

Software Testing

Manual Testing

A. Fundamentals of Software Testing

- Introduction to Testing
- Verification vs. Validation
- Types of Applications
- Probabilities of Errors
- Software Development Life Cycle (SDLC)
- Waterfall Model
- SDLC Advantages/Disadvantages
- Principles of Testing
- Software Testing Life Cycle (STLC)
- Test Cases, Use Cases, and Scenarios
- Test Plan/Strategy Development
- Test Case Template Creation
- Errors, Bugs, Defects, and Failures

B. Test Design Techniques

- Boundary Value Analysis
- Equivalence Partitioning
- Decision Table Testing
- State Transition Diagrams
- Use Case Testing

C. Software Testing Concepts

- Bug Life Cycle
- Bug Report Template
- Bug Tracking Tools
- Types of Testing
- Static vs. Dynamic
- Functional vs. Non-Functional
- Testing Techniques
- Black Box Testing (and Types)
- White Box Testing (and Types)

D. Testing Phases & Environments

- System Integration Testing vs. User Acceptance Testing (UAT)
- Entry/Exit Criteria
- Test Environment / Data

E.Other Concepts

- Integration Testing
- Big Bang
- Incremental
- Top-Down
- Bottom-Up
- Hybrid
- Requirement Traceability Matrix

Selenium Training

A. Core JAVA

- Core Java Fundamentals
- Environment Setup
- Keywords, Syntax, Variables, Operators,Control Flow
- OOPs Overview
- Conditions, Loops, Modifiers
- Java Programming Environment
- Installation, Path, Program Structure
- Fundamentals of Java Programming
- Conventions, Comments, Statements, Blocks
- Types, Variables, Casting, Operators

- Control Structures
- Input/Datatypes
- Keyboard Input
- Arrays
- Strings
- Object Oriented Programming
- Classes, Objects, Variables
- Constructors, "this", Modifiers
- Inner Classes
- Inheritance
- Abstract/Interfaces
- Polymorphism
- Packages
- Predefined Packages
- New Package Concepts
- Exception Handling
- Multithreading
- Serialization
- Collection Framework

B.Introduction To Selenium

- Selenium WebDriver Architecture
- How to install Java on Windows OS

- How to install Eclipse IDE on Windows
- How to Setup Selenium WebDriver in Eclipse IDE
- How to run Tests on Different Browsers

C. Maven Introduction

- Introduction about Maven
- High-Level Overview
- Ant vs. Maven
- Installation of Maven
- Demo using Sample Maven Project

D. Web Driver Manager

- How to use WebDriver Manager
- How to Write First TestCase in Selenium WebDriver Interface
- Basics Methods in WebDriver Interface

E. Locators

- Locators in Selenium WebDriver
- Different Types of Locators

F. X-paths

- Introduction to XPath

- Relative vs. Absolute XPath
- XPath Starts-with Function
- XPath Contains Function
- XPath text() Method
- XPath AND Operator vs. XPath OR Operator
- XPath Axes Methods (Parent, Child, Self)
- XPath Axes (descendant, descendant-or-self)
- XPath Axes (following, following-sibling)
- XPath Axes (Preceding, Preceding-Sibling)

G.CSS Selector

- Introduction to CSS and CSS Selectors
- CSS Selector using Class Attribute
- CSS Selector with Multiple Attributes
- Direct Child or Sub-child Elements
- Next Sibling | Adjacent Sibling Combinator
- First-Child, Last-Child, Nth-Child, Nth-Last Child

H.WebElements

- Handle Dropdown
- Handle Checkbox
- Select Radio Button
- Handle Frames

- Handle Alert Popup
- Handle Multiple Windows
- Perform Mouse Hover
- Perform Drag and Drop
- Handle Resize Widget
- Automate Slider
- Perform Right Click
- Perform Keyboard Events
- Take Screenshot
- Handle Authentication Popup

I.Wait in Selenium

- Implicit Wait
- Explicit Wait
- Fluent Wait

J.TestNG

- Install TestNG in Eclipse IDE
- Write Test Cases Using TestNG
- TestNG Annotations (BeforeMethod vs. BeforeTest)
- Use Assertions in Selenium TestNG (SoftAssert vs. HardAssert)

- Group Test Cases in TestNG (Grouping)
- Create Test Suite in TestNG
- Skip Test Cases in TestNG
- TestNG Annotations (BeforeGroups, BeforeClass)
- TestNG Annotations (BeforeSuite and AfterSuite)
- Data Provider in TestNG (Data Driven Testing)
- Use Data Provider in TestNG Selenium
- TestNG Listeners

K. BDD Framework with Cucumber

- Agile Testing
- Behavior Driven Development (BDD)
- Advantages and Limitations of BDD
- Cucumber Fundamentals
- Gherkin Syntax in Cucumber
- Step Definition for Cucumber Feature File
- Advantages of Cucumber
- Implementing BDD Framework using Cucumber

L. Develop Test Automation Framework

- What is a Framework?

- Types of Framework
- Data-Driven Framework
- Keyword-Driven Framework
- User-Defined Keyword-Driven Framework (with implementation)
- Execute Test Scripts from the Framework

M. Project Execution

- Automate any Application
- Test Automation Requirements Description
- What Next? How to Start?
- High-Level Framework
- Configurability—No to Hard-Coding
- Modularity—Re-Use and DRY (Don't Repeat Yourself)
- Test Data Management
- Logging and Reporting

N. Git

- Downloading and configuring Github
- Basic Git Commands
- Working with Repositories
- Setting up Repositories

- Local and Remote Repositories
- Create repository and cloning projects
- Committing and Syncing the code
- Reverting and Rolling Back the Code
- Branch and Merging Concepts and Implementation
- Stashing Changes
- Resolving Conflicts

O. Jenkins

- About Jenkins
- History of Jenkins
- Splitting of Projects
- What is Continuous Integration?
- Installing Jenkins
- Creating a Simple Job
- Integrating Jenkins to the Project

P. SQL

- Introduction to SQL
- SQL Syntax
- SQL Select, Distinct, Where
- SQL And, Or, Not

- SQL Order By
- SQL Insert, Update, Delete
- SQL Min and Max
- SQL Count, Avg, Sum
- SQL Like
- SQL Wildcards
- SQL In
- SQL Between
- SQL Aliases
- SQL Joins
- SQL Union
- SQL Group By
- SQL Having
- SQL Any, All
- SQL Case
- SQL Operators
- SQL Create, Drop, Alter Table
- SQL Constraints
- SQL Not Null
- SQL Unique
- SQL Primary Key, Foreign Key
- SQL Views
- SQL Data Types

Q. Unix Basic

R. Manual Mobile Testing

S. Basics of API testing

T. How to test chatGPT or AI application

U. Resume preparation

V. Mock interviews



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