**TOPICS TO BE COVERED:**

* Selenium
* Cucumber
* Cards
* SQL
* Unix

**SOFTWARE TESTING:**

Software testing is a process of executing a program or application with the intent of finding the software bugs in order to improve the quality of the application. It can also be stated as the process of validating and verifying that a software program or application or product:

* Meets the business and technical requirements that guided it’s design and development
* Works as expected
* Can be implemented with the same characteristic.

**MANUAL TESTING:**

In this method the tester plays an important role of end user and verifies that all the features of the application are working correctly. The tester manually executes test cases without using any automation tools. The tester prepares a test plan document which describes the detailed and systematic approach to testing of software applications. Test cases are planned to cover almost 100% of the software application. As manual testing involves complete test cases it is a time consuming test.

**NEED FOR AUTOMATION TESTING:**

Software tests have to be repeated often during development cycles to ensure quality. Every time source code is modified software tests should be repeated. For each release of the software it may be tested on all supported operating systems and hardware configurations. Manually repeating these tests is costly and time consuming. Once created, automated tests can be run over and over again at no additional cost and they are much faster than manual tests.

Automation testing:

* Faster execution of test cases
* Is more accurate
* Involves lesser investment in human resource
* Supports regression testing
* Allows frequent execution of test cases
* Supports Lights Out execution

There are various tools used for automating testing cases. Some of them are listed below:

**SELENIUM:**

Selenium is a portable, open sourced software-testing framework for web applications.

* Selenium provides a playback (formerly also recording) tool for authoring tests without the need to learn a test scripting language (Selenium IDE).
* It also provides a test domain-specific language (Selenese) to write tests in a number of popular programming languages, including C#, Groovy, Java, Perl, PHP, Python, Ruby and Scala.
* The tests can then run against most modern web browsers. Selenium deploys on Windows, Linux, and macOS platforms. It is open-source software, released under the Apache 2.0 license: web developers can download and use it without charge.

Selenium is composed of several components with each taking on a specific role in aiding the development of web application test automation. These are:

* Selenium IDE
* Selenium WebDriver
* Selenium Remote Control
* Selenium Grid

These components are explained in detail below:

1. Selenium IDE: