**Automation Document**

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**Automation Testing**

* 1. Automation testing is to automate the execution of manually designed test cases without any human intervention. The purpose of automated testing is to execute manual functional tests quickly and in a cost-effective manner.

**Introducing Selenium**

* 1. Selenium is an Open Source tool for automating browser-based applications. Selenium is a set of different software tools. It has four components.

**A screenshot of a cell phone

Description automatically generated**

**Selenium IDE :** Selenium IDE is a simple record and playback kind of tool which comes as an add-on for Mozilla Firefox only. It is used for prototype testing. Test cases written in IDE can be exported in many programming languages like Ruby, Java, C#, etc. Edit and Debug options along with record are also available.

**Selenium RC:** Selenium RC (Remote Control) was the first tool of Selenium Suite. Earlier it was known as JavaScript Executor. RC was the tool which made Selenium. It was the first tool which provided the support for multiple programming languages (JAVA, Ruby, Perl, PHP, Python, and C#). It also supported almost all the major vendors of Browsers like Mozilla Firefox, Google Chrome, Internet Explorer. All the browsers which support JavaScript can be automated using this tool.

**Selenium Web driver:** Selenium WebDriver is the most important tool of the Selenium suite. Because of many limitations with RC, WebDriver was developed. It is Open source. Supports all the key vendors of the browser like Mozilla Firefox, Internet Explorer, Google Chrome, Safari, etc. Support Multiple languages like C#, JAVA, Ruby, Perl, Python, and PHP. Easy to integrate with Testing frameworks. It has Parallel Testing capabilities.

**Selenium Grid:** It is the last component of the selenium suite and is used for parallel testing or distributive testing. It allows us to execute test scripts on different machines at same time. There is a Hub which controls the execution on various machines, and there are multiple nodes on which actual implementation is done.

**Features of the Grid:**

* Parallel Execution on multiple nodes
* Platform Independent, support almost all Operating System
* Language Independent.
* Browser Independent supports almost all the main vendors of Browser.
* Fast Execution reduces the execution time as test cases are executed parallelly.