

Manual Testing Life Cycle Implementation

Software Engineering Concepts

- Introduction
- Importance of software systems
- Common problems in software development and Software Bugs
- Testing Objectives

SDLC

- Software Life Cycle Stages
- Testing Stage in SDLC
- Cost of Defect Repair
- Risk of inadequate Testing

Software Development Models

- Waterfall Model
- Incremental Model
- Prototype Model
- Rapid Application Development Model
- Spiral Model
- V Model Development

Static Testing

- Review
- Inspections
- Walkthroughs

Dynamic Testing

- Unit Testing
- Integration Testing
- System Testing
- User Acceptance Testing

Software Testing Life Cycle and implementation

Test Requirements Gathering and Analysis

- Requirements Reviews
- Requirements Issues Identification

Test Strategy Preparation

System Test Plan Preparation

Test Case identification

Black Box Test Design Techniques

- ECP
- BVA
- Error Guessing
- Decision Tables
- State Transition

White Box Testing Techniques

- Basis Path Testing
- Cyclomatic Complexity
- Condition Testing
- Code Coverage

Identify Scenario based Test Cases

Identify Filed validation Test Cases

What is Use case?

Identify Use Case based Test Cases

Test Case Design

- Introduction:
- Test Case Design Templates
- Types of Test Cases
- Test Case Design Reviews
- Requirement Traceability Matrix

Test Data Setup

- Importance of Test data in Testing
- Approach for gathering Test Data
- Benefits of Test data Gathering
- Managing Test data and creating Data Repositories

Software Environments

- Introduction
- Different Components in software environments
- Difference between Test and Production Environment

Test Execution

- Test Execution Life cycle Process
- Different levels of Test Execution
- Sanity/ Smoke testing(Level 0)
- Test Batches or Test suite Preparation and Execution(Level 1)
- Retesting(Level 2)
- Regression Testing(Level 3)
- Database Testing

Defect Reporting and Tracking

- What is defect?
- Categories of defects
- Defect life cycle process
- Formal Defect report Template
- Defect Metrics
- Defect Removal Efficiency

Test Measurement Techniques and Metrics collection

- Importance of Test Metrics
- Testing Data Used for Metrics: -
- Different types of Metrics

Test Closure Activity

- Test Execution Stop Criteria
- Test Summary Report Preparation

User Acceptance Testing

- Importance of User Acceptance Testing
- Scope of UAT
- Alpha Testing
- Beta Testing

Software Configuration Management

- Introduction to Software Configuration Management
- Need of Software Configuration Management

Performance Testing Techniques

- Introduction
- Types of performance testing

Other commonly performed Testing Techniques

- Gray Box Testing
- Usability Testing
- User Interface Testing
- Compatibility Testing
- Configuration Testing
- Adhoc Testing
- Exploratory Testing
- Installation and Un-installation Testing
- Globalization (I18N)
- Recovery Testing
- Security Testing

Automation Life Cycle Implementation Using QTP

Introduction to Automation Testing

- What is Automation Testing
- Benefits of Automation Testing
- Manual Testing Vs Automation Testing
- Various Automation Test Tools

- Tool selection criteria

Introduction to QuickTest Pro

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

Record and Playback

- Creating and executing a Basic Test
 - Recording a test
 - Understanding your recorded test
 - Executing a test
- Different Recording Levels
 - Standard Recording
 - Analog Recording
 - Low Level Recording
- Analyzing the Quick Test Results

Special focus on VB Script

- VB Script Language Overview
- VB Script Data Types
- VB Script Variables
- VB Script Constants
- Functions
 - Numeric Function
 - String Function
 - Date and Time Function
 - Conversion Function
- Control-of-Flow language
 - Conditional Statements
 - If... Else, Select case
- Iterative Statements
 - While
 - For
 - Do...While
 - Do...Until
- Sample scripts on
 - Creating Microsoft excel object
 - Creating file system object

Working with Test Objects and Object Repositories

- How QuickTest identifies Objects
- Working with Test Objects
 - Object Repository Introduction
 - Identifying the Object
 - Viewing the Object's Properties
- Object Spy
- Configuring Object Identification
- Smart Identification

- Managing Object Repositories
- Merging Shared Object Repositories
- Associating Shared Object Repositories to a Test
 - Managing Shared Object Repository Association
 - Associating Object Repositories with Actions
- Guidelines for Working with Actions
- Creating a New Action
- Inserting Actions
- Inserting Copy of Action
- Inserting Existing Action
- Splitting Actions
- Action Parameters
- Test Modularity Implementation

- Creating an Action Template

Synchronization

- Synchronizing your tests
- Options to synchronize your tests
 - Inserting Synchronization Point
 - Adding Exist Statement
 - Adding Wait Statement
 - Global Synchronization Settings
- Transactions
 - Inserting Transactions
 - Ending Transactions

Checkpoints

- CheckPoint Introduction
- Adding Checkpoints to a Test
 - Adding Checkpoint while Recording
 - Adding Checkpoint while Editing
- 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

Output Values

- Output values introduction
- Categories of Output Values
- Creating Output Values
- Storing Output Values
- Storing Output Values
- Viewing and Editing Output Values

Working with Actions

- Introduction to Actions
- Benefits of Actions
- Creating Tests with Multiple Actions

Parameterizing Tests and Data Driven Tests

- Introduction to Parameterizing Tests
- Parameterizing Tests
 - Parameterizing a Test Manually
 - Parameterizing a Test using Data Table
 - Parameterizing a Test using Environment Variables
- Data Driven Test
 - Create Data Driven Tests
 - Local and Global Data Tables

Working with Data Tables

- Introduction to Data Tables
- Working with Global and Action Sheets
- Editing and Saving Data Table
- Importing and Exporting Data
 - Importing Data from a Spread Sheet
 - Importing Data from a Text file
 - Importing Data from a Database
 - Exporting Data to a Spread Sheet
- Using Formulas in the Data Table
- Using Data Table Methods

Regular Expressions

- Introduction to Regular Expressions
- Defining Regular Expressions
- Running and Analyzing a Test with Regular Expressions

Functions

- Creating User Defined Functions
- Advantages of using functions
- Creating generic functions
- Preparing Regression Test Automation suites
- Function Decomposition Implementation

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

Quick Test Automation Object Model

- Automation QuickTest Operations
- When to use AOM scripts
- Basic Elements of AOM Script
- Generating your AOM Script

Working with Quality Center

- Connecting to Quality Center
- Disconnecting from Quality Center
- Integrating QuickTest with Quality Center
- Saving Tests into Quality Center
- Opening Tests from Quality Center

Descriptive Programming

- Introduction to Descriptive Programming
- When to use Descriptive Programming
- Interacting with Test Objects not Stored in the Object Repository
- Access Dynamic Objects During Run-time
 - Retrieving Run-Time Object Properties
 - Activating Run-Time Object Methods

Scripting in Real-time Environment

- QuickTest Pro Coding Standards & Best Practices
- Naming Conventions
- Coding Rules

Automation Frameworks

- Modularity Framework
- Library Architecture Framework
- Keyword-Driven Framework
- Data-Driven Framework
- Hybrid Framework

Quality Center

- Overview of Test Management
- Creating Projects
- Creating Users
- Assigning Users to Projects
- Importing & Exporting Projects
- Customizing QC
- Defining & Managing Requirements
- Developing Manual & Automated Tests
- Creating Test Sets
- Executing Tests
- Defect Reporting & Tracking
- Integration with Other Tools
- Preparing Coverage Analysis & Tractability
- Generating various Test Reports & Graphs

LoadRunner

Overview on LoadRunner

- Load Testing
- Performance Testing
- Stress Testing
- LoadRunner Architecture
- Load Test Process

Vuser Generator

- Recording the Basic Script
- Enhancing the Script
- Executing the Script
- Analyzing the Log

LoadRunner Controller

- Load Test Planning
- Creating the Scenarios
- Executing the Scenarios

Analysis

- Analyzing the Summary Report
- Graphs analysis
- Identifying the bottle necks
- Creating the reports

Interview Orientation

Resume Preparation

Sample Project / Case Studies