ON CAMPUS

SOFTWARE AUTOMATION ENGINEERING PROGRAM

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TECHTORIAL ACADEMY

CURRICULUM OVERVIEW

SOFTWARE AUTOMATION ENGINEERING

Module 1: Java Programming Language (Weeks 1 – 11)

Module 2: Selenium WebDriver (Weeks 12 – 15)

Module 3 : Cucumber BDD (Weeks 15 – 17)

Module 4: API (Weeks 17–20)

Module 5: SQL (Weeks 21 –23)

Module 6: APPIUM (24)

JAVA PROGRAMMING

Automation Journey: An In-Depth Look

JAVA PROGRAMMING

Automation Journey: An In–Depth Look

4- Java API – STRING
    a. Introduction Java Methods
    b. String Methods

5- Understanding Java If Conditions
    a. The if-then statement
    b. The if-then-else statement
    c. Switch statement

6- Understanding the Loops
    a. While loop
    b. Do-while loop
    c. For loop
    d. Nested Loop
    g. Foreach loop (Starts with Java Collections)

7- Java API – ARRAY
    a. Array Intro
    d. Array sorting
    f. Binary Search
    h. Multidimensional Array

JAVA PROGRAMMING

Automation Journey: An In-Depth Look

8- **METHODS**

    a. Creating Methods

    b. Optional Specifiers

    c. Return Type

    d. Method Signature

    e. Method Parameter

    f. Method Body

    g. Method Overloading

9- **Access Modifiers**

    a. Private, Default, Protected and Public Access Modifiers

    b. Static Methods and Fields

10- **Java Constructors**

    a. Constructor introduction

    c. Creating Java Objects

    d. Initializations

JAVA PROGRAMMING

Automation Journey: An In-Depth Look

11- JAVA COLLECTION

a. ArrayList

    i. Creating the ArrayList

    ii. List and ArrayList

    iii. Difference between Array and ArrayList

b. SET

    i. Introduction to Set collection

    ii. Set Collection Methods

    iii. HashSet, TreeSet and LinkedHashSet

    iv. Difference between Set and ArrayList

c. MAP

    i. Creating the Map

    ii. Key and Value in Map

    iii. HashMap, TreeMap, and LinkedHashMap implementations

d. HASHTABLE

    i. Introduction to HashTable

    ii. Difference between Map and HashTable

JAVA PROGRAMMING

Automation Journey: An In-Depth Look

12- Java Date and Time Classes

    a. Using Date and Time class in Java

    b. Manipulating Dates and Times

    c. Working with Period

13- INHERITANCE

    a. Introduction to inheritance

    b. Calling inherited class members

    d. Inheriting methods and variables

    e. Method overriding

14- Creating ABSTRACT Class

    a. Definition of the Abstract Class

    b. Creating Concrete class

    c. Extending Abstract Class

15- Implementing INTERFACE

    a. Introduction to Interface

    c. Interface variables

    d. Default methods in interface

JAVA PROGRAMMING

Automation Journey: An In-Depth Look

16- Understanding Polymorphism

    a. Object vs. reference

    b. Casting objects

    c. Polymorphic Parameters

    d. Virtual Methods

17- Exceptions

    a. Understanding Exceptions

    b. Types of Exception

    c. Throwing and Exceptions

    d. Handling exceptions

        i. Try-catch block

        ii. Finally block

    e. Runtime Exception and Checked Exception

18- ENUM

    a. Enum inside the class

    b. Switch statement using enum

SELENIUM WEBDRIVER

Selenium Deep Dive

1) HTML introduction

    a) Understanding User Interface

    b) Understanding HTML Basics

    c) Creating Basic HTML file

    d) Reading HTML language

    e) Web Elements

2) Selenium introduction

    a) Why Selenium?

