SOFTWARETESTING

COURSE BROCHURE&SYLLABUS

Duration-60hrs

What is Software Testing?

Software testing is the process of evaluating and verifying that a software product or application does what it is supposed to do. The benefits of testing include preventing bugs, reducing development costs and improving performance.

Syllabus

Overview

- Testing Terminology
- What is Testing?
- Who does Testing?
- When to Start Testing?
- When to Stop Testing?
- Software Development Life Cycle(SDLC)
- Software Test Life Cycle (STLC)
- Understanding of QA, QC and Testing
- Principles of Testing

Documentation

- Test Plan
- Test Scenario
- Test Case
- Traceability Matrix
- Test Case Design Techniques
- Estimations

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Testing Levels

- Functional Testing
- Unit Testing
- Integration Testing
- System Testing
- Regression Testing
- Acceptance Testing
- Non-Functional Testing
- Usability Testing
- Security Testing
- Portability Testing

Testing Methodology/Approach\

- Waterfall
- Prototype
- Spiral
- Incremental(Agile methodology and Scrum Framework)
- V-Model Verification vs. validation
- Advantages and Disadvantages of each software development lifecycle
- Difference between Functional and Non-functional testing

Defect Life Cycle

- Bug Life cycle
- How to Prepare Bug template?
- Bug Tracking tool

InterviewPreparation

- Globalization Vs Localization Testing
- Test Plan V/s Test Strategy
- Re-testing Vs Regression Testing
- Test Scenario Vs Test Condition
- Interview Questions
- Presentations
- Resume building
- Placement activities

SQL Syllabus Overview.

- What is SQL?
- SQL Process
- SQL Commands

RDBMS Concepts.

- What is RDBMS?
- SQL Constraints
- Data Integrity
- Database Normalization.
- Database–First Normal Form (1NF)
- Database–Second Normal Form(2NF)
- Database–Third Normal Form (3NF)

RDBMS Databases

- MySQL
- MSSQL Server
- ORACLE .
- MSACCESS.

Syntax

- Various Syntax in SQL
- SQL – Data Types
- SQL–Operators
- What is an Operator in SQL?
- SQL Arithmetic Operators.
- Arithmetic Operators–Examples
- SQL Comparison Operators
- Comparison Operators–Examples.
- SQL Logical Operators
- Logical Operators–Examples

Expressions

- Boolean Expressions.
- Numeric Expressions
- Date Expressions.

AND & OR Conjunctive Operators

- The AND Operator
- The OR Operator

Constraints

- SQL-NOT NULL Constraint
- SQL-DEFAULT Constraint
- SQL-UNIQUE Constraint
- SQL – Primary Key
- SQL – Foreign Key
- SQL–CHECK Constraint
- SQL– INDEX Constraint.
- Dropping Constraints
- Integrity Constraints.

Using Joins

- SQL-INNER JOIN
- SQL–LEFTJOIN
- SQL-RIGHT JOIN
- SQL–FULLJOIN
- SQL–SELFJOIN
- SQL– CARTESIAN or CROSSJOIN.

UNIONSCLAUSE

- The UNIONALL Clause
- SQL– INTERSECT Clause.
- SQL– EXCEPT Clause

SubQueries.

- Sub queries with the SELECT Statement
- Sub queries with the INSERT Statement
- Sub queries with the UPDATE Statement
- Sub queries with the DELETE Statement

Java Course Content
Introduction to java

- Java Installation
- Variables
- Re-initialization
- Post- Increment, Post Decrement
- Pre-Increment, Pre-Decrement
- Decision making statements
- IF-ELSE
- Switch-case

Loops

- For loop
- While loop
- Do while loop
- Enhanced for loop
- Methods
- Method Overloading
- Constructor
- Constructor Overloading

OOPS Concepts(Object Oriented Programming System)

- Inheritance
- Method Overriding
- Type Casting
- Polymorphism
- Abstraction
- Abstract Class
- Interface
- Encapsulation
- Packages &Import
- Design Pattern

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COREJAVA

- Object Class
- String Class
- Arrays
- Boxing & Unboxing
- Wrapper class
- Collection framework &wildcards
- Exception Handling
- File Handling
- Multithreading

Selenium Automation Testing Syllabus

Overview

- Introduction to Automation
- What is automation testing
- Advantages of Automation Testing
- How to learn any automation tool
- Types of Automation tools

Introduction to Selenium

- What is Selenium
- Use of Selenium
- Features of selenium
- Difference between Selenium and QTP

Selenium Components

- Selenium IDE
- Selenium Core
- Selenium Grid

Selenium IDE

- Selenium Overview
- Selenium IDE Introduction
- Downloading and Installing Selenium IDE
- Recording and Running a Simple Test
- Selenium IDE –Features
- Installing Useful Tools for Writing Tests
- Selenium Concepts
- Selenium Commands
- Verifying Page Elements–Assertions and Verifications
- Wait Commands
- Object Identification
- Element Locators
- Regular Expression patterns
- Selenium Test Runner
- Using Regular Expression sin Selenium IDE
- Creating Selenium Test Suites
- How to run the recorded script against other browsers
- Why companies are not using recording tools
- Limitations of Selenium IDE

HTML Concepts

- HTML Introduction
- Header, Body and footer Elements
- Textbox,radiobutton,checkbox,dropdown,images,browse,tab,etc.explanation

Fire Bug, X path and CSS

- Introduction to Firebug
- Downloading and installing of Firebug
- Downloading and installing of x path
- How to identify the x path for an particular element
- Identifying objects using CSS

