Elements of QTP:

- Test Pane (Keyword View/Expert View)
- Active Screen
- Data Table
- Debug Viewer
- Missing resources
- Information

QTP testing process:

- Test planning/Create the environment
- Recording/Create the basic test
- Enhancing the script
- Debugging the script
- Running the script
- Analyze the Test results
- Reporting the defects

Record and Playback:

- **Creating and executing a basic test**
    I. Recording a test
    II. Understanding the recorded test
    III. Running a test
- Recording modes
    I. Normal recording
    II. Analog recording
    III. Low level recording
- Analyze QTP Test Results window

Types of Object in QTP:

- Test Object
- Run Time object
- Utility objects
- Automation objects

Object repository:

- Local repository
- Shared repository

Working with Object Repository:

- How Quick Test identifies Objects
- Working with Test Objects
    i. Object Repository Introduction
    ii. Identifying the Object
    iii. Highlighting the object
    iv. Viewing the Object's Properties
- Add the objects to OR manually
- Object Spy
- Configuring Object Identification
- Smart Identification mechanism
- Managing Object Repositories
- Merging Shared Object Repositories
- Associating Shared Object Repositories to a Test

Introduction to VbScript:

- VB Script Language Overview
- VB Script Data Types
- VB Script Variables
- Comments
- Operators
- Conditional statements (If and Select)
- Loops (For, Do While, Do Until)
- Functions
- Coding standards
- Naming conventions

Working with web tables:

Working with child objects:

Working with child items:

Checkpoints:

- Checkpoint Introduction
- Adding Checkpoints to a Test
    i. Adding Checkpoint while Recording
    ii. Adding Checkpoint while Editing
- Types of Checkpoints

    i. Standard Checkpoint

    ii. Text Checkpoint

    iii. Text Area Checkpoint

    iv. Bitmap Checkpoint

    v. Database Checkpoint

    vi. Accessibility Checkpoint

    vii. XML Checkpoint (From Application)

    viii. XML Checkpoint (From Resource)

    ix. Page Checkpoint

    x. Image Checkpoint

    xi. Table Checkpoint

Output values:

- Output value Introduction
- Adding Output value to a Test
  - iii. Adding Checkpoint while Recording
  - iv. Adding Checkpoint while Editing
- Types of Output value

  - i. Standard Output value

  - ii. Text Output value

  - iii. Text Area Output value

  - iv. Database Output value

  - v. XML Output value (From Application)

  - vi. XML Output value (From Resource)

Working with Data tables:

- Introduction to Data tables
- Working with Global and Action sheets
- Importing and Exporting data
- Working with Data Table methods

Working with Environment variables:

- Built-in Variables
- User Defined Variables
- Defining, modifying and associating environment variables
- Loading Environment file during run-time

Parameterization:

- Introduction to Parameterization
- Parameterizing using Data table
- Parameterizing using Environment variables
- Parameterizing using random numbers

Actions:

- Types of actions

  - i. Non-reusable Actions

  - ii. Re-Usable actions

  - iii. External Actions

- 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

Synchronization& Transactions:

- **Synchronizing the tests:**
    i. Adding wait statement
    ii. Adding Exist statement
    iii. Inserting Synchronization point
- **Transactions:**
    i. Start Transaction
    ii. End Transaction

Regular Expressions:

- Introduction to Regular Expressions
- Handling Dynamic objects
- Defining Regular expressions
- Running and analyzing a test with Regular Expressions

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

Debugging techniques:

- Inserting/Removing Break points
- Watch/ variable
- Step by step execution

Descriptive Programming:

- Advantages of Descriptive Programming
- Handling Dynamic objects
- Getting child objects
- Create a script using both OR and DP for an application

Working with the databases:

Automation Object Model:

- Working with Excel
- Working with keyboard
- Working with mouse
- Working with QTP object

Working with File System Object:

Working with Arrays/Dictionary objects:

Error Handling:

On Error Resume Next

On Error Go to

Automation Frameworks:

- Introduction to Framework
- Overview of the Frameworks

    i.   Modularity Framework
    ii.   Keyword-Driven Framework
    iii.   Data-Driven Framework
    iv.   Hybrid Framework

Additional Topics:

* Step generator
* Function definition generator
* Virtual objects
* Examples related to real time for each feature in QTP

Support: Support will be given after the course as well after the discussion with minimal cost.

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Mobile Application testing :

Overview/Introduction to Mobile application testing:

* What is Mobile Application Testing?

* Differences between Mobile and Mobile application testing.

* Differences between Native and Web application?

* Complexity of mobile testing domain

Mobile Applications:

* Network related applications.

* Other applications.

