

QA Full Stack



Manual Testing

COURSE CURRICULUM

Introduction to Software Application and Fundamental of Testing

- Overview of Software Application Testing
- Why is testing necessary
- Software testing Principles
- Psychology of software testing
- Causes of Software Defects
- Terms used in Software Testing [Defect, Error, Bug, Failure etc..]
- Overview of SDLC [Software Development Life Cycle]
- Overview of Project Execution Lifecycle
- Overview of Project Lifecycle

Models of Software Engineering

- Waterfall Model
- Prototype model
- Spiral Model
- Incremental Model
- Iterative Model
- RAD (Rapid Application Development)
- V Model
- Agile Model

Quality Management System

- What is Quality Management System and It's need
- What is Quality Assurance
- What is Quality Control
- Review process and Types of Review Process
- Different Roles and Responsibilities of reviewers
- Walkthrough
- Inspection
- Code Review
- Peer Review
- Verification Vs Validation
- Static & Dynamic Testing techniques
- Quality Standard CMM, ISO, 6Sigma

Software Testing methodology

- White Box
- Black Box
- Grey Box

Levels of Software Testing

- Unit Testing
- Integration Testing
- System testing
- UAT

Testing Types/Approaches

- Smoke Testing
- Sanity Testing
- Re-Testing
- Regression Testing
- Ad-hoc and Exploratory testing
- Monkey & Gorilla Testing
- Alpha Testing
- Beta Testing
- Validation Testing
- Web Application Testing
- Accessibility Testing
- Recovery Testing
- System Compatibility
- Browser Compatibility Testing
- Cross Browser Testing
- Multiple Browser Testing
- Forward and backward compatibility
- Performance Testing
 - Load Testing
 - Stress Testing
 - Volume Testing
- Usability Testing
- Accessibility testing
- Security Testing
- Multilingual testing

Introduction of different Test Estimation techniques and Reporting techniques

- Test plans estimates and strategies
- Different test approaches
- Test progress, monitoring and control
- Configuration management
- Risk and testing
- Identifying test condition and design test cases
- Categories test design techniques
- Specification based or black box techniques
 - BVA
 - ECP
 - Decision table testing
 - State transition testing
 - Orthogonal array
- Structure based or white box testing techniques
 - Cyclomatic complexity
 - Basis path testing
 - CFG
 - Statement coverage
 - Branch coverage
 - Path coverage
- Experience based techniques
- Risk based Testing
- Choosing a test techniques
- Bug/defect lifecycle
- Defect Severity & Priority

Software Testing Life Cycle (STLC)

Practical session on Live/Inbuilt and real time Projects (Lab Session)

- Creation Of Test Plan
- Creation Of Test Scenarios, Test Cases
- Test case execution

- Bug tracking and reporting
- Implementation of testing optimization Techniques (ECP, BVA, Decision Table...)
- Overview of Test Metrics, creation and its importance
- Types of Test Metrics
- Traceability Metrics
- Test report preparation
- Test closure Report preparation

Real Time Process testing terminologies

- Test bed, Test Hardnesses, Test Suit, Test basis, Test artifacts, Deffirent Environment(DEV,Test, Production), Requirements Volatility, Stagging process, Build Process, Test Cycle, Re-spin, Test Efficiency, Hot fix, Patch,Base Line, Change request, Defect age, Defect clustering, Defect slippage, Impact Analysis,Defect root cause,Escalation process and more....

Agile Methodology

- Introduction to Agile Methodology &Agile Manifesto
- Overview of Different Agile methods
- When to Use Scrum vs. When to Use Traditional Methods
- Scrum Process
- Scrum Roles
- Scrum Team
- Time-Box Concept
 - Event 1: The Sprint
 - Event 2: Sprint Planning
 - Event 3: Daily Scrum
 - Event 4: Sprint Review
 - Event 5: Sprint Retrospective
- Product Backlog Grooming
- Scrum Artifacts
 - Artifact 1: Product Backlog
 - Artifact 2: Sprint Backlog
 - Artifact 3: Increment
 - Artifact 4: Definition of “Done”
 - Artifact 5: Monitoring Progress toward a Goal
 - Artifact 6: Monitoring Sprint Progress
- Agile Tracking, Scrum Meeting and Daily Stand-ups
 - Product Backlog Grooming

