MANUAL AND SELENIUM

Automation TESTING

Introduction to Software Application and Fundamental of Testing

- Overview of Software Application Testing
- Why is testing necessary
- Software testing Principles
- Psychology of software testing
- Causes of Software Defects

- Terms used in Software Testing
- Overview of SDLC (Software Development Life Cycle)
- Overview of Project Execution Lifecycle
- Overview of Project Lifecycle

Models of Software Engineering

- Waterfall Model
- Prototype model
- Spiral Model
- Incremental Model

- Iterative Model
- RAD (Rapid Application Development)
- VModel
- Agile Model

Quality Management System

- What is Quality Management System and its need
- What is Quality Assurance
- What is Quality Control
- Review process and Types of Review Process
- Different Roles and Responsibilities of reviewers
- Walkthrough

- Inspection
- Code Review
- Peer Review
- Verification Vs Validation
- Static Dynamic Testing techniques
- Quality Standard (ISNE, ISO, 6 Sigma

Software Testing methodology

- White Box
- Grey Box

- Blackbox

Levels of Software Testing

- Unit Testing
- Integration Testing

- System testing
- UAT

Testing Types/Approaches

- Smoke Testing
- Sanity Testing
- Re-Testing
- Regression Testing
- Ad-hoc and Exploratory testing
- Monkey & Gorilla Testing
- Alpha Testing
- Beta Testing
- Validation Testing
- Web Application Testing
- Accessibility Testing

- Recovery Testing
- System Compatibility
- Browser Compatibility Testing
- Cross Browser Testing
- Multiple Browser Testing
- Forward and backward compatibility
- Performance Testing
- Usability Testing
- Accessibility Testing
- Security Testing
- Multilingual Testing

Introduction of Different Test Estimation techniques & Reporting Information

- Test Plans Estimates and Strategies
- Differentdient approaches
- Test Progress, monitoring and control

- Configuration management
- Risk and testing
- Identifying test condition & design test cases

- Categorize T est design techniques
- Specification based or black box techniques
- Structure Based or white box testing techniques
- Experience Based techniques

- Riskbased Testing
- Decision making Techniques
- Bug/defect life cycle
- Defect Severity & Priority

Software Testing Methodology

- Creation Of Test Plan
- Creation Of Test Scenarios, Test Cases
- Test Case Execution
- Bug Tracking and reporting
- Implementation of testing optimization techniques

- Overview of Test Metrics, creation & its importance
- Types of Test Metrics
- Traceability Metrics
- Test Report Preparation
- Test closure Report preparation

Real Time Process testing terminologies

- Test bed, Test Hardware, Test Suit, Test basis, Test artifacts, Different Environment (DEV, Test,Production)
- Requirements Volatility, Staging process, Build Process, T est Cycle, Re-spin, TestEfficiency, Hotfix, Patch
- BaseLine, Change Request, Defective, Defect, Clustering, Defect Slippage, Impact Analysis, Defect Root cause,
- Escalation process and more

Testing Types/Approaches

- Introduction to Agile Methodology Agile Manifesto
- Overview Of Different Agile methods
- When to Use Traditional Methods
- Scrum Process
- Scrum Roles

- Scrum Team
- Time Box Concept
- Product Backlog Grooming
- Scrum Artifacts
- Agile Tracking, Scrum Meeting & Sally Stand-ups

Agile Test Management and Bug tracking/ Reporting with JIRA

- Introduction About Jira tool
- Exploring The JIRAworkspace
- Managing your user profile
- Navigating JIRA
- Creating an Issue
- Viewing issues
- Editing issues
- Transitions and Screens

- The Workflow Viewer
- Collaboration
- Search
- Detail View
- Configuring Filters
- Email Filter Results
- Standard & Custom Reports

Database Testing Introduction

- What is a Database Application?
- Overview About database structure
- Introduction About different database types
- Understanding Data storage
- Backend & frontend Testing

- General Database Basics
- Essential Elements needed for database testing
- Writing test plan for database testing
- Organizing DB T esting approach
- Writing test cases for database testing

SQL

- What is Structured Query Language?
- Writing the statement in SQL Plus
- Overview Of DML, DDL, TCL, DCL

- DML - Insert, update, Delete, merge
- DDL - Create, Drop, Alter, Rename, Modify, Truncate
- TCL - Commit, Rollback, SavePoint

SQL Function

- Single Row Function / Multiple Row Function
- String Function, Number Function, Date and Time, Conversion, General Function

Introduction to Java

- Introduction to Java Programming Language
- Uses of Java Syntax Rules & Coding Standards

- Environment Setup, Write Execute first Java Prog
- Write Java Programs using Eclipse IDE

Java Programming for Variation

- Overview of Java Programming, Java Modifiers, Data Types
- Variables, Operators, Flow Control, Arrays, String Handling
- File Handling, Exception Handling, and Methods
- Java OOPS : Inheritance, Polymorphism, Abstraction, and Encapsulation

Java Program Structure and Syntax

- Java Programming Structure, Writing Comments,
- Declaring Methods, Declaring Variables, Declaring Constants, Print Statements, usage of Operators,
- Writing Conditional Statements, Writing Loop Statements and Calling methods

Java Conditional and Loop Statements

- Java Conditional and Loop Statements, explains Types of Conditional statements in java
- If Statement and switch statements in Java with examples
- Java Loop structures, for loop, while loop, do while looped enhanced for loop with examples.

Strings and Arrays in Java

- Strings and Arrays in Java, explains String handling in Java,
- Creating Strings, String Concatenation, and String Comparisons
- Array declaration, types of Arrays, print Array, copy Array,
- Inserting Values & Read Array, Multidimension Arrays & Disadvantages ofArrays

Input Output Operations and File Handling

- Input And Output operations and File handling in Java,
- Explain Reading different types of input and displaying output on the console.

Collection Framework

- Introduction Of Collections
- Types Of Collections
- Generic-List, Dictionary, Stackand Queue
- Non Generic-Array List, Hash Table, Stack and Queue ENUM

Introduction of Selenium

- What is Automation Testing
- Use of automation Testing
- T ools for Automation Testing
- Why Automation is important for your career?
- What is Selenium?
- Advantage Of Selenium

- History Of Selenium
- Component Of Selenium
- Architecture Of Remote Control
- Architecture of GRID
- Differences between APIs Vs GUIs

Selenium IDE

- Selenium IDE Introduction
- Record and Playback with Firefox and Chrome
- Debugging In Selenium IDE Script

- Introduction Katalon Studio
- Record and Playback through Katalon Studio

Set up Eclipse

- Download and install java
- Download and Install Eclipse
- Download and configure Web Driver java client
- Setup a project

- Create Packages
- Create First Java test case
- Import Web Driver Source file

Web Driver

- Web Driver interface
- Web Element interface

- Launching Firefox browser

Browse & Navigation Commands

- How to Open a URL
- Verify Page title
- Strategy to get the Page Source
- Difference between Close & Quit

- Ways to Navigate Back Forward
- How to Refresh Page
- Another Way of Navigating to specific Page

Locators

- What Are locators
- Different types of locators
- ID, Name, Xpath, CSS etc

- Difference between Absolute & Complete Xpath
- Finding Your First element

Element Identification

- Element inspector in Mozilla, Chrome and IE
- Element locator tool for Firefox Locator
- Firebug & Fire Path Add-Ons in Mozilla
- Various HTML locator strategies

- X Path Helper Plugin for Chrome
- Selection Of Effective Xpath
- Handling Dynamic objects/ids on the page

Tables, Check boxes & Radio button

- Identify T able rows and columns
- Extracting Values from a cell
- Dynamically Identify Tables Data
- Select class in Selenium

- Drop Down Handle
- Select Multiple values from the list
- Select & Deselect by Index,Value & Visible Text

