
Software Testing: Software Training Employability Programme

Duration: 300Hours

Prerequisites

- There are no Pre-requisites for this course.
- A Basic Knowledge of Programming Language is Advantageous.

Basic Foundation Course

1. Programming Basics

- Fundamentals of Computer
- Understanding Applications
- Using Windows Explorer & File Structure
- Number Systems
- Application Software

2. C Language

- Introduction to C
- Keywords, Constants and Variables
- Data Types in C
- Operator and Expressions
- Control Structure
- Functions
- Pointers
- Arrays
- Structure
- String Handling
- Preprocessor Directives
- File Management in C
- Dynamic Memory Allocation

3. Object Oriented Concepts using C++

- Introduction to OOPs
- Beginning with C++
- Class, Objects Basics
- Constructor, Data Members
- Operator Overloading
- Inheritance
- Polymorphism
- Overriding

4. Operating System & Networking

- Need for operating system
- Functions of Operating System
- Process Management
- Memory Management
- File Management and
- Device Management
- Types of operating system
- TCP/IP fundamentals
- Networks and computer networks

- 2 tier, 3 tier and n-tier architecture

5. Linux Foundations

- Introduction to UNIX and its flavors
- UNIX architecture
- File System
- User and Group Policies
- Unix general commands
- Concept of Files and Directories in Unix
- File Permission and related commands
- Filter Commands and their options
- Vi Editor

6. Introduction to Database Management Systems

- Introduction to Database
- DBMS, RDBMS, ORDBMS
- DDL, DML, DCL, TCL
- Data types
- SELECT Statement
- Restricting and Sorting Data
- Aggregating Data using Group Functions
- Manipulating Data
- Sub queries
- Important Functions
- Joins and different types

Basic Software Testing

Manual Testing

1. Fundamentals of Testing

- What is Software Testing?
- What is Software Bug
- Testing Principles
- When to Start/Stop Testing?

2. Application Architecture

- Desktop/Stand-alone Environment
- Client Server Environment
- Web Based Environment

3. SDLC and STLC

- SDLC Phases
- Various SDLC Models
- Waterfall Model
- Iterative and Incremental model
- STLC Phases
- Types of Testing
- Methods of Testing
- Static and Dynamic Testing

4. Verification and Validation

- Verification
- Methods of Verification
- Validation
- Levels of Testing
- V Model

5. Functional and Non Functional testing

- Functional Testing
 - Unit Testing
 - Integration Testing
 - System Testing
 - User Acceptance Testing
 - Regression Testing
 - Retesting
- Non Functional Testing
 - Performance Testing
 - Load Testing
 - Stress Testing
 - UI and Usability Testing
 - Security Testing
 - Portability Testing
 - Compatibility Testing
- Other Special Testing Types

6. Test Management

- Test Plan Template
- Usecase Testing
- Scenario Testing
- Testcases& Test Data
- Testcases Template
- Test Design Technique

7. Defect Management

- What is Defect/Bug?
- Reason for Defects in Software
- Defect Tracking System
- Defect Life Cycle
- Attributes of Defect

8. Bugzilla Defect Tracking Tool

- How to Report a Bugs
- Priority of Bugs
- Report Generation

9. Quality Center (QC-Overview)

- Opening QC
- Requirements tab
- Test Plan tab
- Test lab tab
- Defects tab
- Report and analysis of result

Automation Testing Tool (SELENIUM)

Core Java

1. Introduction to Java

- History of Java
- Features of Java

2. Overview of Java

- OOP's Concept
- Data types and Variables
- Control Structures
- Strings, Arrays

3. Objects and Classes

- Object, Classes and Methods
- Method Overloading
- Constructors
- Object class

4. Inheritance

- Types of Inheritance
- Method Overriding
- Dynamic method dispatch

5. Packages and Interfaces

- Defining Packages
- Extending Interfaces

6. Exception Handling

- Fundamentals of Exception Handling
-

- Exception types
- Try and Catch and finally
- Throw ,throws
- Custom Exception

7. Inner Class and Wrapper classes

- Inner Classes
- Static Nested Classes
- Wrapper Classes
- Anonymous Inner Classes

8. String Handling

- Creating Strings
- String handling methods
- String Buffer and String Builder

9. Input and Output in Java

- Byte streams&Character streams
- File
- Serialization

10. Collections Framework

- Collection Interfaces and Classes
- Iterators
- Comparators

Basic Selenium

1. Introduction to Automation Testing

- What is Automation Testing?
- Which Test Cases to Automate?
- Different Automation tools
- Automation challenges & Mitigations