Agile Test Management and Bug tracking/Reporting with JIRA

- Introduction about Jira tool
 - What is an Issue?
 - What is a Project?
 - What is a Workflow
- Exploring the JIRA workspace
- Managing your user profile
- Navigating JIRA
- Creating an Issue
- Viewing Issues
- Editing Issues
- Transitions and Screens
- The Workflow Viewer
- Collaboration
- Search
- Detail View
- Configuring Filters
- Email Filter Results
- Standard & Custom Reports

Database Testing Introduction

- What is Database Application?
- Overview about database structure
- Introduction about deferent database types
- Understanding data storage
- Back end & front end Testing
- General Database Basics
- Essential elements needed for database testing
- writing test plan for database testing
- Organizing DB Testing approach
- writing test cases for database testing

Basic SQL

- Why should Test professionals know Structured Query Language?
- Writing the statement in SQL Plus
- Overview of DML , DDL, TCL,DCL
- DML : Insert , update , Delete , merge
- DDL : Create, Drop, Alter, Rename, Modify, Truncate
- TCL : Commit, Roleback, SavePoint

SQL Functions:

- Single Row Function / Multiple Row Function
- String Function , Number Function , Date and Time Function, General Function

Joining Tables

- Obtaining data from multiple tables
- Types of joins : Inner joins , Non-equi Join, Natural Join, ,Right outer join, Full outer Join

Operators: (data using Group Function)

- Arithmetic Operator
- Relational/Logical
- Like Operator

Constraints & View

- Not Null
- Unique
- Primary key

Aggregating data using group functions

- GROUP BY
- HAVING

Overview and concept Sub queries

- Single Row sub queries
- Multiple row Sub queries

Database Testing

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ISTQB Foundation Level Certification Training

COURSE CURRICULUM

Testing Fundamentals.

- Testing and Quality
- Testing Required Parts .
- Role of Testing in Software Development, Maintenance and Operations
- Software Systems Context
- Causes of Software Defects

Static Techniques

- Static Techniques and the Test Process
- Review Process
- Activities of a Formal Review
- Roles and Responsibilities
- Types of Reviews
- Success Factors for Reviews Static Analysis by Tools

Testing Principles

- Fundamental Test Process
- Test Planning and Control
- Test Analysis and Design
- Test Implementation and Execution
- Evaluating Exit Criteria and Reporting
- Test Closure Activities

Testing Throughout the Software Life Cycle Software Development Models

- V-model (Sequential Development Model)
- Iterative-incremental Development Models
- Testing within a Life Cycle Model

Test Levels

- Component Testing
- Integration Testing
- System Testing
- Acceptance Testing

Test Types

- Testing of Function (Functional Testing)
- Testing of Non-functional Software Characteristics (Non-functional Testing)
- Testing of Software Structure/Architecture (Structural Testing)
- Testing Related to Changes: Re-test and Regression Testing

Test Management

Test Organization

- Test Organization and Independence
- Tasks of the Test Leader and Tester

Test Design Techniques :

The Test Development Process

- Categories of Test Design Techniques
- Specification-based or Black-box Techniques
- Equivalence Partitioning
- Boundary Value Analysis
- Decision Table Testing
- State Transition Testing
- Use Case Testing

Structure--based or White-box Techniques

- Statement Testing and Coverage
- Decision Testing and Coverage
- Other Structure-based Techniques

Test Planning and Estimation

- Test Planning
- Test Planning Activities
- Entry Criteria
- Exit Criteria
- Test Estimation
- Test Strategy, Test Approach

Test Progress Monitoring and Control

- Test Progress Monitoring
- Test Reporting
- Test Control

Configuration Management Risk and Testing

- Project Risks
- Product Risks

Tool Support for Testing

Types of Test Tools

- Tool Support for Test Execution and Logging
- Tool Support for Performance and Monitoring
- Tool Support for Specific Testing Needs
- Tool Support for Static Testing
- Tool Support for Test Specification
- Tool Support for Testing
- Test Tool Classification
- Tool Support for Management of Testing and Tests

Effective Use of Tools:

Potential Benefits and Risks

- Potential Benefits and Risks of Tool Support for Testing (for all tools)
- Special Considerations for Some Types of Tools

Note- Complete preparation for ISTQB Foundation Level.

