Diploma in Software Testing And Automation Lectureflow

Module 1) ST - Introduction and Fundamentals	6

- Introduction of Software Engineering
- What is Testing?
- Software Architecture
- Testing Activities
- Software Development Life Cycle (SDLC)
- Test Objectives
- (Water fall, Iterative and Incremental, Spiral, Agile, Use Case)
- Objectives and purpose
- Software Testing Methodologies
- When and Why Testing?
- Software Requirement Specifications (SRS)
- When to start and stop Testing?
- Structure Query Language (SQL)
- 7 Key Principles of Testing
- OOPS

Module 2) ST - Manual Testing	27

- Error, Bug, Defects and Causes of Defects ,Quality , Risk : Types of Risks.
- Test Organization : (Tester, Test Leader, Test planning , QA v/s QC , Testing V/s Debugging)
- Test Development Process -Test Analysis
- Test Plan
- Strategy
- HLR
- Script
- Scenario
- Cases
- Traceability
- Fundamental Test Process -STLC
- Psychology of Testing
- Software Development Model :: (V-Model and RAD)
- Software Testing Levels
- Unit Testing
- Integration Testing
- System Testing
- Acceptance Testing
- , Alpha and Beta Testing
- Testing, Testing definitions as per ISQTB.
- Test Design Techniques

- Dynamic Testing
- Functional and Non Functional Testing
- Black Box Testing Techniques
- White Box Testing Techniques
- Experience Based Testing Techniques
- Maintenance Testing
- Smoke and Sanity Testing
- End to End Testing
- Retesting and Regression Testing
- Positive and Negative Testing
- Static Testing (Formal, Informal, Types of Review, Estimation Techniques)
- Agile Testing
- Agile with Scrum process
- Scrum process
- Sprint Review and Retrospective
- Scrum Board
- JIRA Tools
- Build Release Process

Module 3) Testing on Live Application	4

- Web Application Testing
- Desktop Application Testing
- Mobile Application Testing
- Responsive Testing
- Basic intro of API Testing
- Cross Browser Testing
- Advanced Mobile Testing (aPk, IPA)
- Database SQL Testing

Module 4) ST - Defect Management	2

- Defect Management and Tracking
- Bug Life Cycle
- Defect Management
- Reporting
- Priority
- Severity
- Cost
- Bugzilla

Module 5) ST - Automation and Selenium	6

- Fundamentals of Automation Testing
- Introduction of Functional Testing Using Automation Tool
- Selenium IDE with use of Fire bug tools
- Introduction of Non-Functional Testing Using Automation Tool
- Introduction about Load Runner-up
- Load Runner-up procedure
- How to use Load Runner-up
- Load Runner-up IDE
- Generate Single Scripting and Assign V-Users
- Multi Scripting with Grouping
- Parameterization in Load Runner-up

Module 7) Adv. Selenium - Introduction to Automation	1

- What is the use of automation testing
- What we need to Automate
- What is Selenium
- Advantages of Selenium
- What is the difference between Selenium and QTP

Module 8) Ad. Selenium - Java For Web Driver	23

- Introduction of Core Java
- Eclipse IDE
- JVM,JDK,JRE
- Class, Object, Method
- Constructor
- Source File Layout
- Package Management
- Import Statement
- Data types
- Modifiers- Public, Private, Protected, Default
- Conditional Statements and Looping Statements
- Practical Example: 1 - W.J.P to Print Hello World 2 - W.J.P to Calculate Arithmetic Operation 3 - W.J.P to use All Data types related Examples 4 - W.J.P to Perform Casting of Implicit 5 - W.J.P to Perform Casting of Explicit 6 - W.J.P to Perform OddEven Number 7 - W.J.P to find Positive ,Negative and Zero using nested if 8 - W.J.P to find Maximum from 3 number using else if ladder 9 - W.J.P to use of switch case 10 - W.J.P to create Package 11 - W.J.P. to create a package with all access Specifie
- Array Introduction
- Types of Array
- Encapsulations
- Inheritance - Introduction
- Types of Inheritance

