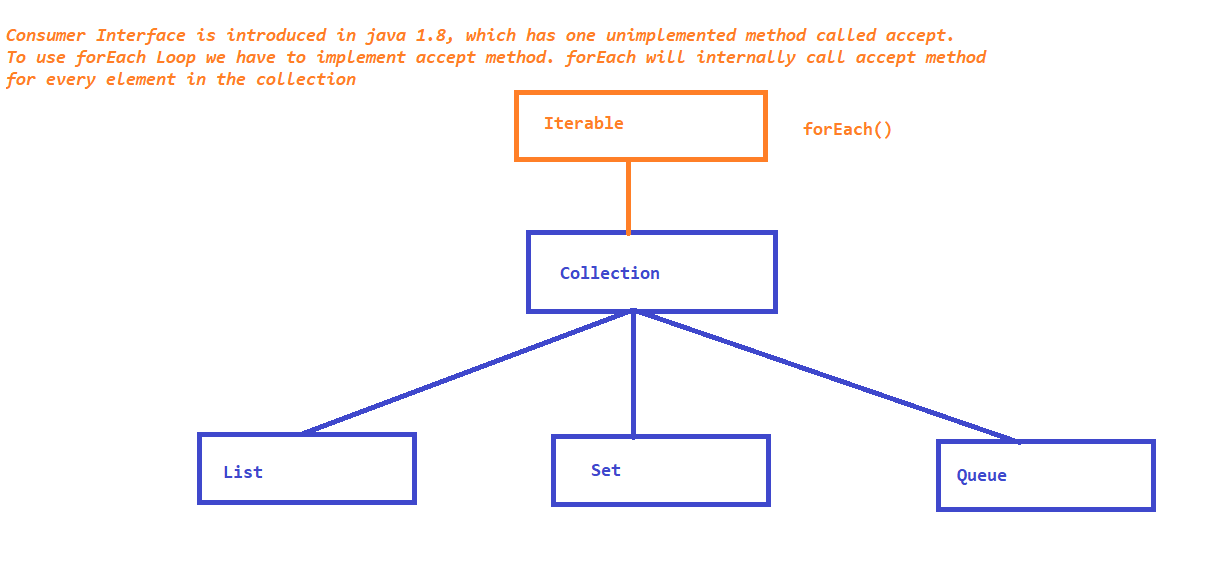
Java – 1.8 Features

* **Interfaces with advanced features**
* **forEach**
* **Lambda Expressions**
* **:: Operator**
* **Stream APIs**
* **Improvements to Collection API**
* **Improvements to IO**
* **Date / Time API**

**ForEach**



Inner classes in java

Inner class / Nested class is a class within a class. which are mainly introduced to achieve ,

1. Better encapsulation

2. To group the logically similar classes

3. for better readable and maintainable code

Types:

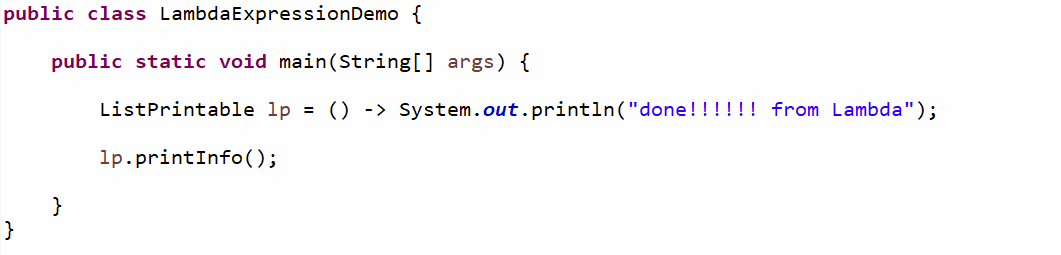
* static inner class :
  + inner class is a member of a parent class
  + inner class is accessible by all the static members of the parent class
* local inner class / instance inner class
  + inner class is a member of a method
  + inner class is accessible only inside the method, and not accessible by any other members of the class
* anonymous inner class

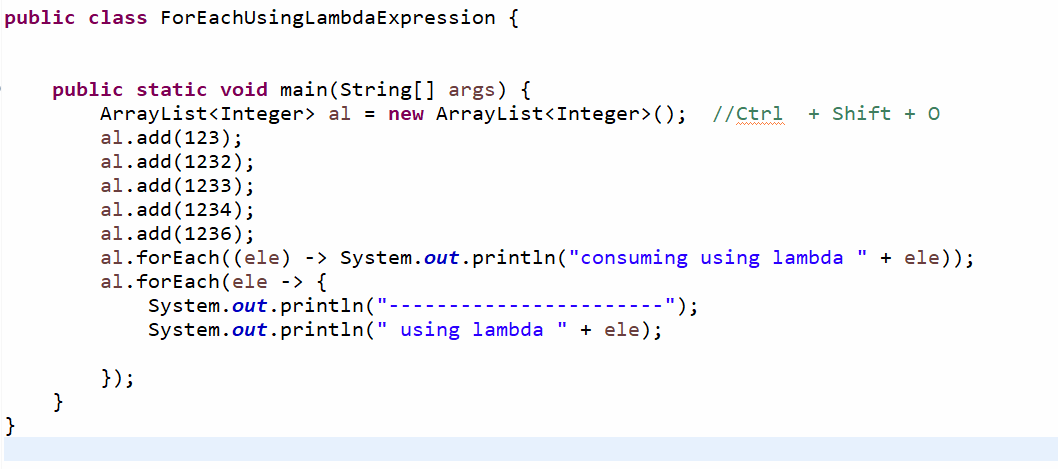
Lambda Expressions

- These are the block of code, which can be executed without object created

- Lambda expressions take no arguments or with arguments and it is capable of returning a value. Lambda expressions are similar to methods.

* Lambda Expressions with no args
* Lambda Expressions with arguments
* Lambda Expressions without return type
* Lambda Expressions with return type
* Lambda Expressions for forEachLoop (consumer accept method)

- 



Inner classes OR nested classes

* static inner class
* local inner class
* anonymous inner class

:: Operator

* :: operator is used to assign the existing implementation to the unimplemented method
  + static method assignment
  + non-static method assignment
  + method with args
  + Narrowing
  + Widening

Stream

Stream is mainly used to process the group of elements that are in collection or array.

Processing elements means, mapping or filtering

Mapping: every element is replaced with other element

Filtering: finding max, min, count, avg etc

1. Get the stream object

* From List
* From Set
* From Map
* From Array
* From Group of Elements
* From Derived Data type

2. Process the stream object

* Applying our own filter
* Sorting
* Descending sort
* compareTo from Comparator
* Parallel Streams

IO Improvements

* list : list all the members of the current dir / specified directory
* walk: walk will print all the files which are present even in subdirectory
* lines: For lines function we need to pass file. lines function will print each and every line in a file

Collection API Improvements

sdf

Date And Time Improvements

Selenium

* Selenium IDE
* **Selenium WebDriver**
* ~~Selenium RC~~
* Selenium GRID

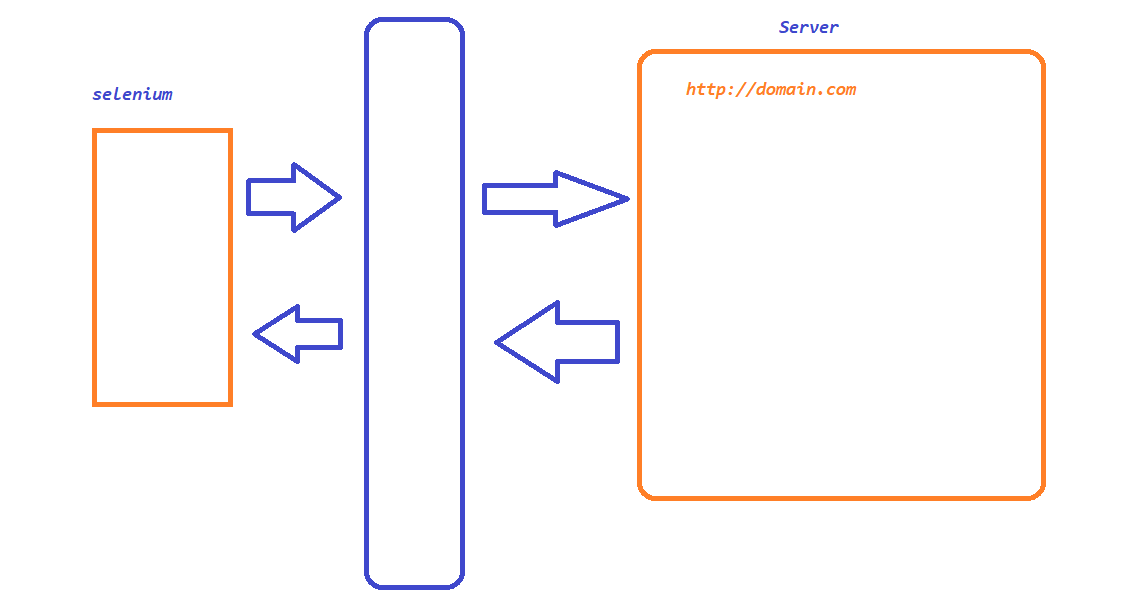
Features :

* Opensource
* Supports multiple programming languages – java, c#, ruby, python, js
* Selenium supports almost all the popular browsers
* No dedicated machine is required for Test Execution
* You can execute your test in any platform
* Distributed Execution
* Pre-Defined Frameworks – which can be easily integrated with Selenium

## Selenium IDE

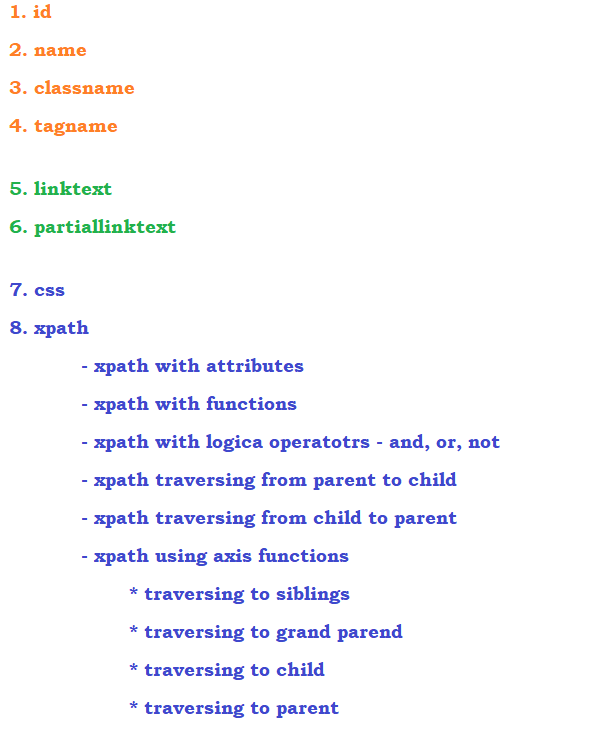
* SELENESE
* How to record and play
* How to put validations in IDE
* Batch Execution

### Selenium RC



# Elements identification:

1. id
2. name
3. classname
4. tagname
5. linktext
6. partiallinktext
7. css
8. xpath



Identification Techniques with Expressions

CSS :

1. css=htmltag[attribute=’value’]

input[placeholder='Enter first name']

2. CLASS NAME :

htmltag[attribute=’value’]

OR

htmltag.classname

OR

.classname

3. ID

htmltag[attribute=’value’]