JAVA

Introduction to Java

- Introduction to Java Programming Language,
- Uses of Java language, Java Syntax Rules & Coding Standards,
- Java Environment Setup, Write & Execute first Java Program,
- And Write Java Programs using Eclipse IDE

Java Programming for Selenium

- Overview of Java Programming, Java Modifiers, Data Types,
- Variables, Operators, Flow Control, Arrays, String Handling,
- File Handling, Exception Handling, and Methods.
- Java OOPS: Inheritance, Polymorphism, Abstraction, and Encapsulation.

Java Program Structure and Syntax

- Java Programming Structure, Writing Comments,
- Declaring Methods, Declaring Variables,
- Declaring Constants, Print Statements, usage of Operators,
- Writing Conditional Statements, Writing Loop Statements and Calling methods

Java Conditional and Loop Statements

- Java Conditional and Loop Statements ,explains Types of Conditional statements in Java,
- Types of Conditions and usage of conditional statements.
- If statement and switch statements in Java with examples.
- Java loop structures, for loop, while loop, do while loop and enhanced for loop with examples.

Strings and Arrays in Java

- Strings and Arrays in Java, explains String handling in Java,
- Creating Strings, String Concatenation, and String Comparison.
- Array declaration, types of Arrays, print Array, copy Array,
- Array methods and Advantages & Disadvantages of Arrays.

Input Output Operations and File Handling

- Input and Output operations and File handling in Java,
- Explains reading different types of input and displaying output on the console.

Collections Framework

- Introductions of Collections
- Types of collections
- Generic -List, Dictionary, Stack and Queue
- Non Generic- ArrayList, HashTable, Stack and Queue

SELENIUM

Introduction of Selenium:

- What is Automation Testing
- Use of automation Testing
- Tools for Automation Testing
- Why automation is important for you career?
- What is Selenium.
- Advantage of Selenium.
- History of Selenium.
- Component of Selenium.
- Architecture of Remote Control.
- Architecture of WebDriver.
- Architecture of GRID.
- Differences between API's Vs GUI's.

Selenium IDE:

- Selenium IDE Introduction
- Record and Playback with Firefox and Chrome
- Debugging in Selenium IDE Script
- Introduction Katalone Studio
- Record and Playback through Katalone Studio

Set up Eclipse:

- Download and install java
- Download and start Eclipse
- Download and configure WebDriver java client

- Set up a project
- Create packages
- Create a First Java test case
- Import WebDriver Source file

WebDriver:

- WebDriver Interface
- WebElement Interface
- Launching Firefox browser

Browser & Navigation Commands:

- How to Open a URL
- Verify Page title
- Strategy to get the Page Source
- Difference between Close & Quit
- Ways to Navigate Back & Forward
- How to Refresh Page
- Another way of Navigating to specific Page

Locators:

- What are locators.
- HTML Basics.
- HTML language tags and attributes.
- ID, Name, Xpath, CSS etc.
- Difference between Absolute & Complete Xpath.
- Finding your first element.
- WebElement Commands.

Element Identification:

- Element Inspector in Mozilla, Chrome and IE
- Element locator tool for Firefox Locator
- Firebug&Fire Path Add-Ons in Mozilla
- Various HTML locator strategies
- XPath Helper Plug-in for Chrome
- Selection of Effective Xpath
- Handling Dynamic objects/ids on the page

Tables, Checkboxes & Radio buttons:

- Identify table rows and columns
- Extracting values from a cell
- Dynamically Identify Tables Data
- Select class in Selenium
- Drop Down Handle.
- Select multiple values from the list
- Select & Deselect operations by Index, Value & Visible Text.