- Polymorphism
- Types of Polymorphism
- Practical Example: 1 - W.J.P to create an one dimensional array 2 - W.J.P to create an one dimensional array getting value from user using of Scanner class 3 - W.J.P to create an two or more dimensional array 4 - W.J.P to create an two or more dimensional array getting value from user using of Scanner class
- Practical Example: 5 - W.J.P to create an two or more dimensional array getting value from user using of Scanner class with matrix form. 6 - W.J.P to use of Encapsulation with your private data 7 - W.J.P. to use of Inheritance with the help of student super class to use on sport class in single inherance. 8 - W.J.P. to use of Inheritance with the help of student super class to use on sport class and also inherit to another class (Result class) in Multilevel inheritance.
- Keywords - This, Static, Final, Super
- Practical Examples:9 - W.J.P. to use of Inheritance with the help of student super class to use on sport class and also student class inherit into result class in Hierarchical inheritance. 10 - W.J.P. to use of Method Overloading and Overriding 11 - W.J.P to use of simple interface and also implement with your class 12 - W.J.P. to use of interface through solved the problem of multiple inheritances.
- Abstract and Interface - Introduction and Difference
- Practical Example: 13 - W.J.P. to use of abstract class and method 14 - W.J.P. to use of static keyword with variable and method 15 - W.J.P. to use of This keyword 16 - W.J.P. to use of Final keyword with class, method and variable.
- Object Class(only Important Methods)
- String Class (Only Important Methods)
- String Buffer & String Builder
- Wrapper Classes
- Practical Example: 1 - W.J.P. to get the character at the given index within the String. Original String = Tops Technologies! 2 - W.J.P. to Swap the String 3 - W.J.P. to replace the string from the existing string 4 - W.j.p. to count the world from the string 5 - W.J.P. to count the vovel from the string 6 - W.J.P. to find length of the string
- Introduction to Exception
- Exceptions categories
- Standard Java Exception classes
- Using Try-catch and finally clause
- Practical Example: 1 - W.J.P. to use of Try and catch using with arithmetic exception 2 - W.j.p. to use of custome Exception 3 - W.J.P. to read and write the value from the byte stream 4 - W.J.P. to read and write the value into file using character stream 5 - W.j.P. to use the file with file operation
- File IO: I/O using Java
- Files (Create/Read/Write operations on files)
- Introduction to Thread
- Thread Creation
- Basic Methods
- Introduction to Collection
- List, Set, Map
- Practical Example: 1 - W.J.P. to use Sleep method in Thread 2 - W.J.P. use with Arraylist 3 - W.J.P. use with HashSet 4 - W.J.P. use with HashMap 5 - W.J.P. use with Generics 6 - W.J.P. use with

Iterator

Module 9) Adv. selenium - Selenium IDE and scripts	18

- Selenium RC
- IDE
- Selenium Web Driver/Selenium 2.0
- Selenium-Grid
- Why Web Driver?
- Downloading web driver Jars configuring in eclipse
- Architecture of selenium web driver
- Drivers for Firefox, IE, Chrome, IPhone, Android etc
- What is the difference between Selenium RC and WD
- Practical Example : 1 - W.P to demostrate Selenium configration, and verify title of Facebook in different browser(Like IE, Chrome, FF)
- "Tools to identify elements/objects Firebug"
- IE Developer tools
- Google Chrome Developer tools
- Practical Example : 1 - W.p to demostrate all Locators using Inspect Element or Firebug. 2 - W.p to find webelemts using different Xpath
- Locating elements by ID
- Finding Elements by using className, Name, Link Text, Partial link Text, XPath, using CSS, Using TagName
- Installing Selenium IDE
- Selenium IDE icons
- Recording your first test with Selenium IDE
- Some Special IDE commands
- "Write your own Selenium IDE script without record and playback"
- Practical Example : 1 - Record Script for Login functionaliy of Tops Career center (https://topsint.com/careercenter/index.php) 2 - Write script for Facebook sign up Form and play (https://www.facebook.com/) 3 - verify Title of Tops Erp using verify title and assert title cmd (http://www.topsint.com/topserp/index.php) 4 - Handel alert box In Selenium IDE
- Handle Text Box, Hyperlink, Button and Checkbox, Radio Button and DropDown Controls
- Select value from DropDown
- Display all values
- Why Implicit wait and Implementation of Implicit wait
- Why Explicit wait and Implementation of Explicit wait
- Web Driver Fluent wait and Thread Sleep functionality
- Handling alerts box, Verifying the Alert Texts and verify pop ups
- Handling confirmation messages
- Practical Example : 1 - W.P to Demostrate all webelements, Fill the form using automation (https://demoqa.com/automation-practice-form/) note : user differnet locator for every elemet 2 - W.P to find all links from webpage and write on consol. 3 - Add implicite wait in Selenium Practical 4 - W.P to demostrate explicite wait and Fluent wait 5 - W.S.P. to find the elements of alert

box,popup,multiple window handle 6 - W.S.P. to find the elements of file upload and download 7 - W.P to demostrate Keybord Action

- Keyboard actions / Screen Shot Actions
- Mouse actions
- Handling multiple tabs
- customized x-path [How to write x-path]
- Preparing web driver test cases using customized x-path
- Identifying controls using x-path predefined functions
- Web Tables
- What is Web Table
- Extracting data from web tables
- Examples on static and dynamic Web Tables
- Practical Example : 1 - W.S.P. to find the elements of webtable and dynamic table 2 - W.P to find Element from inner table
- Junit Framework
- Running Java Programs using junit
- Writing Selenium tests from scratch using Junit Framework
- JUNIT Annotations
- JUNIT Methods
- Frequently used Selenium commands
- Test Suites using JUNIT
- Practical Examples : 1 - W.S.P. to set up of JUnit. 2 - W.S.P. to use of Annotation 3 - W.S.P. to use of AssertClass 4 - W.S.P. to use of Junit Exception 5 - W.S.P. to use of Junit Parameter 6 - W.S.P. with use of Selenium Webdriver with junit framework 7 - W.S.P. to create the test suites
- parameterise Test in Junit
- TestNG FrameWork
- Environment of TestNG
- Writing WebDriver Test Cases using TestNG and execution
- Basic Annotations of TestNG
- Ignore Test
- Dependency Test
- Practical Example : 1 - W.S.P. to testNG Installation 2 - W.S.P. to testNG for annotation 3 - W.S.P. to testNG with all annotation with selenium 4 - W.S.P. to testNG with ignore the test 5 - W.S.P. to testNG for group test
- Parameterized Tests
- TestNG XML
- Report Generation
- Practical Example : 6 - W.S.P. to testNG for dependency test 7 - W.S.P. to testNG for parameterized test 8 - W.S.P. to testNG for data provider annotation 9 - W.S.P. to testNG with test suite 10 - W.S.P to Demostrate Listener , take screenshot when test is fail and print success message when test is pass.
- Executing Automation Test Cases in multiple browsers Sequentially
- Working with Chrome and IE browsers
- What is Firefox Profile And Implementation of Firefox Profile

- Practical Example : 1 - W.S.P. to create the cross browser testing 2 - W.S.P. to testNG through multiple browser working with same website

Module 10) Adv. Selenium - Web Driver Advance	14

- What is WebDriver Desired Capabilities class
- Validations and its usage in Automation test scripts
- Implementing Logs using Apache Logj API
- Reading data from Property files using java program
- Reading and Writing data from/to Excel files using Apache POI API and JXL API
- "How to develop Test automation frame work in live environment"
- Practical Example : 1 - W.S.P. to testNG for log4j with create logs 2 - W.S.P. to testNGto get the data from the file
- What is a frame work
- Types of frame work
- Data driven frame work
- Modular driven frame work
- Keyword driven frame work
- Hybrid Framework
- Practical Example : 1 - W.S.P. to testNG for use of Excel data to read and write into Excel file 2 - Used with Data Driven 3 - Used with Modular Driven 4 - Keyword Driven 5 - Hybrid Driven
- Introduction about maven
- High Level Overview
- Ant v/s Maven
- Installation of Maven
- Demo using Sample Maven Project
- Maven Structure
- Maven Dependencies
- Maven Repositories
- Maven Eclipse Integration
- Practical Example : 1 - W.J.P. to installation with Maven into your eclipse 2 - W.J.P. to use of Maven Dependancies in the project 3 - W.J.P. to create selenium program with maven 4 - W.J.P. to create junit program with maven 5 - W.J.P. to create TestNG program with Maven 6 - W.J.P. to create Excel based program using POI with Maven

Module 11) Mobile Automation Testing -Appium	13

- Introduction : What is appium?
- How Appium work ? Architect Overview
- Types of mobile app
- Appium Set Up on windows : Install Appium
- Java JDK Setup
- Android Studio Setup
- Emulator Setup: Accelerate Performance

- Verify Setup using appium-doctor
- Emulator Setup: Create Virtual Android Device
- Emulator Setup: Create Driver Session
- Real Device Setup: Enable USB Debugging
- Real Device Setup: Create Driver Session
- Project Set Up : What are Desired Capabilities?
- Create java project using maven
- Start Driver Session from the Java Program
- Android: How to get appPackage and appActivity?
- Android: Launch Emulator Automatically
- Native app automation : Appium Inspector Walk-through
- Attaching Appium Inspector to an Existing Driver Session
- Android: XML and Element Attributes
- Android: Finding Elements using different Locator Strategies
- Android: Finding Elements using UiAutomator (Native Techniques)
- Different Ways of Defining Native Elements and Best Practices
- Basic Element Actions
- Fetching Element Attributes
- Synchronization using Waits

Module 12) API Testing	**7**

- What is an API
- API Testing
- Role of A software tester in API testing
- API Testing and Unit Testing.
- Download and Install Postman
- As a Standalone Application.
- As a Chrome Extension
- Postman Navigation
- 1)Sidebar section
- 2)Header Section
- 3) Builder Section
- 4) Response Section
- Create New Request in Postman
- GET Request in Postman
- Response in Postman
- Request Parameters in Postman
- POST Request using Postman