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VERSION 6

PROFESSIONAL

MASTER IN AUTOMATED TESTING

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MASTER IN AUTOMATED TESTING

SR. CODE

EAPL/PROF/PRTC29

COURSE CODE

EAPAT

SUB CATEGORY

SOFTWARE TESTING

TOTAL DURATION	THEORY TAKEN	PRACTICAL TAKEN
90 HOURS	27 HOURS	63 HOURS

ELYSIUM ACADEMY MASTER IN AUTOMATED TESTING

COURSE DESCRIPTION

Automation testing in automation test engineer training is the creation, execution and analysis of test cases using software tools and methods to compare test results with expected results. Automation test engineers are nothing but programmers who design, program, simulate and test new or existing software. However, automation testing is a technique used to test software so that the received output can be checked and compared with the expected or anticipated output.

COURSE GOALS

Automated software testing can increase the depth and scope of tests to help improve software quality. Lengthy tests that are often avoided during manual testing can be run unattended. They can even be run on multiple computers with different configurations.and acceptance tests.

FUTURE SCOPE

With the proliferation of IoT devices and applications, organizations and developers are focusing on performance testing of their products. So, according to the latest trends in QA automation testing, in 2023 we will see an explosion in the use of tools such as IoTIFY, MATLAB, Simulink and other simulators.

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01 CHAPTER

GETTING STARTED

01 HRS

03 HRS

01. About Automation

a. Automation Means?
b. Why and when to go for Automation?
c. Automation Tools
d. Advantages of Automation
e. Criteria for Automation
f. Fundamentals of test automation
g. Automated vs. Manual Testing Process
h. Automation framework

02. About Selenium

a. What is selenium Tool?
b. Use of selenium tool in automation
c. Features of Selenium tool
d. Differences between Selenium and other Tools
e. Advantages of Selenium
f. Limitations of Selenium
g. Installation Setup

03. Selenium Components

a. Selenium IDE
b. Selenium RC
c. Selenium WebDriver
d. Selenium Grid

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04. Selenium IDE

a. Recording the scripts in IDE
b. Running the scripts
c. Saving the scripts and using again
d. Understanding of the object's identification (id, name)
e. Test case vs. test suit
f. Languages supported while recording
g. Synchronization in Selenium IDE (wait commands
h. Testing Vs Selenium IDE
i. When to use Selenium IDE
j. Learning commands in IDE
k. How to put validations (assert, verify)
l. How to read text / values from webpage (store commands)
m. How to handle mouse, keyboard events
n. Running java script from IDE (user extensions)
o. Limitations of IDE
p. What is Seleness statement?

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02 CHAPTER

SELENIUM COMPONENTS

02 HRS

04 HRS

01. Configuration of Selenium Remote Control (RC)

a. Introduction of Selenium RC
b. Architecture of Selenium RC
c. Creating Generic Script for Selenium RC
d. Limitation of Selenium RC
e. Same origin Policy
f. Comparison of Selenium RC &WebDriver

02. Configuring other Browsers

a. Configure IE browser
b. Configure Chrome browser
c. Running scripts on different browsers
d. Execution of scripts on different browsers
e. Perform parallel browser testing

03. TestNG Framework

a. What is TestNG?
b. Create TestNG.xml file
c. Integrate the Selenium Scripts and Run from TestNG
d. Features of TestNG
e. Reporting Results & Analyze
f. Run Scripts from Multiple Browsers
g. Configuring hub
h. Configuring node
i. Running scripts on remote computer

04. TestNG Annotations

a. @BeforeSuite
b. @AfterSuite
c. @BeforeTest
d. @AfterTest
e. @BeforeClass
f. @AfterClass
g. @BeforeMethod
h. @AfterMethod
i. @BeforeGroups
j. @AfterGroups

05. Selenium WebDriver

a. WebDriver-Architecture
b. WebDriver-Features
c. WebDriver Vs RC
d. WebDriver-Installation
e. First Test Case
f. WebDriver Commands
g. Running Test on Chrome
h. Running Test on Firefox
i. Running Test on IE
j. Running Test on Safari

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03 CHAPTER

TOOLS

01 HRS

03 HRS

01. ANT

a. What is Ant?

