

VERSION

24

**PROFESSIONAL**

**SR. CODE**

EAPL/PROF/PRTC28

**COURSE CODE**

EAPST

**SUB CATEGORY**

SOFTWARE TESTING



TOTAL DURATION  
**90**  
HOURS



THEORY TAKEN  
**25**  
HOURS



PRACTICAL TAKEN  
**65**  
HOURS

ELYSIUM  
ACADEMY  
SOFTWARE  
TEST EXPERT  
**ELYSIUM  
ACADEMY  
SOFTWARE  
TEST EXPERT**  
ELYSIUM  
ACADEMY  
SOFTWARE  
TEST EXPERT  
ELYSIUM  
ACADEMY  
SOFTWARE

## COURSE DESCRIPTION



Software Testing (Manual, Automation, SQL) course Contents has been developed working together with hundreds of hiring companies in India to prepare fresh graduates to work as Software Testing Engineer OR Quality Analyst. The Software Testing course contains Manual Testing, Automation Testing & SQL and the syllabus will help candidates in their preparation for the International Software Testing Qualifications Board (ISTQB) examination.

## COURSE GOALS



- Identify defects: Software testing is all about finding defects in software
- Assess quality
- Provide confidence
- Prevent defects
- Improve the software
- Meet regulatory requirements

## FUTURE SCOPE



- Software testing has become a successful career for many. Career options in software testing are wide and varied. For example, Test Manager, Senior Project Manager, QA Manager Etc. You can choose to be.
- The field of software testing has shown great improvement. Software testing is a way to verify that a software platform or product is working as expected.

# 01

## CHAPTER

## INTRODUCTION OF SOFTWARE TESTING

### 1. Introduction of Software Testing

- a. What is Software Testing?
- b. What is Quality?
- c. Importance of Testing
- d. Tools used for Testing
- e. Manual and Automation Testing
- f. Principles of software testing

### 2. Software Development Life Cycle

- a. SDLC and SDLC Phases

### 3. Waterfall Model

### 4. V Model

### 5. Spiral Model

### 6. Iterative Model

### 7. Agile Model

- b. Requirements and Analysis
- c. Design
- d. Development
- e. Testing
- f. Deployment
- g. Operation and Maintenance

### 8. Development Architectures

- a. One Tier Architecture
- b. Two Tier Architecture
- c. Three Tier Architecture
- d. N-Tier Architecture



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## 9. Software Testing Life Cycle

- a. What is STLC
- b. Entry and Exit Criteria
- c. STLC Phases
- d. Requirement Analysis
- e. Test Planning
- f. Test Design
- g. Test Execution
- h. Sign off
  - i. Test Scenario Preparation
  - j. Test Case Preparation
  - k. Test Environment and Test Data Preparation
  - l. Requirement Traceability Matrix

# 02

## CHAPTER

### **BASIC CONCEPT OF SOFTWARE TESTING**

#### 1. Basic Concept of Software Testing

- a. What is Software Testing?
- b. Test Process
- c. Test Levels



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- Testing Techniques used in Levels of Testing
- White Box Testing Technique
- Black Box Testing Technique
- Unit Testing
- Integration Testing
- System Testing
- Functional Testing
- Non Functional Testing
- User Acceptance Testing

#### d. Testing Types

- Functional Testing
- Whitebox Testing
- Blackbox Testing
- Positive Testing
- Negative Testing
- Beta Testing
- Live Environment Testing
- Smoke Testing
- Sanity Testing
- Regression Testing
- Formal Testing
- Informal Testing
- Monkey Testing
- Re-Testing
- Risk Based Testing
- Non Functional Testing
- Performance Testing

- Load/Stress Testing
- Usability Testing
- Accessibility Testing
- Security Testing

## 2. Test Scenario Writing

- a. What is Test Scenario
- b. Setting Up Trello
- c. Registration Test Scenarios
- d. Web pages Sign-up Test Scenarios
- e. Login Test Scenarios
- f. Search Functionality Test Scenarios