Selenium Waits, Alert & Switch Windows

- Implicit And Explicit waits
- How to use Expected Conditions with Waits
- Simple Use of Thread Sleep
- Concept of Fluent Wait in Selenium
- Web Driver Wait And Its Uses
- Different Wait Until Conditions
- Ways to handle Simple, Confirmation & Prompt Alert
- Concept Of Set interface in Java

- Difference between Window Handle Or Handles
- Switching & Closing Windows, T abs Pop ups
- Concept Of window id
- Extracting Window IDs with Selenium Object
- Java Script Executor Interface
- Capture Screenshot
- Cookies Handles
- Page Load Timeout Set Script Timeout property

Action Class

- What is Action Class & What can we do
- Mouse Hover & Mouse Movement with Action

- Finding Coordinates of a Web Object
- Drag and Drop Action

Test NG Framework

- What Is Test NG
- Benefits and Features of Test NG
- How to download Test NG
- Annotations in Test NG
- How to run Test Suite in Test NG
- Depend on in Test NG

- Test Case sequence in Test NG
- Test NG Asserts
- Test NG Parameters
- Multi Browser testing Test NG
- Parallel testing in Test NG
- Group in Test NG

Log4j Logging

- Log4j introduction
- Download Log4J
- Add Log4j Jar
- Test Case with Log4j

- Log4j Log Manager
- Log4j Appender
- Log4j Layout
- Log4j Loggers

Database Connections

- Database connection

- Database Testing in Selenium using My Sql Server

Automation Framework

- What is Automation Framework
- Features of Automation Framework
- Benefits of usingAutomation Framework
- Different types of Automation Framework
- What is Data Driven Framework
- What is Module Driven Framework

- What is Keyword Driven Framework
- Apache POI API
- POI Setup and Configuration
- Read and Write Excel File with Apache POI
- POM (Page Object Model)
- Page Factory

Maven

- Maven Introduction
- Install Maven In Eclipse IDE
- Uses Of Maven
- Install Maven on Mac

- How to Create a New Maven Project
- How to Create a New Maven Project in Eclipse
- Configuration of POM & set multiple builds

Jenkins

- Installation configuration of complete Jenkins setup
- Scheduling of Maven build & set multiple builds
- Overview Of integration between Jenkins & GitHub

- Overview of integration between Jenkins AWS
- Selenium integration with Jenkins

GitHub

- Introduction to GitHub and Selenium integration
- Installation Of git binaries
- Github Setup in eclipse IDE

- Building Repository on git
- Test prepare in selenium using Github

API Testing

Basics of API Testing

- Client Server Architecture
- Presentation, Business and Database layers
- What is an API?
- What is API Testing?
- Difference between API testing and Unit testing
- Web services as introduction
- HTTP Structure
- Get and Post operation

- URI and URL
- Tools for API Testing
- Approach of API Testing
- Challenges of API Testing
- What to test for in API testing
- HTTP methods
- Status codes
- Example APIs

POSTMAN Tool

- Introduction to POSTMAN tool and installation
- Creating requests in Postman
- Creating collections in Postman
- Understanding variables and environments in Postman

- Authorization in POSTMAN
- Assertions/Tests in POSTMAN
- Command line Integration with Newman

Rest Assured advance

- REST, PUT and PATCH Request using Rest Assured
- Authentication & Authorization in REST Web Services

- Sample automation framework design using
- REST ASSURED

REST ASSURED

- What is REST?

- Rest Architectural Elements

REST ASSURED — Basics

- Configure Eclipse with Rest Assured
- TEST API Test Using Rest Assured
- Validate Response Status using Rest Assured
- Logging in Rest Assured

- Validate Response Header using Rest Assured
- Read JSON Response Body using Rest Assured

SOAP

- Introduction to SOAP WEB SERVICES
- SOAP UI: READY API BASICS and installation

- Create a Project, Test Suite, Test Case
- Assertions

Automation Test Script Development (Project Based)

- Analyzing Manual Test Script
- Development Test Script According To Manual Script

- Automation Test Script Development strategy

Proposed Projects

- Testing web commerce Website
- Testing Social Media Website
- Testing of Banking Website

- Testing of Travel Website
- Testing of Educational Website

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