How to use Test NG and J unit in Selenium

- Introduction to Test NG
- Why Test NG
- Setting up Test NG
- Working with Test NG
- Advantages of Test NG over J unit
- Exploring Test NG Features
- How to Use Test NG Annotations
- Data Driven Testing Test NG
- Test NG Execution Report
- Test NG Results output folder walk-through
- Test NG Reporting features

Automation Framework

- What is Framework
- Types of Frameworks
- What is modular framework
- What is Data Driven framework
- What is Keyword driven framework
- What is Hybrid framework
- Use of Framework
- How to develop the framework
- Integration of the framework
- How to execute the scripts from framework

Advanced Selenium2.0–Webdriver

- Introduction to selenium2.0
- Advantages of web driver
- Web Driver v/s RC
- Architecture of Web Driver and RC
- Web Driver IDE
- Installation/Configuring Eclipse for Web Driver
- Identifying the elements in Web Driver Using Id, Name, X path, Domand CSS
- Working with Different drivers like Html Unit driver, Firefox Driver etc…
- Creating the generic scripts in Web Driver
- Creating the scripts by using functions
- Web Driver Client Libraries
- Web Driver commands with examples
- Working with excel sheets using Web Driver
- Web Driver with Test NG/ J unit

PART 1 – Manual Testing

Introduction to Software Testing

1. What is Software Testing
2. Why Software Testing
3. Benefits of Software Testing

Software Development Life Cycle (SDLC)

1. Phases of SDLC

Types of SDLC Models

1. Waterfall Model
2. Prototype Model
3. Spiral Model
4. V - Model
5. Agile Model

Software Testing Methodologies

1. Black Box Testing
2. White box testing

Types of Testing

Functional Testing

1. UI Testing
2. Functional Testing
3. Integration Testing
4. System Testing
5. Smoke Testing
6. Sanity Testing
7. Retesting
8. Regression Testing
9. Ad hoc Testing
10. User Acceptance Testing

Non-Functional Testing

1. Performance Testing
2. Security Testing
3. Usability Testing
4. Compatibility Testing

Test Scenarios and Test Cases

1. How to create a Test Scenario
2. Test Scenarios Template
3. Sample Example of Test Scenarios
4. What is Test case
5. Test Case Template
6. How to write Test Case
7. Writing Test Cases based on a sample application

Test Case Design Techniques

1. Boundary Value Analysis
2. Equivalence class Partitioning
3. Decision Table Testing
4. State Transition Testing
5. Error Guessing

JIRA Tool

1. What is JIRA tool
2. How to create – Epic, Story, Subtask, Backlog
3. Steps to Create Test Cases in JIRA using Zephyr Plugin
4. How to create test cycles in JIRA
5. How to change test case status in JIRA

Bug/Defect Management

1. What is Bug/Defect
2. How to raise bug in JIRA tool
3. Defect Report – Key Fields
4. What is a bug/defect lifecycle in software testing?
5. Difference between Defect /Bug/Error/Failure
6. Severity & Priority

Agile Methodologies

1. Introduction to Agile
2. Agile Frameworks– Scrumor Sprint, Kanban, Extreme Programming
3. Agile Artifacts
4. Key Roles in Agile – Product Owner, Scrum Master and Development team
5. Agile/ScrumCeremonies - Sprint Planning, Daily Stand Up, Backlog Grooming, Sprint review, Sprint Retrospective
6. Benefits of Agile
7. Agile vs Traditional (Waterfall) Model

Scrum Roles

1. Roles and Responsibilities of Product Owner
2. Roles and Responsibilities of Scrum Master
3. Roles and Responsibilities of Development team

Testing Roles and Responsibilities

1. Software Test Engineer Responsibilities
2. Sr. Software Test Engineer Responsibilities
3. Test Lead Responsibilities
4. Test Manager Responsibilities

Software Testing Life Cycle – STLC

1. Requirement Analysis
2. Test Planning
3. Test Case Development
4. Test Environment Setup
5. Test Case Execution
6. Test Cycle Closure

Requirements Traceability Matrix

1. Purpose of RTM
2. Sample RTM Format

Entry and Exit Criteria

1. What is Entry & Exit Criteria
2. Why Entry & Exit Criteria Are Important

SQL

1. Introduction to SQL
2. Data Definition Language: CREATE TABLE, ALTER TABLE, DROP TABLE
3. Data Manipulation Language: SELECT, INSERT, UPDATE, DELETE
4. Basic SQL Commands: SELECT, FROM, WHERE, ORDER BY
5. SQL Aggregate Functions: COUNT(), SUM(), AVG(), MAX(), MIN()
6. Grouping Data: GROUP BY, HAVING
7. Operators: AND, OR, NOT, =, >, <, >=, <=,!=, +, -, *, /
8. Constraints: PRIMARY KEY, FOREIGN KEY, UNIQUE, NOT NULL
9. JOINS: INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL OUTER JOIN, INNER JOIN, SELF JOIN

Application Programming Interface(API)

1. What is an API?
2. HTTP Methods: GET, POST, PUT, DELETE, PATCH
3. HTTP Response Status Codes

Postman

1. Installing and setting up Postman
2. Creating a new request
3. Sending a simple GET request
4. Understanding request & response sections

Working with APIs in Postman

1. GET requests with query/path params
2. POST with JSON body
3. PUT and DELETE requests

Authentication & Authorization

Sample Project Practice

1. Writing Test Cases based on a sample application
2. Executing test cases and reporting bugs

Interview Preparation

1. Most asked Manual Testing Questions
2. Mock Interview