

APPIUM MOBILE AUTOMATION TESTING USING PYTHON – TRAINING SYLLABUS



APPIUM MOBILE AUTOMATION TESTING USING PYTHON – TRAINING SYLLABUS

MODULES

Module 1: Introduction to Mobile Automation Testing (2 Hours)

- Overview of Mobile Application Testing (Native, Hybrid, Web Apps)
- Mobile Testing Challenges & Solutions
- Introduction to Appium – What, Why, and How
- Comparison: Appium vs. Selenium vs. Espresso vs. XCUITest
- Appium Architecture & Components

Assignment:

- Research and compare Appium with Selenium for mobile automation.
- Install required tools and prepare the environment setup document.

Module 2: Environment Setup & Configuration (4 Hours)

- Installing Java, Python, and Node.js
- Installing Appium Desktop and Appium Server
- Setting up Android SDK, ADB, and Android Virtual Devices (AVD)
- Setting up iOS Simulator (for macOS users)
- Installing Appium-Python-Client library
- Setting up IDE (PyCharm / VS Code)

Assignment:

- Set up Appium environment with Android Emulator and verify installation.

Job-Oriented Scenario:

- Troubleshoot ADB device connection errors and environment path issues

Module 3: Python Essentials for Test Automation (5 Hours)

- Python Basics: Variables, Data Types, Functions, Loops, and Conditions
- Object-Oriented Programming (OOPs) Concepts
- File Handling and Exception Handling
- Working with PyTest / Unittest frameworks
- Using Virtual Environments and Package Management

Assignment:

- Write a Python script to read test data from a CSV or JSON file.
- Automate a simple login validation logic using Python functions.

Module 4: Appium Fundamentals (6 Hours)

- Understanding Appium Desired Capabilities
- Appium Server Logs and Session Management
- Locating Mobile Elements:
 - o Using Appium Inspector
 - o Finding elements by ID, XPath, ClassName, Accessibility ID
- Context Switching: Native ↔ Webview
- Handling Touch Actions, Gestures, and Scrolls

Assignment:

- Launch a mobile app using Appium and validate the home screen.
- Perform swipe, scroll, and tap actions using TouchAction API.

Job Scenario:

- Automate onboarding screens with multiple swipe gestures

Module 5: Working with Android & iOS Applications (6 Hours)

- Automating Native Android Apps
- Automating Hybrid Apps (using Contexts)
- Automating Mobile Web Apps (Chrome/Safari)
- Understanding App Package & Activity
- Capturing Screenshots, Logs, and Device Info

Assignment:

- Automate a Hybrid App and validate navigation between contexts.
- Capture screenshots on test failure.

Job Scenario:

- Automate login and dashboard validation for an e-commerce mobile app

Module 7: Data-Driven & Hybrid Framework Development (4 Hours) • Understanding Test Framework Types • Building a Data-Driven Framework using Excel/CSV data • Modularizing Code with Page Object Model (POM) • Logging, Error Handling & Reporting Integration • Managing Test Suites and Configurations Assignment: • Implement a Page Object Model for a sample login app. • Run multiple test data sets using a data-driven approach. Job Scenario: • Design a scalable hybrid framework for Android/iOS testing.

Module 8: Advanced Appium Concepts (5 Hours)

- Parallel Execution using Appium Grid • Integrating Appium with Cloud Device Labs (BrowserStack, SauceLabs)
- Automating App Permissions & Alerts
- Network Simulation & Geo-location Testing
- Advanced Gestures

using W3C Actions Assignment: • Configure and execute tests on BrowserStack mobile cloud. • Validate app functionality under simulated network conditions. Job Scenario: • Automate cross-device validation for Android 11 and Android 14 simultaneously.

Module 9: Debugging & Optimization Techniques (3 Hours)

- Analyzing Appium Logs • Debugging XPath & Locator Failures
- Handling Flaky Tests and Timeouts
- Optimizing Script Performance • Reusability and Maintenance Best Practices Assignment: • Debug a failing test and generate a defect report with root cause.

Module 10: Real-Time Projects (4–5 Hours)

Project 1: E-commerce App Automation • Automate login, search, add-to-cart, and checkout flows.

- Validate payment and order confirmation screens.
- Generate PyTest HTML reports and logs. Project 2: Banking App Functional Testing • Automate authentication, fund transfer, and balance validation. • Validate transaction success messages using assertions. • Implement data-driven tests using Excel input. Project 3: Food Delivery App UI Testing • Validate restaurant search, order tracking, and push notifications. • Perform parallel execution on Android and iOS devices. • Integrate Appium with Jenkins for CI/CD execution

JOB-ORIENTED SCENARIOS

- Automating regression test suites for mobile releases.
- Testing mobile app compatibility across multiple OS versions.
- Integrating Appium tests into CI/CD pipelines.
- Reporting & logging defects with screenshots and execution evidence.
- Working with real devices and cloud test environments.

Duration: 40–45 Hours

Section Hours

Fundamentals & Setup 6 Python for Automation 5 Appium Core Concepts 12 Frameworks & CI/CD 9 Projects & Job Scenarios 8–10

OUTCOME:

After completing this course, learners will be able to:

- Automate Android & iOS apps using Python + Appium.
- Build and deploy scalable mobile automation frameworks.
- Execute tests on real devices and cloud platforms.
- Apply for roles like Mobile Test

Automation Engineer / Appium QA Engineer / SDET (Python).





CONTACT US



+91-8055223360



www.radicaltechnologies.co.in



PUNE | BANGALORE | KERALA | UK



training@radicaltechnologies.co.in