SELENIUM WITH PYTHON COURSE CONTENT

PRE-SELENIUM

Python Introduction

- Introduction to Python
- History of Python
- Comparison with C , C++,Java and Python
- Features of Python
- Python Compilation
- Basic pythonProgram through command prompt

Python Versions

- Python 1x feature
- Python 2X features
- Python 2x endlife
- Python 3X features
- Python 3.8.2

Installation and Setup:

- Download and install Python Download
- Set Environment variables
- Download Pycharm IDE
- Coding standards followed in Pycharm
- Naming standards followed in Pycharm
- Features of Pycharm IDE

Python 3 features

- breakpoint() Built-In.
- Data Classes.
- Customization of Module Attributes.
- Typing Enhancements.
- Timing Precision.
- Context Variables
- Importing Data Files

Python Syntax

- Interactive mode
- Using Script mode
- Single line comments using “#”
- Multi line comments using """ “””

Python Tokens

- Identifiers
- Keywords
- Operators
- Delimiters
- Literals

Python Keywords

- Conditional statement keywords
- Control statement keywords
- Function keywords
- Exception keywords
- Logical operator keywords

Python Identifiers

- Lexical Definitions in Python Identifiers
- Best Practices in Identifiers in Python
- Testing the Validity of Identifiers in Python
- Reserved Classes of Python Identifiers
- Reserved Classes of Python Identifiers
- Leading and Trailing Double Underscores (__*__)
- Leading Double Underscores (__*)

Python Literals

- String literals
- Numeric literals
- Boolean literals
- Collection literals
- Special literals

Python variables

- Creating Variables
- Variable Names
- Assign Value to Multiple Variables
- Output Variables
- Global Variables
- The global Keyword

Data Types

- Text Type(str)
- Numeric Type(int, float, complex)
- Sequence Type(list, tuple, range)
- Mapping Type(dict)
- Set Types(set, frozenset)

- Boolean Type(bool)
- Binary Types(bytes, bytearray, memoryview)

Python Numbers

- Different types of Number system
- int (signed integers)
- long (long integers)
- float (floating point real values)
- complex (complex numbers)
- Number type convertion

Python Casting

- Implicit Type Conversion
- Explicit Type Conversion
- Convert to Int
- Convert to float
- Convert to Complex
- Convert to String
- Convert to Hexadecimal
- Convert to Octal
- Convert to Binary
- Convert to List
- Convert to Set
- Convert to Tuple.

Operators

- Arithmetic operators
- Comparison operators
- Logical operators
- Bitwise operators
- Assignment operators
- Special operators
- Identity operators
- Membership operators

String

- String datatype
- String declaration
- String Tokenizer
- String methods
- String types
- String memory allocation
- Manipulations in string

Boolean

- Boolean Values
- Boolean Strings
- Boolean and logical operators

Python Iterators

- Iterating Through an Iterator in Python
- Iterator vs Iterable
- ForLoop
- NetedForLoop
- How for loop actually works?
- Building Your Own Iterator in Python
- Infinite Iterators

Python PIP

- What is PIP
- Install PIP
- Download a Package
- Listing Installed Packages with pip
- Using a Package
- Package Information with pip show
- Find Packages
- Remove a Package
- List Packages

List

- Create a list
- List Index
- Negative indexing
- Slice lists in Python
- Delete and remove from List
- List Methods

Tuple

- Create a Tuple
- Indexing
- Negative Indexing
- Slicing
- Changing a Tuple
- Deleting a Tuple
- Tuple Methods
- Other Tuple Operations

Set and FrozenSet

- Set
- Access Items
- Change Items
- Add Items
- Get the Length of a Set
- Remove Item
- Join Two Sets
- The set() Constructor
- Set Methods
- Python frozenset() Function

Dictionary

- Accessing Values in Dictionary
- Updating Dictionary
- Delete Dictionary Elements
- Properties of Dictionary Keys
- Built-in Dictionary Functions & Methods
- Other Dictionary Operations
- Iterating Through a Dictionary

Control Statements

- Flowchart for conditional statements
- If statement
- If-else statement
- If-else-if statement
- For loops
- While loops
- Jump statements

Magic Methods

- Magic Methods in Python
- Magic Methods and Operator Overloading
- Overview of Magic Methods
- Binary Operators
- Extended Assignments
- Unary Operators
- Comparison Operators
- Example class: Length
- Standard Classes as Base Classes

Exception Handling in Python

- Exception types
- Usage of Try
- Usage of except
- Usage of Finally
- Usage of BaseException
- Built-in Exceptions
- Raising an Exceptions
- Concrete exceptions
- User-Defined Exceptions