Selenium Waits, Alert & Switch Windows:

- Implicit and Explicit waits
- How to use Expected Conditions with Waits
- PageLoadTimeout & SetScriptTimeout property
- Simple use of Thread Sleep
- Concept of Fluent Wait in Selenium
- WebDriverWait and its uses
- Different WaitUntil Conditions
- Ways to handle Simple, Confirmation & Prompt Alert
- Concepts of Set Interface in Java
- Difference between Window Handle & Handles
- Switching & Closing Windows, Tabs & Popup's
- Concept of window ID
- Extracting window IDs with Selenium Object reference
- JavaScriptExecutor Interface
- Captured Screenshot
- Cookies Handles

Action Class:

- What is Action Class & What can we do with Action Class
- Mouse Hover & Mouse Movement with Action
- Finding Coordinates of a Web Object
- Drag and Drop Action

TestNG Framework:

- What is TestNG
- Benefits and Features of TestNG
- How to download TestNG
- Annotations in TestNG
- How to run Test Suite in TestNG
- Groups in TestNG
- Depend on in TestNG
- Test Case sequencing in TestNG
- TestNG Asserts
- TestNG Parameters
- Multi Browser testing in TestNG
- Parallel testing in TestNG
- Extent Report API

Cucumber :

- Introduction Cucumber
- Using Cucumber
- Gherkins Language
- Creation of feature files and Step Definition
- Introduction TDD and BDD
- TDD Vs BDD
- Version Control (GitHub Introduction)

Log4j Logging:

- Log4j Introduction
- Download Log4J
- Add Log4j Jar
- Test Case with Log4j
- Log4j Log Manager
- Log4j Appenders
- Log4j Loggers

Database Connections:

- Database connection
- Database Testing in Selenium using MySql Server

Automation Framework:

- What is Automation Framework
- Features of Automation Framework
- Benefits of using Automation Framework
- Different types of Automation Framework
- What is Data Driven Framework
- What is Modular Driven Framework
- What is Keyword Driven Framework
- Apache POI API
- POI Setup and Configuration
- Read and Write Excel file with Apache POI
- POM (Page Object Model)
- Page Factory

Maven:

- Maven Introduction
- Install Maven in Eclipse IDE
- Install Maven on Windows
- Install Maven on Mac

- How to Create a New Maven Project
- How to Create a New Maven Project in Eclipse
- Configuration of POM & set multiple builds

Jenkins:

- Jenkins Introduction.
- Installation & configuration of complete Jenkins setup.
- Scheduling of Maven build & set multiple builds in Jenkins.
- Overview of integration between Jenkins & GitHub.
- Overview of integration between Jenkins & AWS.
- Selenium Integration with Jenkins.

GitHub

- Introduction of GitHub and Selenium integration.
- Installation of git binaries
- Github set up in eclipse IDE
- Building repository on git
- Test prepare in selenium using Github

Automation Test Script Development (Project Based)

- Analyzing Manual Test Script
- Automation Test Script Development strategy
- Development Test Script according to manual script

Interview Preparation :

- Technical Interview Preparation
- Mock interview Preparation
- HR Session
- Project implementation

WEB SERVICES & REST API TESTING

Introduction of Web Services

- What is Web Services?
- Explaining Types of Web Services SOAP and REST.
- What is wsdl ? Importance of it in Web Services.
- Difference between WSDL and SOAP Protocol.

Exploring SOAP UI Tool Basic Feature

- SOAP UI Installation / Documentation.
- Calculator Web Service Example
- Creating Test Suite and Test Cases
- Local WebServices installation for Practice.
- Explaining WebServices operation in details.

Web Services Testing(Manual) with SOAP UI

- Basics Assertion for Test Validation.
- Advance Assertion for validating responses.
- Strategies to use Xpath Assertion in test
- Properties Access – Data Driven Strategies
- Accessing Properties from Test Cases, Suit and Project Level
- How to send value from response to another requests property transfer.