* Recommended strategy for mobile application testing

* Unique challenges in mobile application testing

Mobile Platforms:

* Types of Mobiles

* Simulators and Emulators

* Android

* iOS

* Windows7

* Bada

* Symbian

* Blackberry

Basics of mobile testing

Mobile application testing strategy:

- Building a Mobile Testing Strategy
- How to choose which devices to test, planning what to test and how to review strategy

Android Mobile:

- History
- How to install the Android emulator
- Android testing criteria
- How to install the application to test in the emulator

ADB commands
Android Components
Android UI test cases
Functionality test cases
Interrupt testing
Type of testing
Configure the SD card in emulator
iPhone mobile:

- History
- How to install the application

Portrait mode Vs Landscape mode
Functionaltesting in mobile environment:

- Smoke testing
- Functional testing
- UI testing
- Regression testing
- Security testing
- Retesting
- Compatibility testing with the devices

Testing the application with emulators

- Install the application
- Create multiple devices
- Test with multiple devices
- Create SD card

Testing the application with the physical devices

Defect tracking:

- How to Log the issues
- How track the issues in the bug tracking tool

Screen shot capture with the mobile devices

Crash Log files with multiple device during testing

Real time project testing

Introduction to automation tools

- SeeTest

  - Introduction to SeeTest
  - Configure the Seetest with iPhone/Android
  - Record and play back
  - Object repository and object spy
  - Object identification
  - Script enhancement
  - Export to QTP

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Selenium

Introduction:

- Automation Testing
- Advantages of Automation testing
- Things to be considered when to go for automation
- selenium introduction
- selenium history
- how selenium is different from QTP
- why to use selenium

Selenium IDE

- Introduction to selenium ide
- installing IDE in firefox
- IDE tour(opening the ide)
- IDE features
- Running Test case
- exploring to selenese commands

- running test suite in IDE
- Debugging the Test
- running ajax application
- what cannot be Tested in IDE

Locators

- Locating element by ID
- Locating element by Name
- Locating element by Xpath
- Locating element by CSS

Selenium IDE Concepts:

- IDE Context Menu
- Asserting the elements
- Verifying the elements
- WaitFor elements
- Storing the elements
- Adding Selenium IDE comments
- Building Test cases using Selenium IDE
- Synchronization commands
- Working on pages with AJAX
- Creating test suites

Oops Concepts and Basics of Java

- introduction to Java
- Installation of Java
- Data Types in Java
- Conditional statements
- Operators
- OOPS concepts in java
- writing basic program on java
- Java exceptions and Assertions
- introduction to jUnit

Selenium RC:

- What is Selenium Remote Control
- Overview of Selenium Remote Control using JAVA
- Download selenium RC
- Installing selenium RC

- Starting selenium server from Command prompt
- Stopping selenium server from Command prompt and Browser
- Running selenium scripts/tests from Command prompt using selenium RC
- Executing Selenium- IDE Test suites on Different browsers
- Report generation for selenium scripts
- Set up Selenium RC in Eclipse using Junit
- Starting Selenium RC from eclipse
- Stopping Selenium RC from eclipse
- Start and stop selenium RC from Selenium Script
- Converting Selenium IDE tests to a programming language(JAVA)
- Running Selenium script in Different Browsers with Eclipse and JUNIT.

WebDriver

- Selenium WebDriver Introduction
- WebDriver Vs RC
- Download and Configure WebDriver with Eclipse
- Simple Testcase
- Open and Close Browser
- Cross Browser Testing – Firefox, IE ,Chrome, HtmlUnitDriver
- UI elements ,Locators
- Downloading and configuring WebDriver in eclipse
- Drivers for Firefox, IE etc
- Opening multiple browsers at one time
- Creating own Firefox profile
- Magic of HtmlUnitDriver
- Identifying Web Elements using id, name, link name, class,
- xpath, tag name etc
- Handling Input Box/Buttons
- Handling Radio Buttons, Checkboxes, web list
- Dynamic objects
- Certificate error handling using WebDriver
- Capturing screenshots with WebDriver
- Window handles
- Tabbed browsing in Selenium with example

- Pop up handling in Selenium with example
- Managing variable xpaths
- Simulating Pressing Enter Key of Keyboard
- Simulating other Keyboard Keypress events
- Simulating forward and back button click on Browser using Selenium
- Identifying WebElement using id, name, link text, class, xpath, css
- Handling various WebElement using WebDriver
- Handling Mouse movements and keyboard Events
- Working with excel/data driven framework

Grid

- Installation
- Configuration
- Set up the multiple machines for the distributed testing
- Execution using the distributed testing

Frameworks:

- Introduction of Testing framework
- Types of frameworks
- Tools for developing Test Framework
- TestNG introduction and Configuration with eclipse
- TestNG Annotations and Data Providers
- Creating Test Suit with TestNG

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• Selenium RC and WebDriver