Testing with Selenium

Software Testing

- Software Testing includes activities that ensure the identification of bugs, error, defects and another type of technical issues. Generally, Testing is a process of evaluating a system or component. Testing is executing a system to find out gaps , errors or any type of missing requirements.

Tools in trends for software testing:

- Selenium
- Testing Whiz
- HPE Unified Functional Testing
- Test complete
- Ranorex

What is Test cases?

A test case is a document, which has a set of test data , preconditions, expected results and post conditions, developed for particular test scenario in order to verify compliance against a specific requirement.

Typical Test case parameters:
- Test case ID
- Test Scenario
- Test case description
- Test steps
- Prerequisite
- Test data
- Expected result
- Test parameters
- Actual result
- Environment information
- comments

Test cases

Test case ID	Test case name	Test Case Description	Expected Output	Actual Output	Status
1.	Addition	2+2	4	4	Pass
2.	Subtraction	2-2	0	1	Fail
3.	Login	User should provide correct username	Username entered successfully	Username not entered successfully	?

Manual Testing

- Manual testing is a one of the primitive ways of software testing. It doesn't require the knowledge of any software testing tool and can practically test any application.

- The tester manually executes the test cases against the application and compares the actual results with desired results. Any differences between the two are considered as defects and are immediately fixed. The tests are then re-run to ensure an utterly error-free application.

Birth of Selenium

- Jason Huggins created Selenium in 2004

- He created a JavaScript program to control the browser's actions automatically

Automated Testing

- Selenium is an open source, automated testing tool used to test web applications across various browsers.

- Selenium can only test web applications, unfortunately, so desktop and mobile apps can't be tested. However other tools like Appium and HP's QTP can be used to test software and mobile applications.

What is Selenium?

Selenium is one of the most popular open-source tools used for test automation

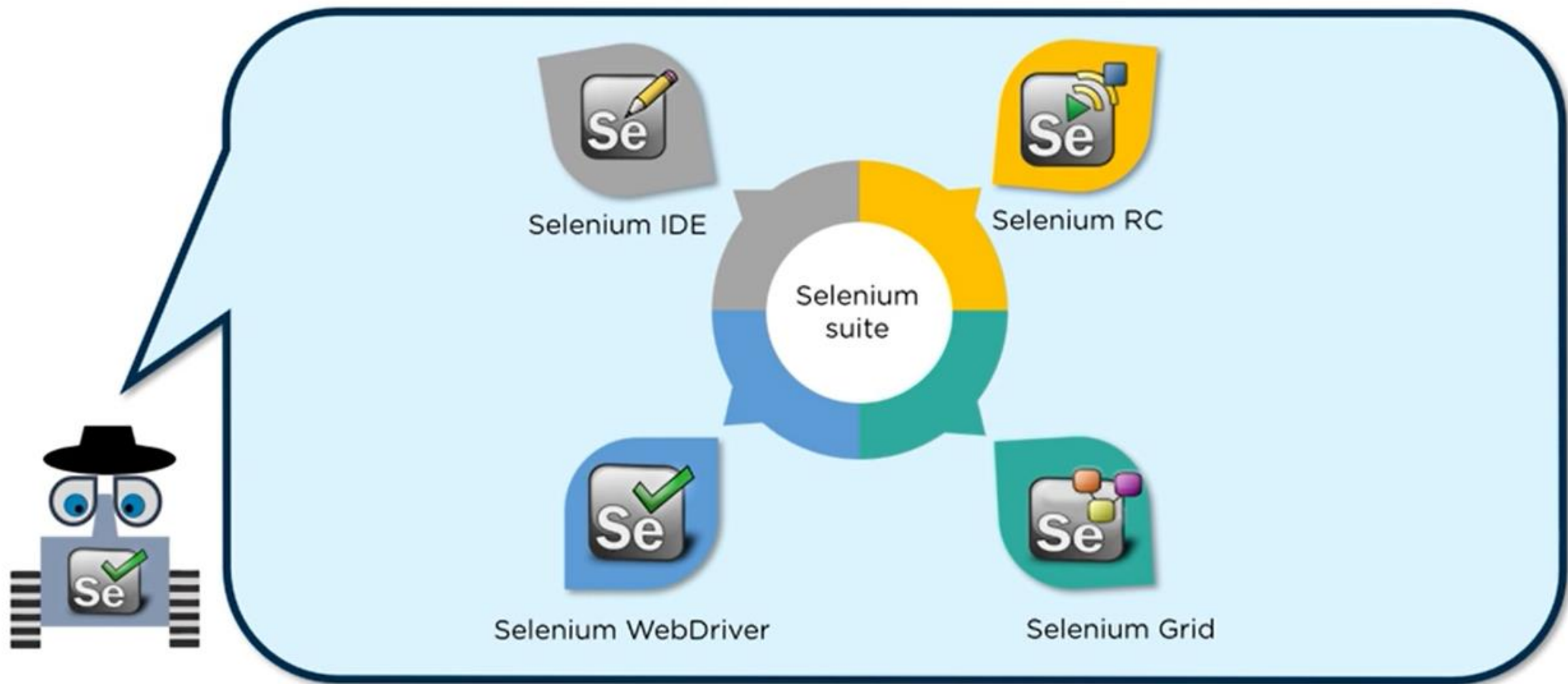The test scripts can be created in various programming languages like Java, C#, Python etc

Selenium only allows the testing of web applications

Selenium is a suite of tools, each tool serves different testing needs

What makes selenium such a widely used testing tool?

- A selenium is easy to use, since its primarily developed in Java script.

- Selenium can test web application against various browsers like Firefox , Chrome , Opera and Safari.

- Tests can be coded in several programming languages like Java, Python, Pearl , PHP and Ruby.

- Selenium is platform – independent means it can deploy on windows, Linux and Macintosh.

- Selenium can be integrated with tools like JUnit and TestNG for test management.

Selenium suite of tools

Advantages of Selenium Testing

1. Selenium has proven to be accurate with results thus making it extremely reliable
2. Since selenium is open-source, anybody willing to learn testing can begin at no cost
3. Selenium supports a broad spectrum of programming languages like Python, PHP, Perl, and Ruby
4. Selenium supports various browsers like Chrome, Firefox, and Opera, among others
5. Selenium is easy to implement and doesn't require the engineer to have in-depth knowledge of the tool
6. Selenium has plenty of re-usability and add-ons

Limitations of Selenium Testing

1. Since Selenium is open-source, it doesn't have a developer community and hence doesn't have a reliable tech support
2. Selenium cannot test mobile or desktop applications
3. Selenium offers limited support for image testing
4. Selenium has limited support for test management. Selenium is often integrated with tools like JUnit and TestNG for this purpose
5. You may need knowledge of programming languages to use Selenium