## What is Selenium?

Selenium is a free (open source) automated testing tool for web applications across different browsers and platforms.

## Selenium has four components.

* Selenium Integrated Development Environment (IDE)
* Selenium Remote Control (RC)
* WebDriver
* Selenium Grid

## Selenium IDE

* Selenium IDE (Integrated Development Environment) is primarily a record/run tool for automate web applications.
* It is a Firefox add-on that creates tests very quickly through its record-and-playback functionality
* Work only on Firefox

## Selenium Remote Control (Selenium RC)

* This is the first automated web testing tool that allowed users to use a programming language.
* Cross browser and cross platform.
* Faster execution than IDE

RC can support the following programming languages:

* [Java](https://www.guru99.com/java-tutorial.html)
* [C#](https://www.guru99.com/c-tutorial.html)
* [PHP](https://www.guru99.com/php-tutorials.html)
* Python
* Perl
* Ruby

## WebDriver

* The WebDriver proves itself to be better than both Selenium IDE and Selenium RC in many aspects.
* It implements a more modern and stable approach in automating the browser's actions.
* It controls the browser by directly communicating with it.

The supported languages are the same as those in Selenium RC.

* Java
* C#
* PHP
* Python
* Perl
* Ruby

**Selenium Grid**

Selenium Grid is a tool used together with Selenium RC to run parallel tests across different machines and different browsers all at the same time. Parallel execution means running multiple tests at once.

Features:

* Enables simultaneous running of tests in multiple browsers and environments.
* Saves time enormously.
* Utilizes the hub-and-nodes concept. The hub acts as a central source of Selenium commands to each node connected to it.

**HTML**

HTML stands for Hyper Text Markup Language

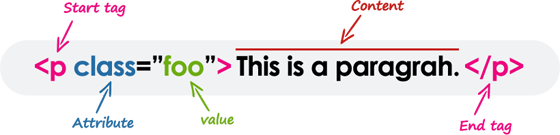
HTML is the standard markup language for creating Web pages

HTML describes the structure of a Web page

**HTML Element Syntax**

An HTML element is an individual component of an HTML document.

Most HTML elements are written with a start tag (or opening tag) and an end tag (or closing tag), with content in between. Elements can also contain attributes that defines its additional properties. For example, a paragraph, which is represented by the p element, would be written as:



**What are Attributes**

* All HTML elements can have **attributes**
* Attributes provide **additional information** about elements
* Attributes are always specified in **the start tag**
* Attributes usually come in name/value pairs like **name="value"**

## SUMMARY

* Sample HTML code

<!DOCTYPE html>  
<body>  
 <h1 id="myHeader" name="kumar">Sriram</h1>

</body>  
</html>

Sample Element

h1 🡪 It is a starting tag

id and name 🡪 Attributes

Sriram 🡪 Content

/h1 🡪 It is an ending tag

**Locators: -** Locators are used to find elements in a web page.

<https://selenium-python.readthedocs.io/locating-elements.html>

**Locater Types:**

1. Locate Element by Name

2. Locate Element by ID

3. Locate Element by Link Text

4. Locate Element by Partial Link Text

5. Locate Element by XPath

6. Locate Element by CSS Selector

7. Locate Element by Tag name

8. Locate Element by Class name