    b) Advantages of Selenium

    c) Disadvantages of Selenium

    d) Selenium Methods intro

3) Selenium Basics

    a) Document Object Model

    b) Basic Locators

    c) Advanced Locators

        i) Xpath

        ii) Xpath Axes

        iii) CSS selector

4) TestNG Basics

    a) Test annotation

    b) TestNG Assertions

SELENIUM WEBDRIVER

Selenium Deep Dive

SELENIUM WEBDRIVER

Selenium Deep Dive

10) Creating Driver Class

    * Singleton Design Pattern

11) Multiple Windows/Tabs

    a) Selenium window method

    b) Handling multiple windows using selenium

12) Synchronization/AJAX

13) Selenium Alert Class

    a) Handling Alert Popups

    b) Handling Html Popups

14) Iframes

    a) Intro Iframes

    b) Handling Iframes using Selenium

15) JAVASCRIPT EXECUTOR

    a) Defining JavaScript Executor

    b) Using JavaScriptExecutor to scroll

    c) Using JavaScript Methods

16) Properties file

a) Creating Properties file

b) Creating Utility Class for Properties

CUCUMBER BDD

1) Introduction to Cucumber Framework

    a. Feature file and Step Definition class

    b. Gherkin Language

2) Creating Feature File

    a. Creating Scenario

    b. Passing String in cucumber steps

    c. Passing Number in cucumber steps

    d. Using Data Table in cucumber steps

        i. Data table with List

        ii. Data table with List of List

        iii. Data table with Map

        iv. Data table with List of Map

    e. Using Scenario Outline with Example Table

3) Running Feature Files with Runner Class

4) Using Scenario Outline with Example Table

5) Cucumber Hook Class

6) Cucumber HTML Report

* 7) APACHE POI

    a) Reading from Excel File
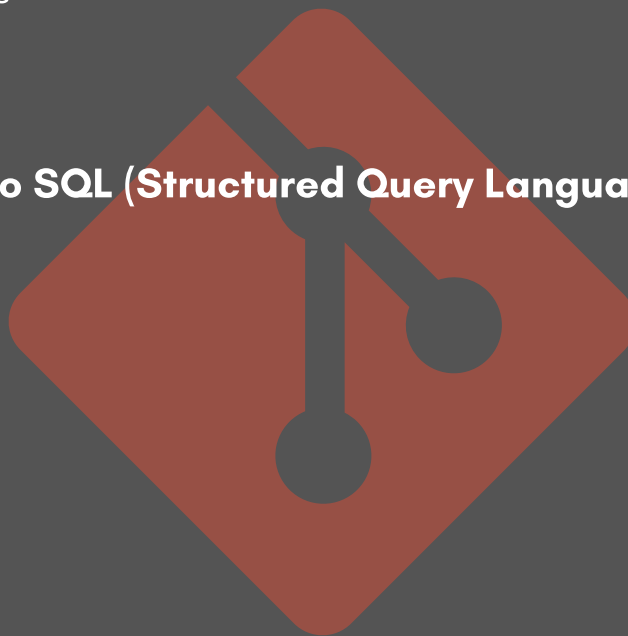
    b) Creating Excel Utility Class

GIT AND SQL

GIT

1. Introduction to Distributed version control systems

2. Git architecture

3. Git commands

4. Git branching

SQL

1. Introduction to SQL (Structured Query Language)

2. DML

3. DDL

4. Joins

5. Unions

API

API TESTING

1. Introduction to REST API
- o – Understanding how REST API architecture works
- o – BaseURL

2. HTTP CRUD methods

3. POSTMAN

4. Request/Response

5. HTTP response status codes

6. Apache Http Client for Api Testing

7. Header and cookies in rest request

8. JSON

9. REST API Serialization/Deserialization

10. RestAssured library
- o GET
- o POST
- o PUT
- o DELETE

11. API Authorization/Authentication

JENKINS

1) Introduction to Jenkins

2) Advantages of Jenkins

3) SetUp Jenkins Job for Automation

4) Running Jenkins Job

5) Html report in jenkins

AWS

1) Installing AWS machine

2) Using EC2 machine as a Server

3) Running Automation in EC2 machine