File Handling

- File Handling in Python
- Stream
- Python File Methods
- File Operations in Python
- File reader
- File writer
- Bufffered Reader
- File permissions

Python RegEx

- Python - Regular Expressions
- The match Function
- The search Function
- Matching Versus Searching
- Search and Replace
- Regular Expression Modifiers: Option Flags
- Regular Expression Patterns
- Character classes
- Special Character Classes
- Repetition Cases
- Non greedy repetition
- Grouping with Parentheses
- Backreferences
- Alternatives
- Anchors
- Special Syntax with Parentheses

Oops Introduction

- Oops in Python
- Python Classes
- Object Instances
- Defining and Working with Methods

Procedural Vs Modulor Programming

- Differences between Procedural and Object Oriented Programming
- Procedural Programming
- Languages used in Procedural Programming

Oops Concepts

- Object.
- Class.
- Method.
- Inheritance.
- Polymorphism.
- Data Abstraction.
- Encapsulation.

Python Programs

- Check the given number is odd or not
- Check the given number is even or not
- Print first 100 odd numbers
- Print first 100 even numbers
- Count the number of even numbers from 1 to 100
- Count the number of odd numbers from 1 to 100
- Find the factorial of a given number
- Generating fibbonacci series
- Find the reverse of the given number
- Check the given number is palindrome or not
- Check the given number is armstrong or not
- Find the sum of the digits in a number
- Find the number of digits in a number
- Find the product of digits in a number
- Find the reverse of the string
- Check the given string is palindrome or not
- Print each word's first letter of the given string in capital number
- Check two strings are equal
- Check two strings are Anagram or not

Memory management

- Raw Memory Interface
- Memory Interface
- Object allocators
- Default Memory Allocators
- Customize Memory Allocators
- The pymalloc allocator

SELENIUM:

Selenium Introduction

- Types of Applications (Desktop, Web, Mobile, Hybrid)
- Software Testing Methods (Manual and Test Automation).
- Selenium Introduction
- Selenium Components
- Selenium vs. Other Testing Tools
- Advantages of Selenium
- Integration of Selenium with Other Tools

Selenium Components:

- Purposes and functionalities
- Understanding the components
- Selenium RC
- Selenium IDE
- Selenium webdriver
- Selenium Grid
- When to use Grid

WebDriver

- Third party drivers and plugins
- Driver requirements
- What is WebDriver
- Selenium Architechture
- Simple Program in Selenium WebDriver
- WebDriver methods

Types Of Browser Launch

- Desired Capability
- Downloading driver file
- Downloading selenium jarfile
- Chrome Browser Launching
- Safari Browser Launching
- InternetExplorer Browser Launching
- Installing FireBug and FirePath
- Firefox Browser Launching

Locators

- Inspecting elements in different browsers .
- Id
- name

- classname
- xpath
- tagName
- linkText
- partiallyLinkText
- cssSelector

Xpath

- Contains Xpath
- Text Xpath
- Text Contains Xpath
- Attribute with contains
- Following
- Ancestor
- Child
- Preceding
- Following-sibling
- Parent
- Self
- Descendant

Types Of Xpath

- Relative Xpath
- Absolute Xpath
- Difference between Absolute Xpath and Relative Xpath
- Limitations in Absolute xpath
- Advantages of using Relative xpath

Check Box

- Finding checkboxes count
- Checking the visiblity of Check Box
- Checking the properties of Check Box
- Identifying common locator for all checkboxes

Text Box

- Handling the Text Box
- Checking the visiblity of Text Box
- Checking the properties of Text Box
- Identifying common loactor for all TextBoxes
- Finding Textboxes count
- Entering text into textbox
- Getting the user entered text from textbox

Radio Button

- Handling the Radio Button
- Checking the visiblity of Radio Button
- Checking the properties of Radio Button
- Identifying common loactor for all Radiobuttons
- Finding radiobuttons count

WebElement

- What are WebElements in Selenium
- Different types of WebElements
- Operations performed on the WebElements
- How to locate the WebElements on the web page
- Different WebElement methods
- Difficulties while handling webElemens

Dynamic Locators

- Absolute Path method
- Relative XPath method
- Identify by index
- Preceeding-sibling,Following-sibling concept
- Ancestor ,parent concept
- Common tagname(*) method
- Multiple attributes to locate an element

Desired Capability

- Need for Desired Capabilities
- Different types of Desired Capabilities Methods
- Example for set capability method
- Setting the Property
- Getting the Property

Navigation Commands

- Navigate To Command
- Forward Command
- Back Command
- Refresh Command
- navigate method over get method
- Navigation by using JavascriptExecutor

WebDriver Commands

- Fetching a web page

- Locating elements and sending user inputs
- Clearing User inputs
- Fetching data over any web element
- Performing Click event
- Navigating backward in browser history
- Navigating forward in browser history
- Refresh/ Reload a web page
- Closing Windows
- Closing Browser
- Handling Windows
- Handling Frames
- Handling Drag and Drop

Actions

- Drag and Drop
- Mouseover Action
- Right Click
- Double Click
- Performing Multiple Actions
- Accessing modifier keys using Actions class

Alerts

- Switching into Alert
- Alert methods
- Types of Alert
- Handling the Alert
- Passing the inputs to Alerts
- Entering text into Alert
- Get the text present in Alert

Popups

- Handling the Window based popups
- Handling the Notification popups
- Handling pop-ups using Robot class
- Handling the Login popups
- Chrome Options
- FirefoxOptions
- InternetExplorerOptions

Robot Class

- Need of Robot Class
- Methods to implement this class

- Mouse click using Robot class
- Limitations
- Copy Operations
- Cut Operations
- Paste Operations
- File Uploading
- Alert Handling

Waits

- Need for Waits
- Static waits
- Dynamic waits
- Implicit Waits
- Explicit Waits
- Fluent Waits
- WebDriver Waits

JavaScript

- JavascriptExecutor
- Purpose of JavascriptExecutor
- Click Operation
- Fetching the Data from Weblement
- Sending the Inputs to WebElement
- Scrolling Operations
- Highlighting a WebElement

ScrollUp/ScrollDown

- Scroll the web page by pixel
- Scroll the web page by the visibility of the element
- Scroll down the web page at the bottom of the page
- Horizontal scroll on the web page
- Multiple Scroll
- ScrollBy coordinates

Frames

- Need for Frames
- Identifying a Frame
- Switching to Frames using Selenium WebDriver
- Different ways of switching
- Dynamic frames handling
- Frames Size
- Concept of Nested Frames

Windows Handling

- Importance of Windows Handling
- Handling the Multiple Windows
- Windows Handling using Set
- Windows Handling using List

WebTable

- Analyzing WebTable structure in DOM
- Handling multiple webtables in a page
- Dynamically changing WebTable handling
- Extracting values from webTable
- Analyzing the Tagnames
- Different Scenarios with WebTable

Dynamic WebTable

- Handling Dynamic Tables In Selenium
- Analyzing the Dynamic WebTable
- Analyzing the HTML Tags in Dynamic WebTable
- Different Scenario with Dynamic WebTable

ScreenShot

- Need of Screenshot in Automation testing
- Capture Screenshot in Selenium
- Capture Full Page Screenshot
- Taking a Screenshot of a particular element of the page
- Taking a Screenshot with different file formates
- Random name generation for screenshots
- Screenshot creation for each testcase

Image

- Finding images count in webpage
- Finding broken images count in webpage
- Finding broken image URL
- JavaScriptExecutor code to verify if image
- code to print desired output as per image

Links

- Identifying URL
- Validating URL
- To Find a broken links
- HTTP response code
- Collect all the links in the web page

DropDown

- Select class in Selenium WebDriver
- Different Select commands
- Multiple Select commands
- DeSelect Commands
- Get All options
- Dropdown without Select tag
- Handling dropdown with values changing its position dynamically.

File Upload/File Download

- Uploading files in Selenium WebDriver using Sendkeys
- Uploading files in Selenium WebDriver using Robot Class
- Uploading files in Selenium WebDriver using AutoIT
- Download files in Selenium WebDriver using Sendkeys
- Download files in Selenium WebDriver using Robot Class
- Download files in Selenium WebDriver using AutoIT

Auto IT

- download and install AutoIT
- Finding element through element Identifier
- Writing script on AutoIT editor
- AutoIT Upload file in Selenium Webdriver

Tooltip:

- Advanced User Interactions API
- Get Tooltip Text in Selenium Webdriver
- Tooltip using the "title" attribute
- Tooltip using a jQuery plugin

Browser Stack

- Introduction to Browser Stack
- Cross Browser Testing
- BrowserStack History
- Features of BrowserStack
- Testing The Web Application
- Browser Stack Key Functions
- Testing The Mobile Application In Mobile Browsers
- Testing Of Native,Hybrid Mobile Application In BrowserStack

Sauce Lab

- Saucelab-Introduction
- Value Proposition

- Manual testing on Sauce labs
- Post Execution
- Automated Test Execution
- saucelabs gem
- Execution and Results

POST_SELENIUM

Maven

- Introduction to Apache Maven
- Maven Dependencies
- Maven Plugins
- Controlling The Build
- Maven Release Process
- Deploying to a Repository
- Using Snapshots

Git

- Introduction To Git
- Working Locally With Git
- Working Remotely With Git
- Branching, Merging And Rebasing With Git
- Using The GitHub Website
- GitHub For Windows Basics
- Teamwork With GitHub For Windows
- Social Coding With GitHub

Jenkins

- Continuous Integration or Continuous Deployment concepts
- Installing and Configuring Jenkins
- Freestyle Project Configuration
- Jenkins Pipelines
- Testing With Jenkins
- Pipeline Enhancements o Multi-branch Pipelines and Code Promotion

QTest

- Test plan:Releases and Builds
- Requirements
- Creating Testcases
- Creating and using parameters
- Using data query
- Executing test runs and submitting defects
- Complex scenario

- Setting up qTest explorer(web and desktop)
- using qTest Explorer(Web and Desktop

ALM

- Introducing HP ALM
- Release Specifications
- Requirements Specifications module in HP ALM
- Test Plan Modules
- Defect Management Life Cycle
- Report & Analysis

Bamboo

- Getting started with Bamboo
- Understanding Bamboo
- Getting started with Java and Bamboo
- Getting started with .NET and Bamboo
- Configuring plans
- Deployment projects using Bamboo
- Evaluator
- Developer
- Getting support
- Automatic plan branches
- Quarantining intermittent tests
- Integrating Bamboo with Atlassian applications
- Bamboo remote agent installation guide
- Getting feedback
- Importing data from Jenkins
- Administering
- All administration topics
- Release notes
- Installing and upgrading

Ant

- Introduction to Ant
- Installing Ant
- Ant concepts and terminologies
- Working with Ant
- Integrating ANT into your IDE
- Ant in the Real-World
- Ant Tasks
- Automating your build and testing through Ant tasks
- Using Ant for automated deployment
- Integrating Ant with a version control system

- Creating Custom Ant tasks

BitBucket

- Introduction to Bitbucket
- Bitbucket Installation
- Navigation of Bitbucket
- Introduction to Git.
- Git installation
- Git commands.
- Git with Bitbucket
- Repository creation
- Repository permissions
- Branches
- Branches permission
- pull requests
- merging files
- Repository clone
- Git bash
- Source tree
- Installation of source tree
- User management
- Integration with jira

Gradle

- Gradle-plugins
- Working with files
- Ant Integration
- Dependency Management
- Extending the model
- Task inputs & outputs
- The Java plugin
- Multiproject builds
- The build runtime

JIRA

- Introduction To JIRA
- Test Management In JIRA (Zephyr)
- Advanced Search And Introduction To JQL (JIRA Query Language)
- Generating Reports In JIRA
- Introduction To JIRA Agile

Data Driven:

- Data Driven Explaination
- Excel Types
- Apache poi-ooxml
- Interface , class , methods in apache poi-ooxml
- Read Data from excel
- Write data in excel
- update data in excel
- Creation of Automation scripts reading data from excel

POM Framework:

- Page Object Model
- Advantages of POM
- Implementing POM
- Object repository creation
- Page Factory
- POM Annotation
- Getters and setters
- AjaxElementLocalFactory

JUNIT Framework:

- JUNIT Test Framework
- download and installation of junit
- JUNIT Annotation & API
- JUNIT Assert
- Create JUNIT Test Suite
- JUNIT Ignore Test
- JUNIT ErrorCollector
- JUNIT Parameterized Test
- JUNIT Vs Testng
- Execution metrics from JUNIT

Pytest framework

- Features
- Documentation
- Bugs/Requests
- Changelog
- Identifying Test files and Functions
- Pytest - Starting With Basic Test
- Pytest - File Execution
- Execute a Subset of Test Suite
- Substring Matching of Test Names
- Pytest - Grouping the Tests

- Pytest - Fixtures
- Pytest - Conftest.py
- Pytest - Parameterizing Tests
- Pytest - Xfail/Skip Tests
- Stop Test Suite after N Test Failures
- Pytest - Run Tests in Parallel
- Test Execution Results in XML

Robot framework:

- Robot Framework Architecture
- Installation
- Standard Libraries
- Built-in Tools
- Test Cases
- Workflow Tests
- Higher-Level Tests
- Data-Driven Tests
- Keywords
- Library Keywords
- User Keywords
- Variables
- Defining Variables
- Using Variables
- Organizing Test Cases
- RobotFramework-Selenium Library
- Installation
- Browser Drivers
- Use Case – Web Testing With Robot Framework And SeleniumLibrary

JBehave FrameWork:

- JBehave Introduction
- How to download & Installation plugin
- Keywords in JBehave
- Stories
- Annotations
- Runner class
- List ,story , Node implementation
- Reports generation

Python Unit Testing Framework

- Unit Testing
- Python Unit Testing Techniques
- Test-Driven Development TDD

- Stubs and Mocks
- PyUnit
- Nose
- DocTest
- Designing a test case for Python Testing using PyUnit

Keyword-driven framework

- Introduction to keyword-driven framework
- Function Library.
- Excel Sheet To Store Keywords.
- Design Test Case Template.
- Object Repository for Locators.
- Test Scripts or Driver Script.
- Retrieving data using keywords

Hybrid framework

- Components of Hybrid Driven Framework
- Function Library
- Excel Sheet to store Keywords
- Design Test Case Template
- Object Repository for Elements/Locators
- Test Scripts or Driver Script

Travel domain

- Domain explanation
- Keywords explanation in travel domain
- Different Modules explanation in travel domain
- Booking Flow explanation
- Different interfaces integration explanation
- Test scenarios preparation
- Testcase preparation
- Defect raising using JIRA
- Automating e-travel site using framework

e-commerce domain

- Domain explanation
- Keywords explanation in e-commerce domain
- End to end flow explanation in e-commerce domain
- Different interfaces integration explanation
- Test scenarios preparation
- Testcase preparation
- Defect raising using JIRA
- Automating e-commerce site using framework

Other Domains Covered

- Banking Domain
- Retail Domain
- Insurance Domain
- Healthcare Domain
- Educational Domain

Manual testing

- Software build process
- SDLC
- STLC
- Introduction to Testing
- Manual and Automation Testing
- Testing Techniques
- Testing principles
- Test scenario and Testcases preparation
- Software testing medhodologies
- Functional and non-functional testing
- Detailed explanation for Waterfall methodology
- Detailed explanation for Agile Methodology
- Defect raising using JIRA

Agile methodologies

- Agile Methodologies Overview
- Agile Scrum
- Agile ceremonies
- Agile artifacts
- Kanban
- Adaptive Project Framework (APF)
- Extreme Project Management (XPM)

Appium testing

- Mobile Testing - Overview
- Mobile Testing - Platforms
- Mobile Testing - Device Types
- Native Vs Hybrid Vs Mobileweb
- Appium Architecture
- Prerequisite to use APPIUM
- Install Appium Desktop
- APPIUM Inspector
- Attach Android Emulator to Appium
- ADB commands
- APPIUM Test Case for Native Android App
- Limitations using APPIUM
- Common Encountered Errors In Appium

- Troubleshooting Steps in Appium
- Hardware Perspective
- Mobile Device Testing - Types
- Mobile Testing - Framework Overview
- Mobile Testing - Android Frameworks
- Mobile Testing - IOS Frameworks

API testing

- Set-up of API Test environment
- Types of Output of an API
- Test Cases for API Testing
- Approach of API Testing
- Difference between API testing and Unit testing
- What to test for in API testing
- Best Practices of API Testing
- Types of Bugs that API Testing detects
- Tools for API Testing
- Challenges of API Testing

SOAPUI

- Introduction to SOAP UI
- Functional API testing
- **Supported Protocols/Technologies**
- **SOAP-INTEGRATION with Other Automation Tools**
- SOAP UI Vs Selenium:
- SOAP UI Vs SOAP UI PRO
- SOAP UI PRO Version
- SOAP UI – Version Timelines

Postman

- Postman Introduction
- Working with GET Requests
- Working with POST Requests
- Parameterize Requests
- Create Postman Tests
- Create Collections
- Run Collections using Collection Runner
- Run Collections using Newman

Understanding Real-time scenarios and work culture

- Project explanation
- Challenges faced by tester
- Roles and responsibilities of a tester

- Day to day activities of a tester

Resume preparation

- Your resume is arguably the most critical part of the modern job application process.
- A well-organized, tailored resume will increase your chances of landing an interview while a poorly written resume could get lost in the sea of applicants.
- We will help you to prepare your impressive resume with best specification of your skill set

Mock-Interview

- Mock interviews by Greens technologies gives you the platform to prepare, practice and experience the real-life job interview.
- Familiarizing yourself with the interview environment beforehand in a relaxed and stress-free environment gives you an edge over your peers.
- Our mock interviews will be conducted by industry experts with an average experience of 5+ years. So you're sure to improve your chances of getting hired!

Real-Time project

- To put your knowledge on into action, you will be required to work on two industry-based projects that discuss significant real-time use cases.
- These projects are completely in-line with the modules mentioned in the curriculum and help you to clear the certification exam.