WebService Automation Testing in SOAP UI

- Introduction to Groovy Script Test Setup.
- Importance of Test Runner and Context Variable.
- Test runner method for get and set property.
- Accessing and Updating the properties through Groovy method.

- Parsing the xml request and response with holder Application.
- Triggering the SOAP Request through Groovy Code.
- Automate the Services(Practice).
- Validating the Service response with Assertion.

REST API Testing (Manual) With SOAP UI

- REST API Concept
- REST API – Types of HTTP Methods
- Practical Example on GET and POST
- Important Notes on Google Map API
- Sample code Google Add Place Download.
- REST API Test Case building on SOAP UI
- Exercise: Datadriving from custom properties.
- Exercise: Property transfer usage in REST Example.

REST API Automation with SOAP UI

- JSON Script Assertion window – Automation
- Parsing the JSON response for API Validation
- Example on REST API Automation with JSON as Response
- Example on REST API Automation with XML as Response

REST API JSON Assertion and Validation

- Flickr API Introduction
- JSON path extraction from responses.
- JSON Assertion on parsed responses.
- Advance Example on JSON Assertion.

End to End Framework Design

- Framework Design Plan
- Understanding Preparing API Test from the functional document
- Building Rest API project in SOAPUI
- Create Test Cases from the defined API
- End to End Testing on Library API
- Installation Eclipse and Java for API automation testing
- Creation of Java API project from Framework
- WSDL project concept for java test setup
- TestNG Integration to the Java API Tests.
- Different combination of WSDL API
- TestNG.xml file for one single Trigger point to all test.
- TestNG Command
- Command to Trigger TestNG Java API Test
- HTML Report and Jenkins installation.

SOAP UI Protocol extra feature

- Basics of Pro version
- Data Sources
- Data Sink
- DataGen Type
- Test Case Debugging, Breakpoint
- Reporting Technique
- Jasper Report and Web Recording

Security Testing with SOAP UI

- List of Security Test
- Security Test Case.
- Security Testing – Practical example

Database Testing with SOAP UI

- Database Concept
- Creating Database
- SOAP UI JDBC connection
- SQL Quatries Testing with SOAP UI
- SQL Builder- SOAP UI Pro

Load Testing on REST API

- Performance Testing Tool used for Testing REST API
- Putting Load on REST CALL

FIDDLER API & PERFORMANCE AND SECURITY TESTING

Web session manipulation .

- Quick execution.
- Simulate original HTTP(s) traffic.
- Compose HTTP(s) requests.
- Setting breakpoints.
- Manipulate any HTTP(s) request or response.

Performance Testing.

- Timeline for performance analysis
- Simulate HTTP compression
- Flagging performance bottlenecks
- Taking advantage of HTTP caching
- Profiling the performance of your web app.

Security Testing.

- Fiddler security add-ons.
- Automate SSL decryption.

HTTP/HTTPS Traffic Recording.

- Archive and playback recorded traffic
- Filter captured traffic.
- Deep dive into session metrics.
- Capture all HTTP(s) traffic.

Web Debugging.

- Decrypt and decompress web sessions.
- Analyzing session data.
- Debug traffic on any system.
- Debug traffic from any client and browser.

Customizable Free Tool.

- Extending Fiddler with Fiddler Script and .NET code.
- Fiddler extensions and add-ons.
- Adding inspectors.
 - Request Inspectors.
 - Response Inspectors.
- Creating rules.

Interview Question and Preparation for placement

- Technical Interview Preparation
- Mock Interview preparation
- HR Session

Partners :



Java



development | consultancy | training

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Near Honda Showroom,
Sec.-14, Gurgaon (Haryana)
☎ 70-70-90-50-90

GHAZIABAD

1, Anand Industrial Estate,
Near ITS College, Mohan Nagar,
Ghaziabad (U.P.)
☎ 70-70-90-50-90

PITAMPURA (DELHI)

Plot No. 366, 2nd Floor,
Kohat Enclave, Pitampura,
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