2. Introduction to selenium

- What is selenium?
- History and various versions of selenium
- Advantages of using Selenium over other tools.
- Selenium components

3. Selenium-IDE

- Introduction
- IDE Features
- Building & Running Test Cases
- Building and Running Test Suites

4. Selenium Web Driver 3.0

- Why Selenium Web Driver
- What is a Driver
- Automation Setup for Selenium Web Driver
- Configuration of Selenium Jar using Eclipse

5. Identification of Locators

- Tools to identify elements/objects
- Setup for Firebug, Firepath
- Different methods of finding element
 - By ID, By name, class
 - By Xpath, By Tag name
 - By Link text
 - By CSS
 - Using Effective X-path

6. Selenium Commands

- Various types of operation that can be performed on any elements and how to use them.
- Browser Commands, Navigation Commands
- Working with different browser
- Handling Checkbox, RadioButton
- Dropdown and Select Operations
- Handling Keyboard Event and Mouse Event
- Alert &Pop Up Handling
- Handling iFrame/Frame
- Multiple Window Handling
- Capturing Screen shots

7. Handling WebTables

- What is WebTables
- Extracting values from WebTables
- Static and Dynamic WebTables

8. Wait Commands in Selenium

- ImplicitWait
- Explicit Waits,Expected Conditions

Advanced Selenium

1. Framework Designing

- What is Framework
- What is a Framework?
- Different Types of Framework.
- How to Design a framework?
- Data Driven Framework using Excel
 - Downloading and configuration of Apache POI
 - Executing Testcases from Excel

2. TestNG Framework

- Test NG & TestNG features
- How to use TestNG and Junit in Selenium
- Advantages of TestNG over Junit
- How to integrate TestNG with Eclipse
- Test NG Annotations
- TestNG Reporting

3. POM Framework

- Advantages of POM
- How to implement
- Using Page Object and Page Factory

4. Selenium Integration with Maven

- How to create a maven project in Eclipse
- Maven Build Cycles.
- How to compile and Run tests using Maven

5. Cucumber Framework

- What is BDD
- Cucumber implements BDD
- Preparing Features File
- Writing a step definition
- Writing Runner Class
- Given, When, Then, And, But annotations and usage in features class
- Passing parameters in Step Functions
- Using regular expression in step
- Parameterize complete scenario using features class
- Datatable in Cucumber and its implementation
- Using Assertions to report failure
- Running simple feature/Step scenario
- Building a simple test case
- Executing project from eclipse
- Generating Cucumber reports
- Background and Pending Exception
- Parameterizing/repeating test cases from feature classes

6. Continuous Build Integration tools- Jenkins

- What is Jenkins and how to use it
- How to integrate Jenkins with Eclipse

ProjectWork

- ❖ Complete Testing of HRMS
 - ❖ Automation Testing of web based application
 - ❖ Full Testing of Travel Management System
-

Aptitude & Reasoning

1. Quantitative Aptitude

- Number Systems
- LCM and HCF
- Percentages
- Profit, Loss and Discount
- Interest (Simple and Compound)
- Speed, Time and Distance
- Ratio and Proportion
- Probability
- Permutation & Combination
- Time and Work

2. Logical Reasoning

- Number and Letter Series
- Calendars
- Clocks
- Logical Sequence
- Blood Relations

3. Algebra

- Linear Equations
- Calendars
- Clocks
- Logical Sequence
- Blood Relations

Soft Skills

1. Self-Analysis

- Know yourself
- Personality types
- Areas of interest

2. Self-Discovery

- SWOT Analysis – strength, weakness, opportunities, threats

3. Goal Setting

- Short-term plan
- Long-term plan
- Effective Time Management

4. Effective Self Presentation

- Personal grooming
- Dressing,
- Hygiene

5. Effective Communication

- Verbal – Language
- Voice modulation - Tone, Pitch
- Clarity of Speech
- Listening skills
- Written communication – general business correspondence

6. Email Etiquette

7. Body Language

- Understanding non-verbal communication
- Postures, Gestures, Eye contact

8. Resume Writing

9. Tips for Group Discussion

10. Handling Telephonic interview

11. Mock – Technical interview

12. Mock – Personal interview (PI)

13. Office Etiquettes and Mannerisms
