

SOFTWARE TESTING.

Module: 1 Foundation (Core Java).

Module: 2 Databases (SQL).

Module: 3 Specializations (Manual Testing and Automation Testing).

Module: 4 Projects.

Module: 1. Foundation (Core Java)

Objectives:

Core Java training is a foundational course that imparts the fundamental knowledge of developing code using Java programming language. Core Java has wide range of open source libraries and frameworks. Develop codes in Java implementing object-oriented concepts. Utilize the advance class features including inheritance, polymorphism, overloading, overriding, interfacing, abstract classes and more to develop efficient and reusable codes. Create programs using generic collections.

Course outline

Introduction of core java, What is java, JVM ,JRE,JDK, Java for loop, While loop do while, break, continue, OOP's concepts, Objects and Class ,method overloading and overriding .

Module: 2. Databases (SQL)

This course provides the essential SQL skills that allow developers to write queries against single and multiple tables, manipulate data in tables, and create database objects. Students learn to control privileges at the object and system level. This course covers creating indexes and constraints, and altering existing schema objects. Students also learn how to create and query external tables. Students learn to use the advanced features of SQL in order to query and manipulate data within the database, use the dictionary views to retrieve metadata and create reports about their schema objects. Students also learn some of the date-time functions available in the Oracle Database.

Course Outline

Retrieving Data Using the SELECT Statement , Restricting and Sorting Data, Using Single-Row Functions to Customize Output ,Using Conversion Functions and Conditional Expressions, Reporting Aggregated Data Using the Group Functions. Displaying Data from Multiple Tables ,Using Sub queries to Solve Queries ,Using the Set Operators ,Manipulating Data ,Using DDL Statements to Create and Manage Tables, Creating Other Schema Objects.

Module: 3 Specialization (Manual Testing, Automation Testing & Project)

Manual Testing.

Introduction to testing. Verification vs validation. Types of Applications. Probabilities of getting an error in an application. SDLC – Software Development Life Cycle. Models- Waterfall, Prototype, Spiral, Incremental Agile methodology and Scrum Framework V-Model. Advantages and Disadvantages of each SDLC models. Principles of Testing. STLC –Software Testing Life Cycle. Difference between Test case, Use case and test scenarios.

How to prepare test case template? Difference between Error, bug, defect and failure. Test Case Design technique. Boundary value Analysis. Equivalence Partitioning. Decision Table. State Transition Diagram. Use Case Testing. Bug Life cycle. How to Prepare Bug template? Creating defects report. Bug Tracking tool. Types of Testing. Difference between static and Dynamic testing. Difference between Functional and Non-functional testing. Black box testing. Integration testing. Big Bang Integration. Incremental Approach – Top Down, Bottom up and Hybrid System Integration Testings. User Acceptance Testing. Entry Criteria and Exit Criteria. Test Environment and Test data preparation. White box testing. Flow graph notations. Statement coverage. Branch Coverage. path coverage. Cyclometric complexity. RTM(requirement traceability matrices)

Quality

Concept of quality, quality definition, quality views, Quality attributes for a software, role or tester in achieving the software quality, Quality management system, quality assurance, quality control

Introduction to software testing metrics

Skill needed for software tester: Technical skills, behavioral skills, career path.

Manual Projects

Read SRS and understand application functionalities, Identify scenarios and develop test cases based on the same, Execution of test cases and defects reporting, Post mortem reviews

Automation Testing (QTP-UFT)

Introduction to QTP: What is Automation Testing? When Automation is needed? When Automation is not needed? Advantages of Automation Testing. Disadvantages of Automation Testing. What are the popular Automation Tools in the industry? What is the difference between various Automation Testing Tools? Basic Components in QTP ,Add in Manager. How does QTP works/Object recognition concept. Record a sample Test. Understand the Script. Execution of a Test. Enhancement of recorded script.

Framework in QTP: What is Framework. Types of Framework. Linear Scripting. Structured Scripting. Data Driven. Keyword Driven. Modular Driven. Hybrid

Object Repository: QTP Classes and Objects. Details of OR. Types of OR. How to create OR. Test Object Vs Run time Object. Configuring Object identification. Object Spy. Object Properties. Logical Name. Mandatory/Assistive properties /Ordinal identifier. Smart Identification. Compare and Merge options

Recording Modes: Types of Recording Modes. Normal Recording Mode. Analog Recording Mode. Low Level Recording Mode.

Checkpoints: What is Checkpoint. Why Checkpoint is needed. Types of Checkpoint. Different ways of Inserting Checkpoints.

Parameterization: What is Parameterization? Why Parameterization is needed. Types of Parameterization. How to access data from Global Sheet and Local sheet.

Actions: What is Action? Types of Actions. Methods to import an Action. Call to New.Call to Existing. Call to Copy.

Regular Expression: Regular Expression. When to Use Regular Expression? How to use Regular Expression in Descriptive Programming?

Recovery Scenarios: Handling the exception using Recovery Scenario Manager. Usages of Recovery Scenario Wizard. Completing a Recovery Scenario. Creation and Association of .QRS file for Recovery Scenario

Step Generator: What is Step Generator. How to Generate script using Step Generator. Advantages & Disadvantages of using step Generator.

Virtual Object: What is Virtual Object? When Virtual Object is used? Limitations of Virtual Object

Debugging: When Debugging is used.Step Into. Step Out.Step Over.

