

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 life cycle
- Difference between Functional and Non-functional testing

## Defect Life Cycle

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

## Interview Preparation

- 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

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## 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
- MS SQL Server
- ORACLE .
- MS ACCESS.

## 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

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## 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 – LEFT JOIN
- SQL - RIGHT JOIN
- SQL – FULL JOIN
- SQL – SELF JOIN
- SQL – CARTESIAN or CROSS JOIN.

## UNIONS CLAUSE

- The UNION ALL Clause
- SQL – INTERSECT Clause .
- SQL – EXCEPT Clause

## Sub Queries.

- Subqueries with the SELECT Statement
- Subqueries with the INSERT Statement
- Subqueries with the UPDATE Statement
- Subqueries 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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## CORE JAVA

- Object Class
- String Class
- Arrays
- Boxing & Unboxing
- Wrapper class
- Collection framework & wild cards
- 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

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## Selenium Components

- Selenium IDE
- Selenium Core
- Selenium RC
- Selenium Grid
- Selenium 2.0 – Web Driver

## 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 Expressions in 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
- Text box, radio button, check box, drop down, images, browse, tab, etc. explanation

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## Fire Bug, Xpath and CSS

- Introduction to Firebug
- Downloading and installing of Firebug
- Downloading and installing of xpath
- How to identify the xpath for a particular element
- Identifying objects using CSS

## How to use TestNG and Junit in Selenium

- Introduction to TestNG
- Why TestNG
- Setting up TestNG
- Working with TestNG
- Advantages of TestNG over Junit
- Exploring TestNG Features
- How to Use TestNG Annotations
- Data Driven Testing TestNG
- TestNG Execution Report
- TestNG Results output folder walk-through
- TestNG 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

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## Advanced Selenium 2.0 – Web driver

- Introduction to selenium 2.0
- 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, Xpath ,Dom and CSS
- Working with Different drivers like HtmlUnit 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 TestNG / Junit

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