OR

htmltag#value

OR

#value

4. PARENT to CHILD

div[class='col-sm-8 col-sm-offset-2'] > #last-name

Xpath

xpath always start with / or //

* 1. absolute path we use /
  2. relates path can be represented by //

1. **Basic xpath**
   1. //htmltag[@attribure=’value’]
      1. //div[@class='exehdJ']
2. **Logical operators**
   1. //htmltag[@attribute1=’value’ and @attribute2 =’value’]
   2. //input[@class='form-control' and @placeholder='Enter last name']
   3. //htmltag[@attribute1=’value’ or @attribute2 =’value’]
   4. //htmltag[not @attribute2 =’value’]
   5. //div[@id='rb-calendar\_onward\_cal']//td[@class='wd day']
3. **Functions in Xpath**
   1. //htmltag[text()=’exacttext’]
   2. //htmltag[contains(arg1, arg2)]
   3. //div[contains(text(),'Save upto')]
   4. //a[contains(@href,'seller.flipkart.com')]

arg1 – any attribute or function

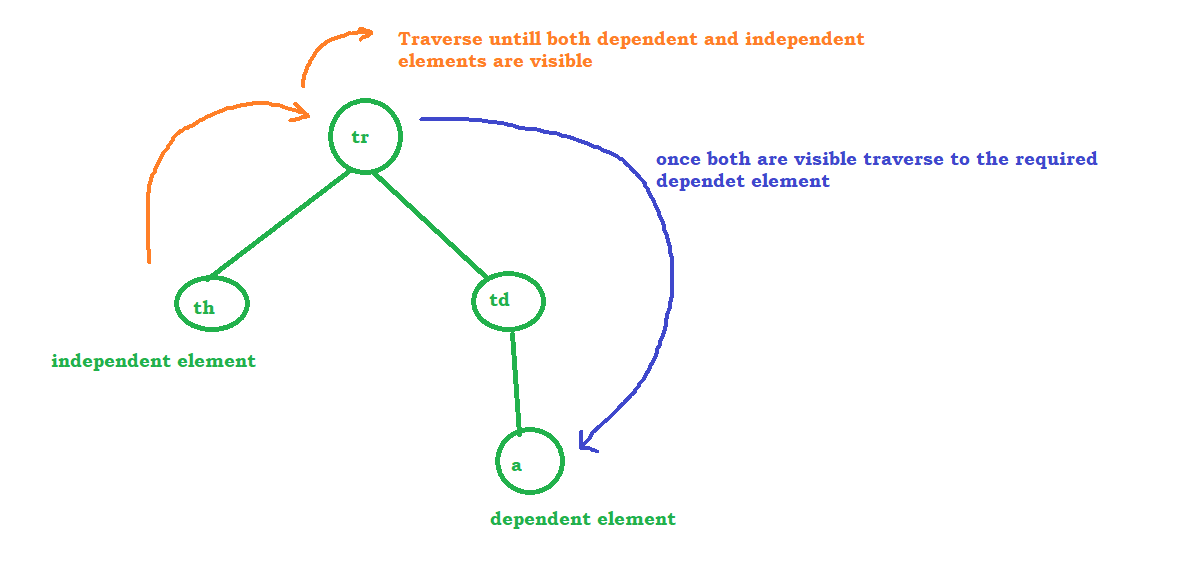
arg2 – corresponding value

* 1. c. //htmltag[starts-with(arg1, arg2)]
     1. arg1 – any attribute or function
     2. arg2 – corresponding value
     3. //span[starts-with(text(),'Watch ')]

1. **Traversing from parent to child**
   1. / if child is a immediate child
   2. // if child is not a immediate child
   3. //div[@id='rb-calendar\_onward\_cal']//td[@class='wd day']
   4. //div[@id='rb-calendar\_onward\_cal']//td[text()='6']

5. **Traversing from child to parent**

//**tr[**th[text()='Directed by']**]**//a



//div[div[h4[text()='My Singapore My Way']]]//p[contains(@class,'price-current')]

6. **xpath using Axis Functions**

- Traversing to next sibling:

//htmltag[attribute=’value’]::following-sibling/<sbilingtag>

//th[text()='Directed by']/**following-sibling**::td/a

- Traversing to previous sibling:

//span[text()='Themes and influences']/**preceding-sibling**::span

- Traversing to from one element till the end o the page using following

//li[@class='toclevel-1 tocsection-7']/**following**::li

- Traversing to from one element till the beginning o the page using following

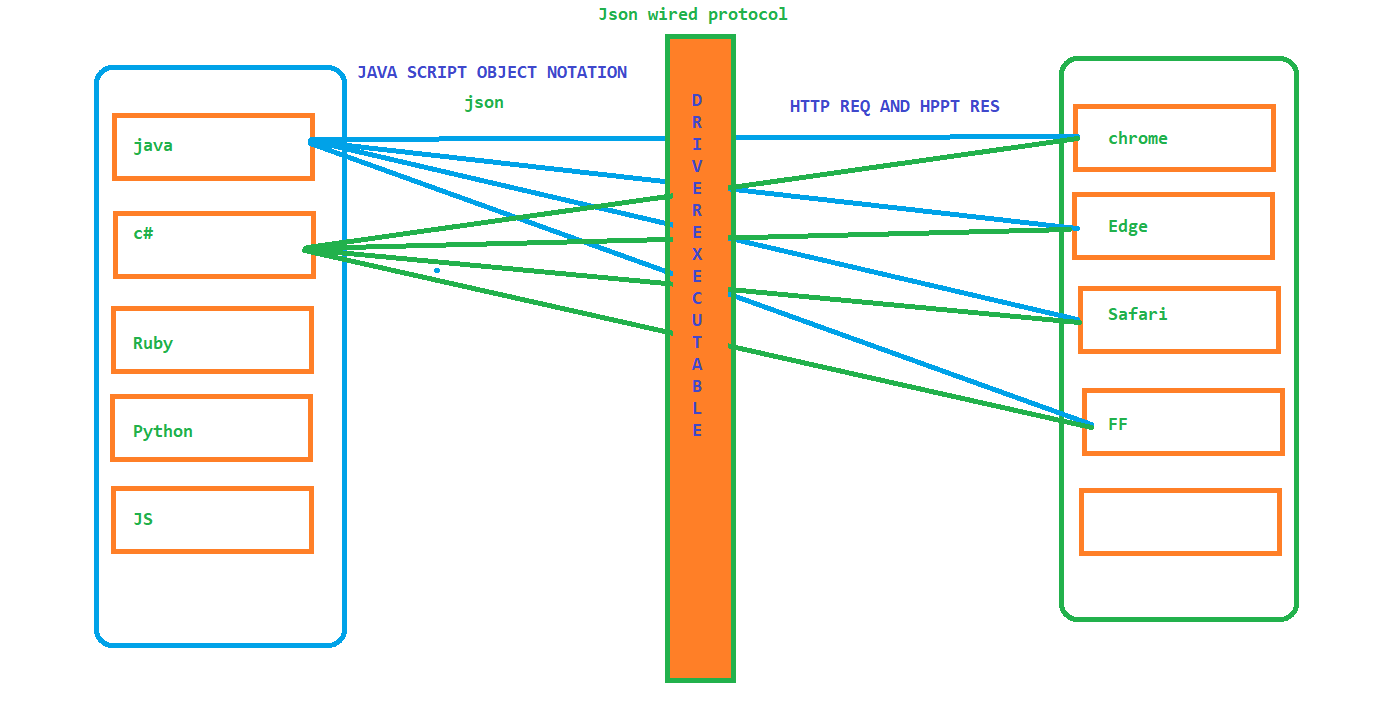
- //li[@class='toclevel-1 tocsection-7']/**preceding**::li