Descriptive Programming: What is Descriptive Programming? Types of Descriptive Programming. Working with DP Object. Working with Object Collection.

Selenium with Core JAVA:

Introduction: Introduction of selenium. Selenium components. How differs from other automation tools. Advantages of selenium. Overview of Eclipse.

Concepts of Framework: Introduction to framework, about Framework, Use of framework, Different types of frameworks. DataDriven Framework, KeywordDriven Framework, Hybrid Framework

Selenium Architecture: Selenium RC Architecture. WebDriver Architecture. WebDriver Vs Selenium RC. Brief explanation about advantages of webdriver.

Locator Techniques: Introduction about locator concept. Brief explanation of different locator techniques. Xpath techniques explanation with different kind of real time scenarios. Identify elements and objects using Firebug, FirePath, Locating elements by ID, Name, Link Text, XPath.

Selenium IDE: Download and Installation of Mozilla Firefox Add-ons. Record and playback techniques. Modifying the script using IDE. Validate the locator value using IDE.

Selenium IDE Concepts & Commands: Building Test cases using Selenium IDE, Creating test suites, Adding Selenium IDE commands, Selenium IDE Menus, Selenium IDE commands (assert, verify, wait, and store the elements).

Selenium setup: Step by step explanation for Setting up Eclipse, Integration of Eclipse and WebDriver. WebDriver & Comparison with Selenium RC. Details related to RC server and Configurations of RC Hubs and Nodes.

Selenium – Core JAVA: Introduction, Data Types, JAVA variables, JAVA Basis, OOPs Concepts, Loops, Class & Objects, Execution of JAVA programs.

WebDriver: Download and Setup Selenium WebDriver and Java - JDK. WebDriver Introduction, Methods in WebDriver, Detailed discussion about webdriver commands. Handling different browsers. Synchronization. Create our own methods in webdriver. More programming techniques in webdriver.

Selenium Grid: Introduction of selenium Grid. Installation and setup of Hub and node. Simple script execution using grid. Parallel execution using grid.

Test-NG: Brief about Testing framework and TestNG. Annotation concepts and types. TestNG Configuration. Parallel script execution. Grouping the test cases. Parameter configurations. Report generation. Create customized report using TestNG & Java.

HP LoadRunner

LoadRunner Installation. LoadRunner architecture. Where to install Load Runner components. Identify hardware and software needed for installation. Installing Loadrunner samples.

VUGEN: Introduction to VUSER Concept: Definition of Vuser. Why VUGEN is Used? Features of VUGEN. VUSER types.

Streamlining Recording: Settings to be done before recording. Modes of recording. Choosing the right protocol. Types of protocol loadrunner supports. Single and Multiple protocols. Use of protocol advisor.

Recording Script using VUGEN: VUSER Script sections (Init, Action and end). Creating New Virtual VUSER script. Adding and removing protocols. Choosing New Virtual user category. Begin Recording on your application. Ending and Saving a recording session. Running the Created Script

Introduction to Output window in VUGEN: Replay Log. Recording Log. Generation Log. Correlation Results

Understanding the VUSER script: Viewing and modifying VUSER scripts. Understanding the functions generated in the code. Getting Help on functions. Workflow Wizard. Walkthrough on few Loadrunner functions. Recap of Steps for creating Vuser Scripts.

VUGEN parameters: Definition of parameter. Why parameterization is required. Parameters Limitations. Creating Parameters. Types of parameters. Using Existing Parameters. Using Parameter List. Parameterization options.

File and table type parameters: Creating data files. Properties of file type parameters. properties of table type parameters.

Loadrunner Testing Process: Planning the test. Creating Vuser Script. Creating the scenario. Running the scenario. Monitoring the scenario. Analyzing the scenario

Kinds of Scheduling Scenarios: Schedule by scenario. Schedule by group.

Running scenarios and controlling Vusers: Running entire scenario. Controlling Vuser groups. Controlling individual Vusers. Manually adding Vuser to running scenario. Manually adding Vuser to Rendezvous points.

Monitoring and Analysis: Online Monitoring: About Online Monitoring. Setting up the Monitoring environment. Monitor types. Choosing Monitors and measurements in the controller. Starting the monitors in the controller. Opening online monitor graphs in the controller. Setting monitor options

Analysis: Introduction to Analysis: Quality control of solid dosage forms. QC of Semi solid, liquid dosage forms and sterile products. QC of Aerosol and NDDS + quiz 1 .QC of Aerosol and Drug-Excipients Interaction

Quality control and quality assurance: Guidelines for Bioequivalence Studies. Pharmaceutical Validation and Inspection + Bioequivalence problems. Statistical quality control: Guidelines for Stability Studies + quiz 2 (Bioequivalence Problems)

Test Link

About test link, Browser support, Overall structure, Basic terminologies, Functional overview, Test projects, Creating a test projects, Test Project management, requirement specifications, Requirement to test case mapping, Create test plan, Builds management, Test specification, Test case and suites, Adding test cases to test plan, Removing test cases case Assignment for execution, Milestone, Keywords, Test reports and matrices, Charts, Administrator, Import and export data in XML, Shortcuts.

Bugzilla

About Bugzilla, Why Bugzilla? Bug life cycle. Features, Platform and requirements, Home page, Self-registration, Create , user, Administration, Products, Email preference, Components, Flags, Creating flags, Whining, Adding an events, Bug life cycle, Creating a new bug, Filling a bug, Advance search ,Reports and chart

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