

SOFTWARE TESTING.

Module: 1 Foundation (C Pro).

Module: 2 Databases (SQL).

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

Module: 4 Projects.

Module: 1 Foundation (C Pro).

Course description

The course fully covers the basics of programming in the “C” programming language and demonstrates fundamental programming techniques, customs and vocabulary including the most common library functions and the usage of the preprocessor.

Learning objectives

To familiarize the trainee with basic concepts of computer programming and developer tools.

To present the syntax and semantics of the “C” language as well as data types offered by the language. To allow the trainee to write their own programs using standard language infrastructure regardless of the hardware or software platform

Course outline

Introduction to compiling and software development, Basic scalar data types and their operators. Flow control, Complex data types: arrays, structures and pointers, Structuring the code: functions and modules, Preprocessing source code

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. This course discusses how to use the regular expression support in SQL.

Course Outline

Retrieving Data Using the SQL 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 and 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 (Waterfall, Prototype, Spiral) Incremental (Agile methodology and Scrum Framework). V-Model. Advantages and Disadvantages of each software development life cycle. Principles of Testing. STLC –Software Testing Life Cycle. Difference between Test case, Use case and Scenario's. How to prepare test plan and strategy.

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? Bug Tracking tool. Types of Testing. Difference between static and Dynamic testing. Difference between Functional and Non-functional testing. Black box testing and its types. White box testing and its types. System Integration Testing vs User Acceptance Testing. Entry Criteria and Exit Criteria. Test Environment and Test data preparation. Flow graph notations. Statement coverage. Branch Coverage. path coverage. Cyclometric Complexity. Integration testing. Big Bang Integration. Incremental Approach – Top Down, Bottom up and Hybrid.

Automation Testing (QTP)

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: What is 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 Web Driver

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

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

Selenium IDE :Download and Installation. Record and playback techniques. Modifying the script using IDE. Convert the IDE script into RC script. Validate the locator value using IDE

Selenium setup: Explanation of step by step instructions for setup. Integration of eclipse and Testing. Selenium RC: Start the selenium Selenium server. Basics of Annotations in Testng. Write the basic script of Selenium RC. How to execute the scripts (different ways) and look the results. Brief explanation of commands in selenium RC

WebDriver: Webdriver setup. Detailed discussion about webdriver commands. Handling different browsers. Create our own methods in webdriver. More programming techniques in webdriver. Using RC commands from webdriver project. Migration of selenium1 code to selenium2. Project structure organization

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

Testing: Brief about Testing framework and Testng. Annotation concept and different types. Testng Configuration. Suite execution from command prompt without eclipse
Parallel script execution. Grouping the test cases. Parameter configurations. Suite creation methodology. Report generation. Assertions. Verifications. Listeners in Testng. Create customized report using Testng & Java

Load Runner

LoadRunner Installation. LoadRunner architecture. Where to install LoadRunner 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
When and how to use more than one Action. Deleting Action

First touch to VUGEN: Starting VUGEN. Understanding VUGEN Environment Options. Choosing the right protocol

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

Actions in depth: When and how to use more than one Action. Deleting Actions. Rename actions. Import Action into Vuser

Introduction to 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

Setting Parameters properties: Introduction to setting parameter properties. Setting properties for internal data parameter type setting properties for user defined functions. Choosing parameter formats

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

Designing a scenario: Creating a scenario. Run scenario with sample Vuser load

Scenario types: Manual Scenario. Goal Oriented scenario

Introduction to Load generators: What is load generator? Why we need load generators

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

Scheduling scenarios: About Scheduling scenarios. Delaying the start of scenarios. Scheduling a scenario. Scheduling Vuser groups. Adding Vuser to Scheduled scenarios

Creating and running a manual scenario: Creating Vuser groups. Configuring Vusers in Vuser group. Configuring Vuser run time settings. Configuring scripts. Setting time out intervals. Configuring Scenario run time settings. Setting the run time file location. Specifying results location. Collating results

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

Creating Goal Oriented scenario: About Planning goal oriented scenario. Understanding goal oriented scenario design tab. Defining scenario goals. Assigning properties to scripts. Configuring scripts

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, Shortcuts

Bugzilla

About Bugzilla, Why Bugzilla, Features, Platform and requirements, Home page, Self-registration, Create , user, 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