- Traversing to grand parent

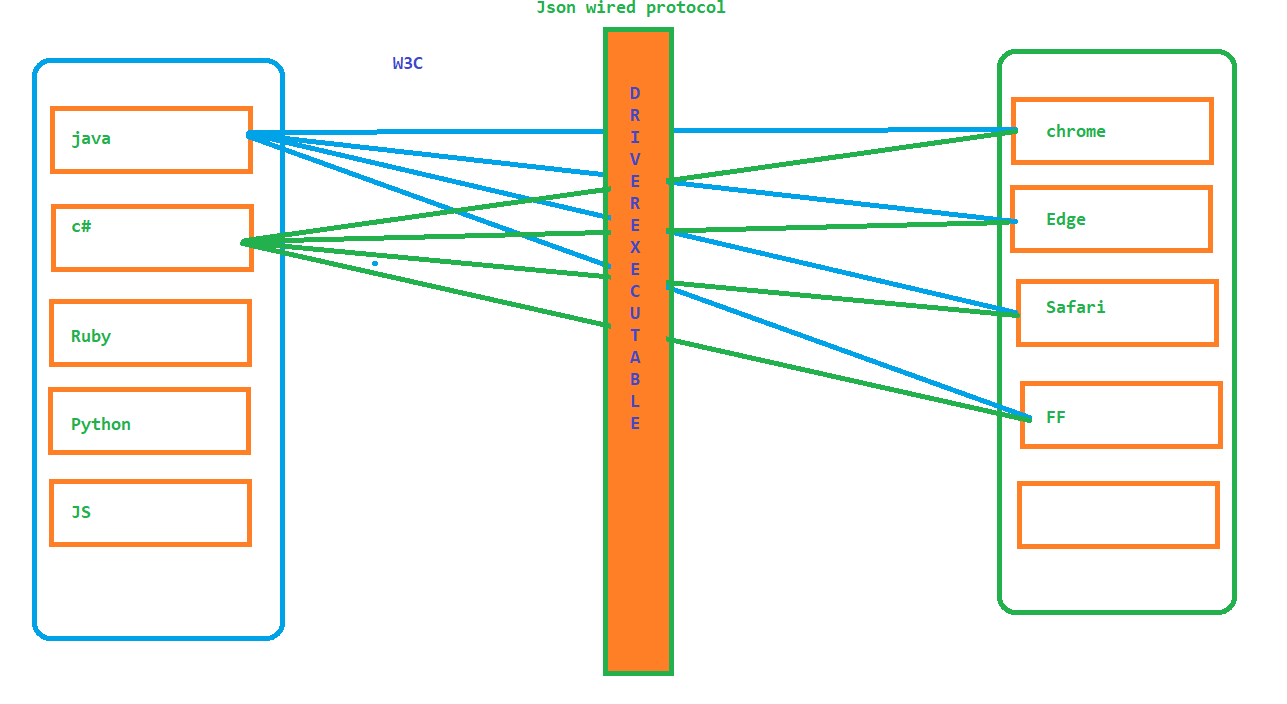
- //li[@class='toclevel-1 tocsection-7']/**ancestor**::tag

//h4[text()='My Singapore My Way']**/ancestor::div[@class='itemCard packageCard']**//p[contains(@class,'price-current')]

