

Selenium Python Automation Syllabus

Module 1: An Introduction to Python

- ❖ What can Python do?
- ❖ Why Python?
- ❖ Good to know
- ❖ Python Syntax compared to other programming languages
- ❖ Python Install

Module 2: Beginning Python Basics

- ❖ The print statement
- ❖ Comments
- ❖ Python Data Structures & Data Types - List/Set/Tuple/Dict/Frozen Set etc.
- ❖ Data Structures- Array/Stack/Queue/Linked List (singly, doubly, circular)/Hash table
- ❖ String Operations in Python
- ❖ Simple Input & Output
- ❖ Simple Output Formatting
- ❖ Operators in python

Module 3: Python Program Flow

- ❖ Indentation
- ❖ The If statement and its' related statement
- ❖ An example with it and its related statement
- ❖ The while loop
- ❖ The for loop
- ❖ The range statement
- ❖ Break &Continue
- ❖ Assert
- ❖ Examples for looping

Module 4: Functions & Modules

- ❖ Create your own functions
- ❖ Functions Parameters
- ❖ Variable Arguments
- ❖ Scope of a Function
- ❖ Function Documentations
- ❖ Lambda Functions
- ❖ Exercise with functions

Module 5: Exceptions Handling

- ❖ Exception vs Errors
- ❖ Understanding Exception Hierarchy
- ❖ Exception handling with try/except/else/raise
- ❖ Handling Multiple Exceptions
- ❖ Writing your own /custom Exceptions

Module 6: File Handling

- ❖ File handling Modes
- ❖ Reading Files
- ❖ Writing & Appending to Files
- ❖ Handling File Exceptions
- ❖ The with statement and Context Manager

Module 7: Classes in Python

- ❖ Creating Classes/Objects/Methods
- ❖ Instance/Static/Class Methods
- ❖ Instance/Class/Global/Nonlocal/Local Variables
- ❖ Inheritance/Polymorphism/Encapsulation/MRO
- ❖ Exception Classes & Custom Exceptions with examples

Module 8: Advanced Python Concepts

- ❖ Iterators / Generators / Decorators
- ❖ Property/ Assertion/ Closures
- ❖ Itertools / Lambda with examples in detail
- ❖ Types of Functions

Module 9: Python SQL Database Access

- ❖ Introduction
- ❖ DB Installation
- ❖ DB Connection
- ❖ Creating DB Table
- ❖ INSERT, READ, UPDATE, and DELETE operations
- ❖ COMMIT & ROLLBACK operation
- ❖ Handling Errors

Module 10: Collections

- ❖ Namedtuple
- ❖ Deque
- ❖ ChainMap
- ❖ Counter
- ❖ OrderedDict
- ❖ Defaultdict

Selenium – Web Automation Testing

- ❖ What are locators
- ❖ Types of locators
- ❖ Examples of using Locators
- ❖ Advantages and disadvantages of using locators
- ❖ Introduction of Web Driver
- ❖ Download & configuring Web driver
- ❖ The architecture of selenium web driver
- ❖ Drivers for Firefox, IE, chrome etc.
- ❖ First Selenium Code
- ❖ Introduction to basic commands like get/navigate/refresh etc.
- ❖ Exception Handling in Selenium
- ❖ Web driver Instructions
- ❖ Web elements Instructions
- ❖ Introducing wait – implicit and explicit wait
- ❖ Handling different browsers – Firefox, Chrome and Internet Explorer browser
- ❖ Taking screenshots
- ❖ Handling Java script alerts, confirmations and prompts
- ❖ Working with Windows, Tabs and Frames
- ❖ Working with static and dynamic Web tables
- ❖ Actionclass for Mouse and Keyboard events
- ❖ File Upload and Download
- ❖ Working with web page elements/Controls
Inputbox/Radiobuttons/PageScroll/Dropdown/Multiselect/Date Picker etc

API Automation Testing

- ❖ What is Web service, API, REST APIs etc.
- ❖ Types of HTTP Methods – GET/POST/PUT/PATCH/DELETE etc.
- ❖ Request Object and Response Object Format
- ❖ API Automation using requests lib
- ❖ Assertion of response
- ❖ API Testing with Postman
- ❖ Understanding Collection and Environments in POSTMAN
- ❖ CURL URL, import/export collection in POSTMAN
- ❖ API Automation for Secured APIs using Token based Authentication
- ❖ Overview of What is mocking
- ❖ Live example for API Testing – using Python/Java Web Services

Testing Frameworks

- ❖ Introduction to Unit test/PyTest framework
- ❖ Installing PyTest
- ❖ Identifying Test files and Functions
- ❖ Starting with Basic Tests
- ❖ File Execution
- ❖ Test Suite, PyTest Fixtures
- ❖ Running multiple tests using PyTest
- ❖ Generating Test report
- ❖ Execution of subset of Tests
- ❖ Substring Matching
- ❖ Grouping of Tests
- ❖ Parameterizing Test cases
- ❖ Data-Driven Testing
- ❖ Reading and writing data from Excel

Database Automation

- ❖ How to connect with Database using Python
- ❖ Save Python Objects into Database
- ❖ Cursor vs Connection
- ❖ Parameters required for DB Connection
- ❖ How to fetch Records from Database
- ❖ How to assert Response
- ❖ Fill HTML form using Selenium, Fetch data from Database and assert the output
- ❖ Database Basic Operations such as CRUD

Tools and Frameworks Covered

- ❖ Postman
- ❖ GitHub
- ❖ Logger
- ❖ Jira
- ❖ Trello
- ❖ SDLC
- ❖ Company Norms
- ❖ CTC Components
- ❖ Selenium
- ❖ Database – MySQL / Postgres
- ❖ Pycharm
- ❖ Project Methodologies – Agile/Waterfall/V-Model
- ❖ UnitTest/PyTest
- ❖ Requests Lib