Module – 5 (Selenium IDE)

## 1. What is Automation Testing?

### Definition:

Automation Testing is a software testing method that uses tools and scripts to automatically test an application’s functionality. Instead of testing manually, automation allows for repeated execution of tests quickly and accurately.

### Key Characteristics:

* Tool-Based: Performed using tools like Selenium, Appium, or Cypress.
* Scripted: Testers write scripts in languages like Java, Python, or JavaScript.
* Repeatable: Ideal for regression testing and large test suites.
* Fast: Executes tests much faster than humans.

## 2. Which Browsers Are Supported by Selenium IDE?

### Selenium IDE Overview:

Selenium IDE is a browser plugin that lets you record actions (like clicks, typing, etc.) and then play them back as automated tests.

### Supported Browsers: Only in Fire Fox.. Tests recorded in one browser can also be exported to code for more advanced automation.

### Not Supported:

* Safari
* Microsoft Edge
* Internet Explorer & Google chrome

If you need cross-browser support beyond Chrome and Firefox, use Selenium WebDriver instead of Selenium IDE.

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## 3. What Are the Benefits of Automation Testing?

| Benefit | Explanation |
| --- | --- |
| Speed | Automation executes tests faster than humans, even overnight. |
| Reusability | Scripts can be reused across builds and environments. |
| Eliminates Human Error | No typos or missed steps during testing. |
| Higher Test Coverage | You can test many more scenarios automatically. |
| Continuous Testing | Supports Agile and DevOps with CI/CD pipelines. |
| Data-Driven Testing | Same test can run with multiple input sets (e.g., multiple users). |
| Cost-Effective (Long Term) | Reduces repetitive manual effort = savings over time. |

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## 4. What Are the Advantages of Selenium?

Selenium is one of the most powerful tools for web application automation.

### Key Advantages:

| Advantage | Details |
| --- | --- |
| Free and Open Source | No license required. Large community support. |
| Cross-Browser | Works on Chrome, Firefox, Safari, Edge, etc. |
| Cross-Platform | Runs on Windows, Linux, macOS. |
| Multiple Languages | Use Java, Python, JavaScript, C#, Ruby, Kotlin, etc. |
| Tool Integration | Works with Maven, Jenkins, TestNG, JUnit, Docker, etc. |
| Framework Support | Integrates with hybrid, keyword-driven, BDD frameworks (Cucumber, Robot, etc.) |
| Headless Mode Support | Run tests in the background (no UI). Saves time and resources. |

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### Selenium Components:

* Selenium IDE: For quick recording and playback.
* Selenium WebDriver: For advanced, browser-level automation.
* Selenium Grid: For running tests in parallel on multiple machines/browsers.

## 5. Why Should Testers Choose Selenium Over QTP (UFT)?

QTP/UFT is a commercial testing tool from Micro Focus (formerly HP), while Selenium is open-source.

Detailed Comparison:

| Feature | Selenium | QTP/UFT |
| --- | --- | --- |
| Cost | Free | Paid (Very Expensive License) |
| Browser Support | Chrome, Firefox, Edge, Safari | Mostly Internet Explorer |
| Platform Support | Windows, macOS, Linux | Windows Only |
| Language Support | Java, Python, C#, JS, etc. | Only VBScript |
| Integration | Easy with modern CI/CD tools (Jenkins, Docker, GitHub Actions) | Limited integration |
| Community Support | Huge community and frequent updates | Smaller, commercial support |
| Use Cases | Web application testing (ideal for DevOps) | Good for both web and desktop apps |