3.0 Architecture



4.0 Architecture

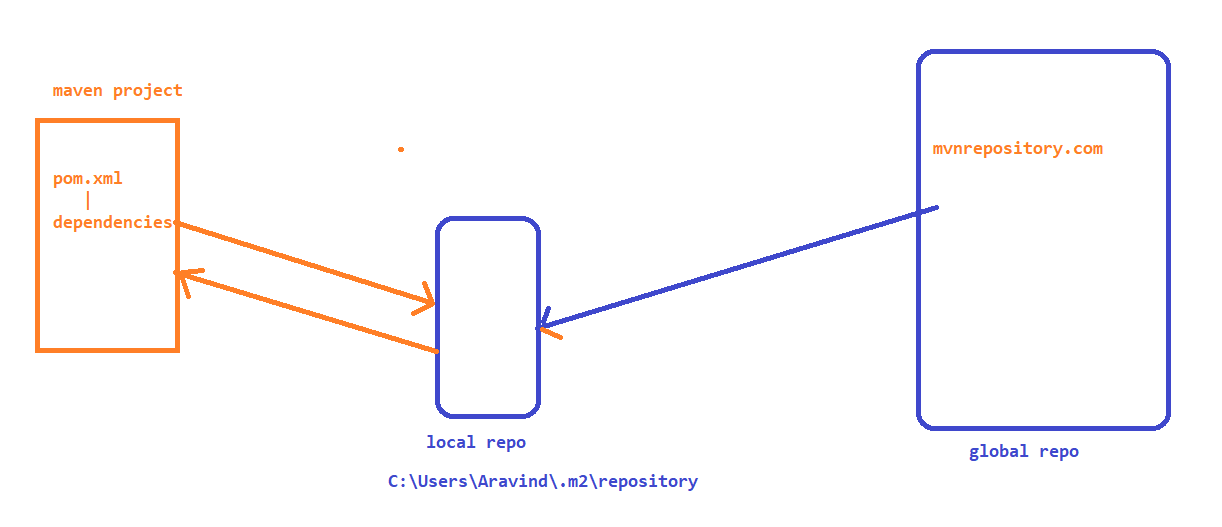


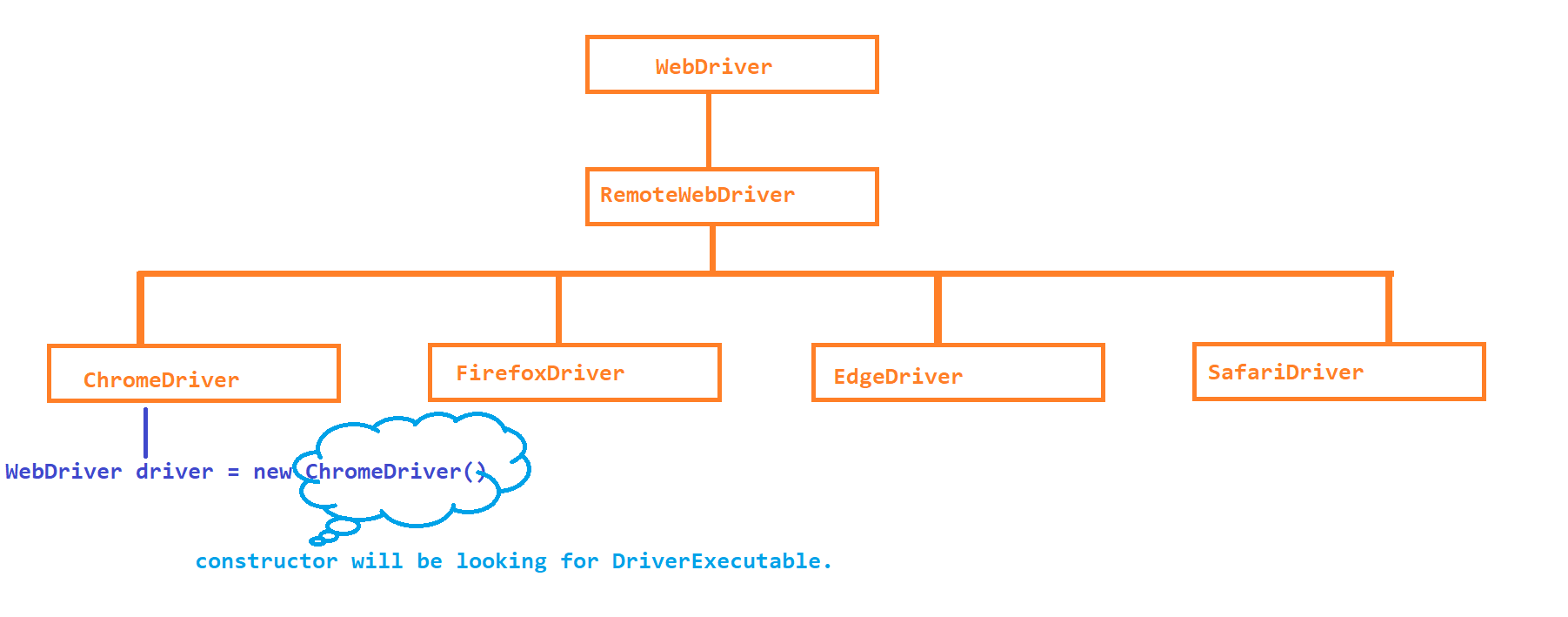
Maven Project

1. Crate a maven project

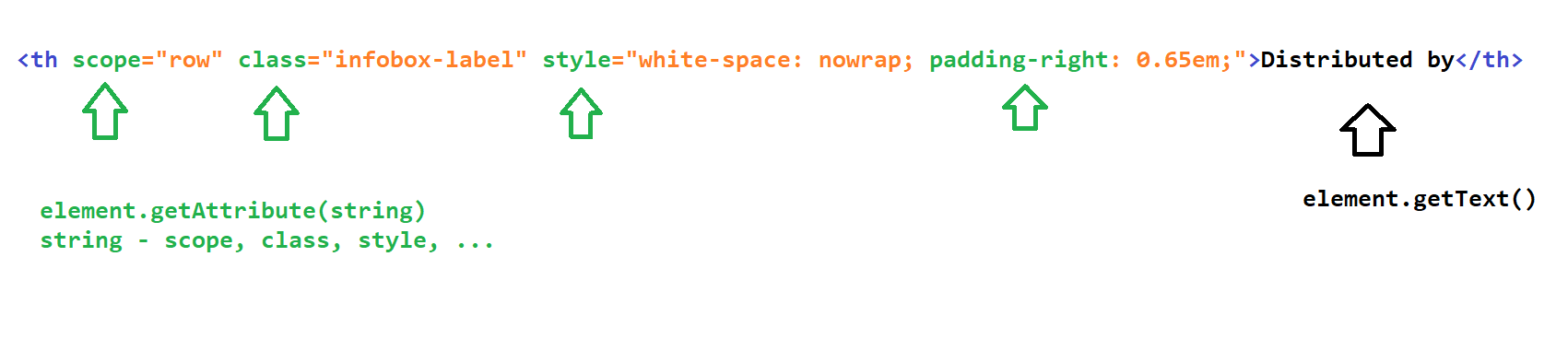
2. update the JDK and JRE version in the project