## 3. Test Case Writing

- g. Test Case Writing
- h. How to Write Test cases using Google Sheets
- i. Sign-up Valid Test Cases
- j. Invalid Sign-up Test Cases
- k. Username Test Cases
- l. Email Test Cases
- m. Password Test Cases

## 4. Test Execution and Bug Reporting

- n. How to Write a Bug Report
- o. Difference Between Landscape & Portrait Mode
- p. Types of Defects
- q. Taking Screenshots for the Defect Report
- r. Video Recording For the Defect Report

# 03

## CHAPTER

### **AGILE TESTING**

#### 1. Introduction of Agile

- a) What is Agile
- b) Why we are using Agile
- c) Advantages of Agile

#### 2. Agile Methodologies

- a) Overview
- b) Agile Scrum
  - Why we go for Agile?
  - Agile Manifestors and Scrum
  - Roles Involved in Agile
  - Terminologies used in Agile
- c) Agile Ceremonies
  - Spring Grooming
  - Spring Planning
  - Daily Scrum Meeting
  - Spring Review
  - Spring Retrospective
- d) Agile Artifacts
- e) Kanban
- f) Adaptive Project Framework (APF)
- g) Extreme Project Management (XPM)

#### 3. Mobile Testing

1. Introduction of Mobile Testing
2. What is Mobile Application Testing?



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3. Types of Mobile Applications
4. Difference Between Mobile Testing & Web Testing
5. Types of Mobile Devices
6. Challenges of Mobile Testing
7. Mobile Analytics Data

# 04

## CHAPTER

### **API TESTING WITH POSTMAN**

#### 1. Postman

- a. What is Postman
- b. Installation Process
- c. Request Builder
- d. Create & Save Requests
- e. POST Requests
- f. Writing Tests
- g. Collection Runner
- h. Authorization & Authentication

#### 2. Performance Testing

- a. What is Performance Testing
- b. Concept of Load Generation
- c. Creating Load Profiles

#### 3. Performance Testing Using JMeter

- a. How to Install JMeter
- b. Thread Group
- c. Samplers
- d. Listeners
- e. Adding Blazemeter Plugin
- f. Recording Scripts using Blazemeter
- g. Replaying Recorded Scripts
- h. Average & Median



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## 4. Advanced Performance Testing Using JMeter

- a. Introduction
- b. Response Time, Throughput, Utilization & Robustness
- c. Performance Test Environment
- d. Serial & Parallel Execution of Threads
- e. User Defined Variables
- f. Action After Sample Error
- g. Controllers
- h. Loop Controller
- i. Throughput Controller

# 05

## CHAPTER

### **JAVA**

#### 1. Java Programming for Software Testers

- a. Introduction
- b. Environment Setup
- c. Sample Java Code
- d. Getting input from User
- e. Arithmetic Operations
- f. If Statement
- g. If Else if
- h. Nested If
- i. Comparing More than One Condition
- j. Switch Case
- k. For Loop



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- I. While Loop
- m. Do While Loop

# 06

## CHAPTER

### **OBJECT- ORIENTED PROGRAMMING USING JAVA**

- a.Introduction
- b.Structure of OOPS(Class,method, object)
- c.Inheritance
- d.polymorphism
- e.Encapsulation
- f.Abstraction
- g.Exception handling

  
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# 07

## CHAPTER

### **BLACK BOX**

#### 1.JBlackbox Testing

- a. What is Black-Box Testing
- b. Equivalence Partitioning
- c. Boundary Value Analysis
- d. Finding Defect in a Live Project
- e. Decision Table Testing
- f. State-Transition Testing

  
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# 08

## CHAPTER

### WHITEBOX

#### 1. White box Testing

- a. What is White Box Testing
- b. Statement Coverage
- c. Decision coverage
- d. Condition Coverage
- e. Path Coverage
- f. Modified Condition Decision Coverage
- g. Loop Coverage
- h. Loop Testing