b. XSLT Report generation using TestNG and ANT

c. Building utility functions

d. Building BAT for project execution

e. Building BAT to run tests using ANT

02. MAVEN

a. Introduction about maven

b. High-Level Overview

c. Ant vs Maven

d. Installation of Maven

e. Creating Maven project

f. Creating build file

g. Running the build

h. Installing Maven in Local Machine

i. Creating Maven project in Eclipse

j. Understanding of POM .xml

k. Maven Integration with TestNG

l. Maven Lifecycle

m. Executing Scripts Using Maven build tool

n. Advantages Maven Build Tool

03. Jenkins

a. About Jenkins

b. History of Jenkins

c. Splitting of Projects

d. What is Continuous Integration
e. Installing Jenkins
f. Creating a simple job
g. Integrating Jenkins to the Project
h. How to create built from Jenkins
i. How to configure Jenkins

04. SVN/GIT

a. What is Ant?
b. XSLT Report generation using TestNG and ANT
c. Building utility functions
d. Building BAT for project execution
e. Building BAT to run tests using ANT

04 CHAPTER

TOOLS-2

01 HRS
03 HRS

01. Locators Selenium

a. ID
b. Name
c. Link text
d. Partial Link Text
e. Class Name
f. Tag Name
g. Xpath
h. Absolute Xpath
i. Relative Xpath
j. Dynamic Xpath

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05
CHAPTER

CORE JAVA

01 HRS
03 HRS

01. Core Java

a. About Java
b. Comparison with C and C++
c. Features of Java
d. JDK,JRE,JVM overview
e. JDK Directory Structure
f. Installation Setup

02. Packages

a. About packages
b. Need for packages
c. Package declaration in Java
d. Import statement in Java
e. Static import in java
f. Resolving name clashes in packages

03. OOPS

a. Classes and Objects
b. Defining a class;Defining instance variables and methods
c. Defining a class, variable and method
d. Method Signature; method call
e. Creating objects out of a class
f. Method calls via object references

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04. Abstracts and Inheritance

a. Interfaces and Abstract classes
b. Abstract and non-abstract methods
c. What is Inheritance?
d. Extends and implements keywords in Java
e. Super class and Sub class
f. this keyword, super keyword in Java for inheritance
g. Concrete classes in Java
h. Aggregation and Association

05. Polymorphism and Encapsulation

a. Compile time polymorphism -- Overloading of methods
b. Run time polymorphism -- Overriding of methods
c. Method Overriding rules and method overloading rules
d. About Object class and it's methods
e. What is Encapsulation?
f. Protection of data
g. Java Bean, POJO
h. Getters/Setters
i. Memory management in Java
j. Heap
k. Stac
l. Garbage Collection

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06
CHAPTER

IMPORTANT TERMINOLOGIES

01 HRS

03 HRS

01. Datatypes

a. List the data types
b. Operators and its types
c. Conditional Control Statement
d. Looping Control Statement
e. Variables and its types

02. Constructor

a. Constructor
b. Default constructor
c. Non-arg based constructor
d. Parameterised constructor
e. Difference between Constructor and Method
f. Constructor chaining
g. this and super method
h. constructor overloading

03. Strings and arrays

a. String datatype
b. String declaration
c. String Tokenizer
d. String methods
e. String types
f. String memory allocation
g. Manipulations in string
h. Interfaces and classes in String

i. Array Declaration
j. Initialization of Java Array
k. Single dimensional Array
l. Multi-dimensional Array
m. Anonymous Array
n. Cloning an Array

04. Wrapper class and Generics

a. Need of Wrapper classes
b. Autoboxing
c. Unboxing
d. Primitive Wrapper Classes
e. Need for Generics
f. How Generics works in Java
g. Types of Generics
h. Generic Type Class or Interface
i. Generic Type Method or Constructor
j. Generic Type Arrays
k. Generics with Wildcards

05. Collections and Maps

a. Java Collection Framework
b. Hierarchy of Collection Framework
c. Collection interface
d. Iterator interface
e. Methods of collection interface
f. List, Set, Queue
g. Collections utility class
h. About Map interface

i. Methods in Map
j. Iterating a Map
k. Map hierarchy
l. Sorted Map
m. LinkedHashMap
n. TreeMap
o. HashMap

07 CHAPTER

FILE OPERATIONS, SQL

01 HRS

03 HRS

01. SQL

a. Introduction to SQL
b. Table creation
c. SQL Insert
d. SQL Update
e. Applying Constraints
f. SQL Syntax
g. SQL Data Types
h. SQL Operators
i. SQL Database
j. SQL Select
k. SQL Clause
l. SQL Delete
m. SQL Join
n. SQL Keys