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# 09

## CHAPTER

### SELENIUM

#### 1. About Automation testing

- a. Automation means
- b. Why and when we go for automation
- c. Automation tools
- d. Advantage and disadvantages of automation
- e. Criteria for automation
- f. Fundamentals of test automation
- g. Automation Vs Manual testing process
- h. Automation Frameworks

#### 2. About selenium

- a. What is selenium tool
- b. User of selenium
- c. Features of selenium tool



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- d. Advantage and disadvantages of selenium
- e. Installation setup

### 3. Selenium components

- a. Selenium IDE
- b. Selenium RC
- c. Selenium Web driver
- d. Selenium Grid

### 4. Selenium Web Driver

- a. Web driver architecture
- b. Web driver Feature
- c. Web driver VSRC
- d. Web driver Installation
- e. Web driver commands
- f. Running test on chrome
- g. Running test in Firefox
- h. Running test on IE
- i. Running test on safari

# 10

## CHAPTER

### CHAPTER-10

#### 1. Locators

- a. ID
- b. Name
- c. Link text
- d. Partial link text
- e. Class name



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- f. Tag name
- g. Absolute Xpath
- h. Relative Xpath
- i. Dynamic Xpath

## 2. Xpath

- a. Contains Xpath
- b. Text Xpath
- c. Text contains Xpath
- d. Attribute with contains
- e. Following
- f. Ancestor
- g. Child
- h. Preceding
- i. Following – sibling
- j. Parent
- k. Descendant

# 11

CHAPTER

## WEB ELEMENTS

### 1. Web Elements in selenium

- a. What are web elements in selenium
- b. Different types of web element
- c. Operations performed in web elements
- d. How to locate web element in web page
- e. Different web element methods
- f. Difficulties while handling web elements
- g. Handling waits



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## 2. Web Driver commands

- a. Fetching a webpage
- b. Locating elements and sending user inputs
- c. Clearing the user inputs
- d. Fetching data over any web element
- e. Performing click event
- f. Radio button and check box
- g. Navigating browser in forward and backward direction
- h. Refresh and reload the webpage
- i. Closing windows and closing browser
- j. Drag and drop
- k. Mouse hover action
- l. Right click and double click
- m. Keyboard action by using robot class
- n. Java script executor
- o. Handling drop down
- p. Handling of window
- q. Handling of alert
- r. Handling I Frames
- s. Handling web table and web calendar
- t. Screenshot

# 12

## CHAPTER

### FRAME WORK

#### 1. Frame work in selenium

- a) What is Framework
- b) Need of Framework
- c) Type of framework in selenium



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## 2. Test NG Framework

- a. What is Test NG
- b. Installation of TestNG
- c. Features of testing and Types of annotations
- d. Priority & invocation count
- e. Rerun for failed test cases
- f. Parallel execution
- g. Grouping
- h. How to set assert in testing
- i. Dependencies and configure maven project
- j. @ data provider using apache poi  
(excel sheet)
- k. Report generations

# 13

## CHAPTER

## PYTHON

### 1. Introduction to python

- a. What is python
- b. Why do we need selenium
- c. Selenium with Java and Python  
(Pros & Cons)
- d. Program Structure

### 2. Python Programming

- a. Basic programming in Python
  - Data Type
  - Collection
- b. Function in python
- c. Modules



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- d. Simple class and objects
- e. Example programs
- f. Installation setup

### 3. Selenium Web driver

- a. Introduction to web driver
- b. Accessing forms in Web driver
- c. Accessing link and table

# 14

CHAPTER

## AUTOMATION FRAMEWORK

- a. Pytest
- b. Create your first test case
- c. Run Multiple test case
- d. Group multiple test case
- e. Assert creation
- f. Pytest mark, skip
- g. Parallel testing
- h. Pytest fixtures
- i. Unit test
- j. HTML report creation



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