02. Excel Configuration

a. Apache poi - Excel Configuration

03. JDBC Connections

a. Establishing connection
b. Types of JDBC driver
c. JDBC-ODBC Bridge Driver,
d. Native Driver,
e. Network Protocol Driver, and
f. Thin Driver
g. Running query
h. Extracting Result

08 CHAPTER

XPATH, COMMANDS

01 HRS
04 HRS

01. Types Of Browser Launch

Desired Capability
b. Downloading driver file
c. Downloading selenium jarfile
d. Chrome Browser Launching
e. Safari Browser Launching
f. InternetExplorer Browser Launching
g. Installing FireBug and FirePath
h. Firefox Browser Launching

02. Xpath & Xpath Axes

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. Self
l. Descendant

03. Web Element

a. What are WebElements in Selenium
b. Different types of WebElements
c. Operations performed on the WebElements
d. How to locate the WebElements on the web page
e. Different WebElement methods
f. Difficulties while handling web Elements

04. CSS Selector

05. WebDriver Commands

a. Fetching a web page
b. Locating elements and sending user inputs
c. Clearing User inputs
d. Fetching data over any web element
e. Performing Click event
f. Navigating backward in browser history
g. Navigating forward in browser history
h. Refresh/ Reload a web page
i. Closing Windows and Closing Browser
j. Handling Windows and Handling Frames
k. · Handling Drag and Drop

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06. Selenium Tool

a. Drag and drop

b. Mouse hover action

c. Right click and double click

d. Keyboard action by using robot class

e. Java script executor

f. Handling drop down

g. Handling of window

h. Handling of alert

i. Handling I Frames

j. Handling web table and web calendar

k. Screenshot

07. Framework

a. Test NG

b. Data Driven

08. 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

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09 CHAPTER

TOOLTIP, GRADLE

01 HRS

04 HRS

01. Auto IT

a. Download and install AutoIT
b. Finding element through element Identifier
c. Writing script on AutoIT editor
d. AutoIT Upload file in Selenium Webdriver

02. Tooltip

a. Advanced User Interactions API
b. Get Tooltip Text in Selenium Webdriver
c. Tooltip using the "title" attribute
d. Tooltip using a jQuery plugin

03. Gradle

a. Gradle-plugins
b. Working with files
c. Ant Integration
d. Dependency Management
e. Extending the model
f. Task inputs & outputs
g. The Java plugin
h. Multiproject builds
i. The build runtime

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SELENIUM WITH PYTHON

CHAPTER 10

INSTALLATION

01 HRS | 04 HRS

a. Introduction
b. Configuration of Python bindings for selenium
c. Installation for Windows users
d. Downloading Selenium server
e. Basic Python

CHAPTER 11

GETTING STARTED

01 HRS | 04 HRS

a. Simple Usage
b. Example Explained
c. Using Selenium to write tests
d. Walk through of the example
e. Using Selenium with remote Web Driver

CHAPTER 12

NAVIGATING

01 HRS | 04 HRS

a. Interacting with the page
b. Filling in forms
c. Drag and drop
d. Moving between windows and Frames
e. Popup dialogs
f. Navigation: history and location
g. Cookies
h. Accessing Links and Table Content in Web driver

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13 CHAPTER

LOCATING ELEMENTS

a. Locating by ID
b. Locating by Name
c. Locating by X Path
d. Locating Hyperlinks by Link Text
e. Locating Elements by Tagline
f. Locating Elements by Class Name, CSS Selectors

01 HRS
04 HRS

14 CHAPTER

WAITS

a. Explicit Waits
b. Implicit Waits

01 HRS
04 HRS

15 CHAPTER

MOUSE ACTIONS

a. Mouse Hover
b. Double Click
c. Right Click
d. Drag and Drop

01 HRS
04 HRS

16 CHAPTER

UPLOAD AND DOWNLOAD FILES

a. Upload File
b. Download File

01 HRS
04 HRS

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17 CHAPTER

CAPTURE SCREENSHOTS

a.Screenshots

01 HRS

04 HRS

18 CHAPTER

UNIT TEST FRAMEWORK

a.Keywords (setup, tear down)

b.Skipping Tests

c. Assertion

d.Create / Execute Test cases and Test Suites

01 HRS

04 HRS

19 CHAPTER

PYTEST FRAMEWORK

a.Install Pytest

b.Pytest - Fixtures (yield)

c.Pytest – Multiple ways to Run test cases

01 HRS

04 HRS

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