3. Architecture

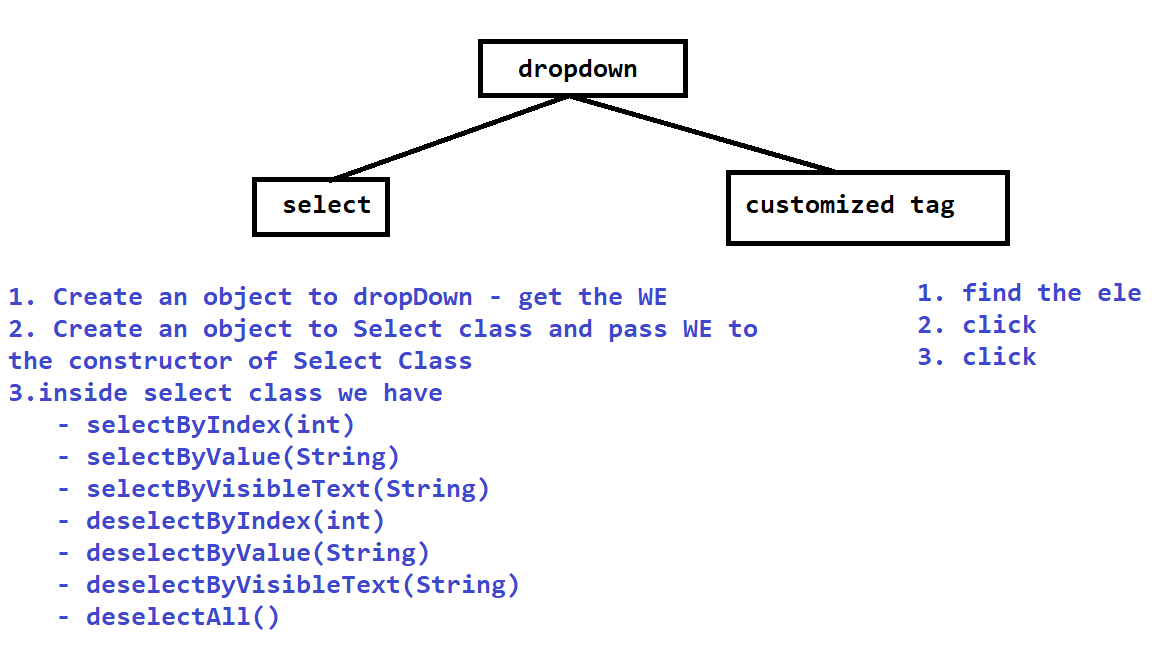




getAttribute and getText in selenium



Handling Dropdown in Selenium

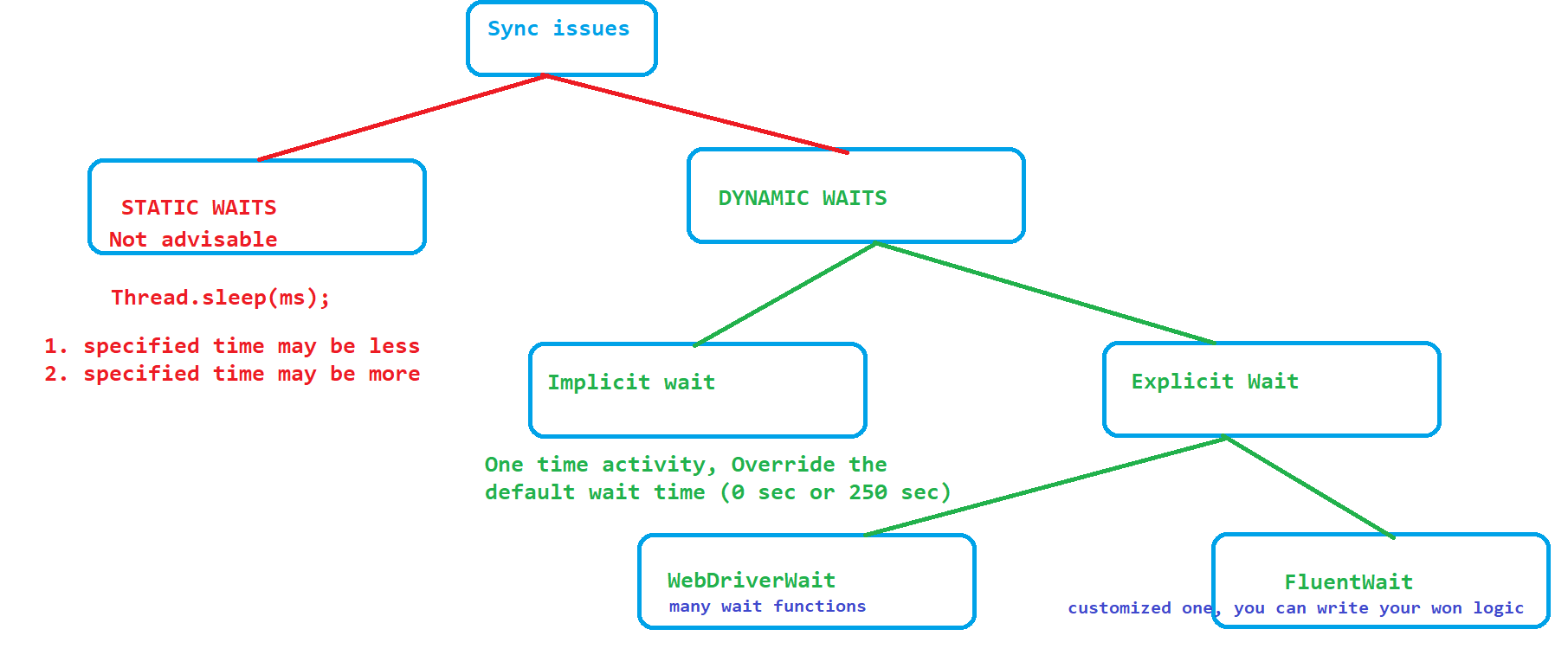


Sync issues

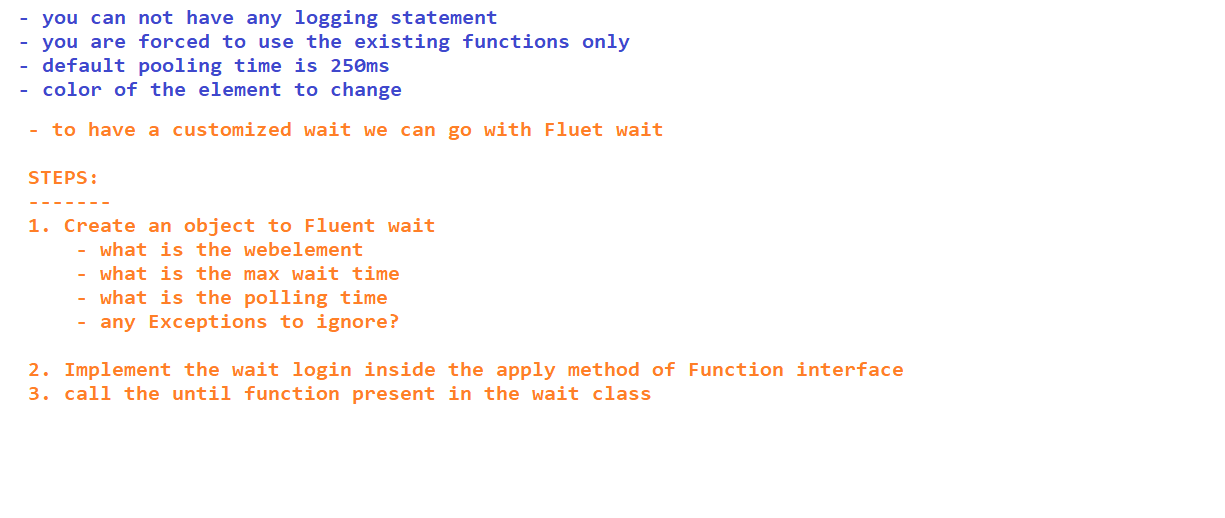
Execution speed of the application is slower than the execution speed of the Tool. so sometime tool will continue the execution even though element is not loaded completely.

Especially when the elements are developed using

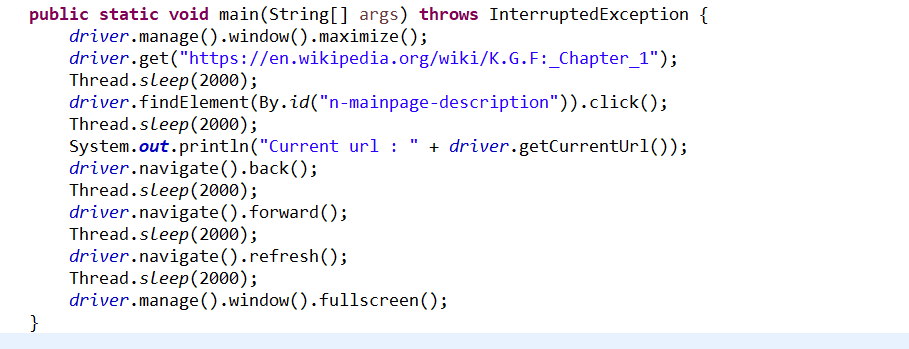
* Javascript
* Ajax
* Angular



Fluent Wait:



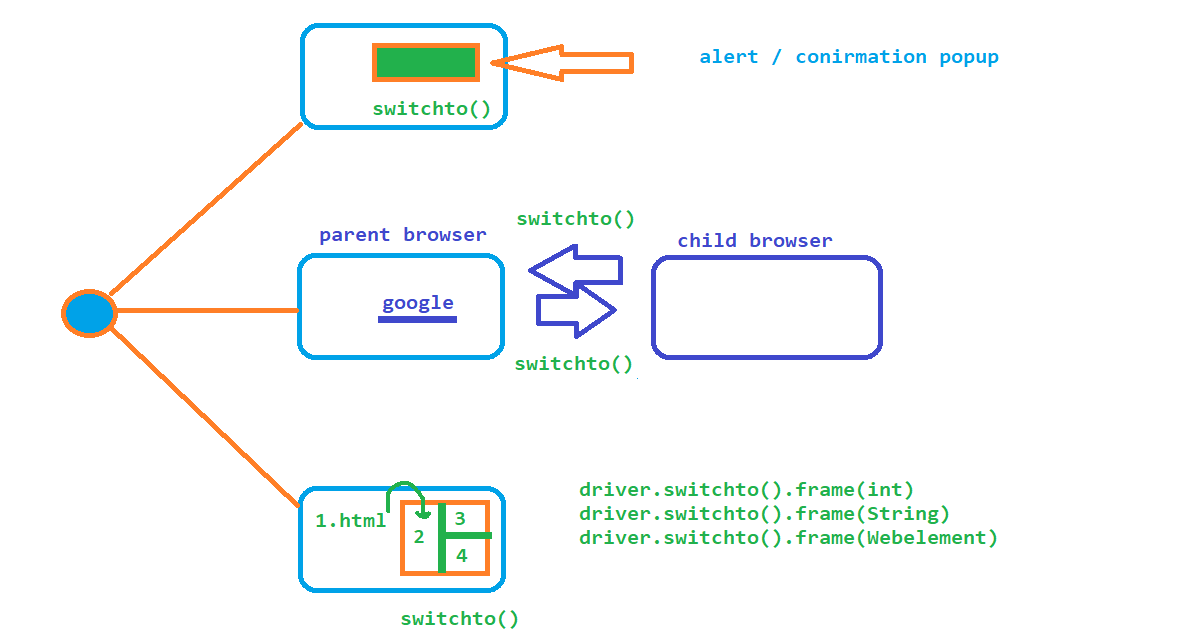
Browser operations



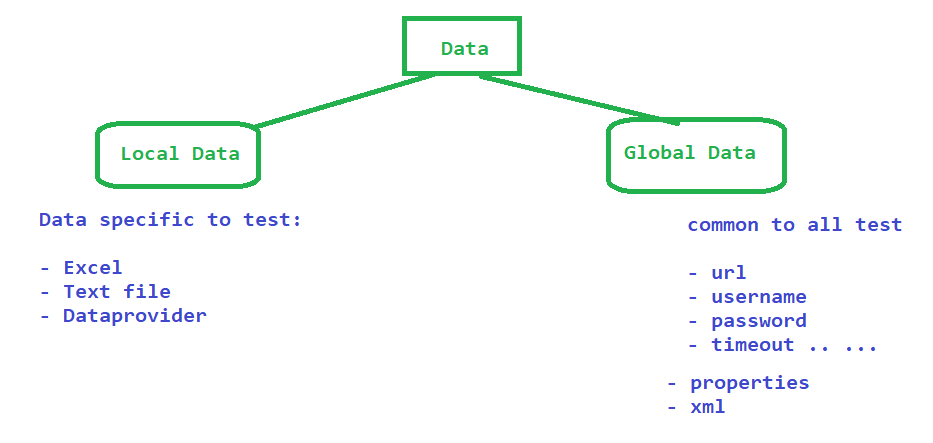
Actions

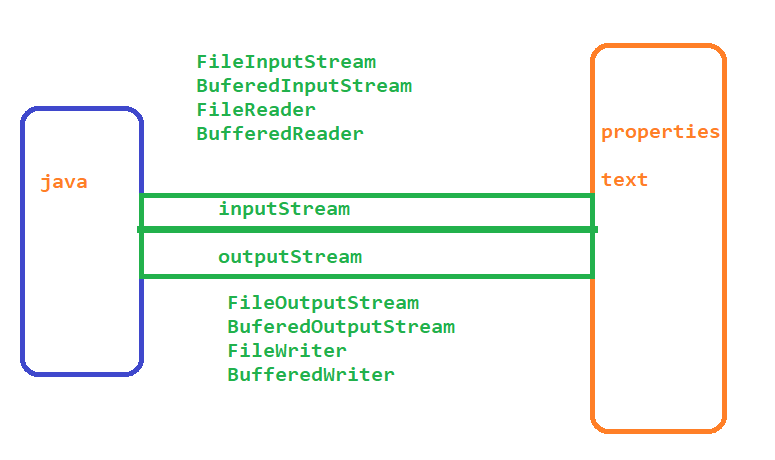
To perform exact keyboard and mouse operations we can go with Actions

SwitchTo



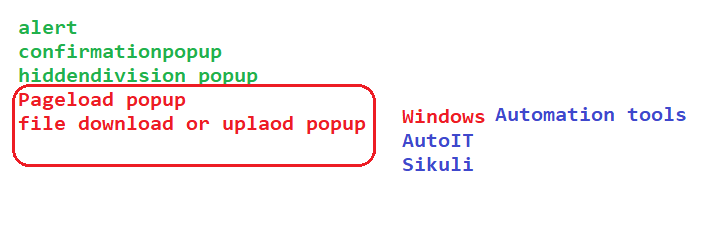
Data driven testing



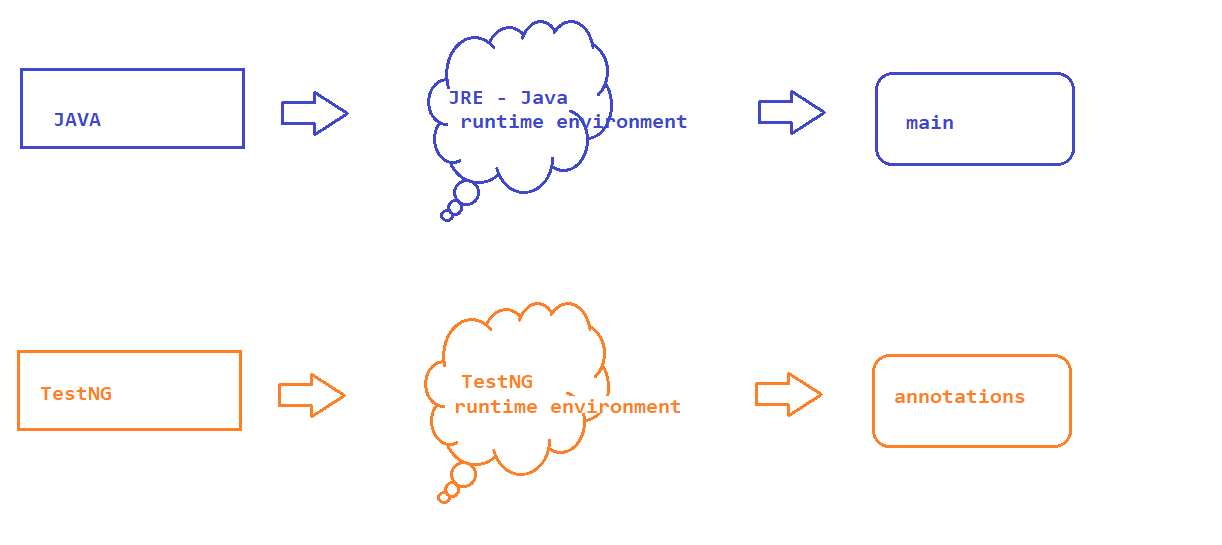


Handling Popups in Selenium

- <https://www.autoitscript.com/site/autoit/downloads/>

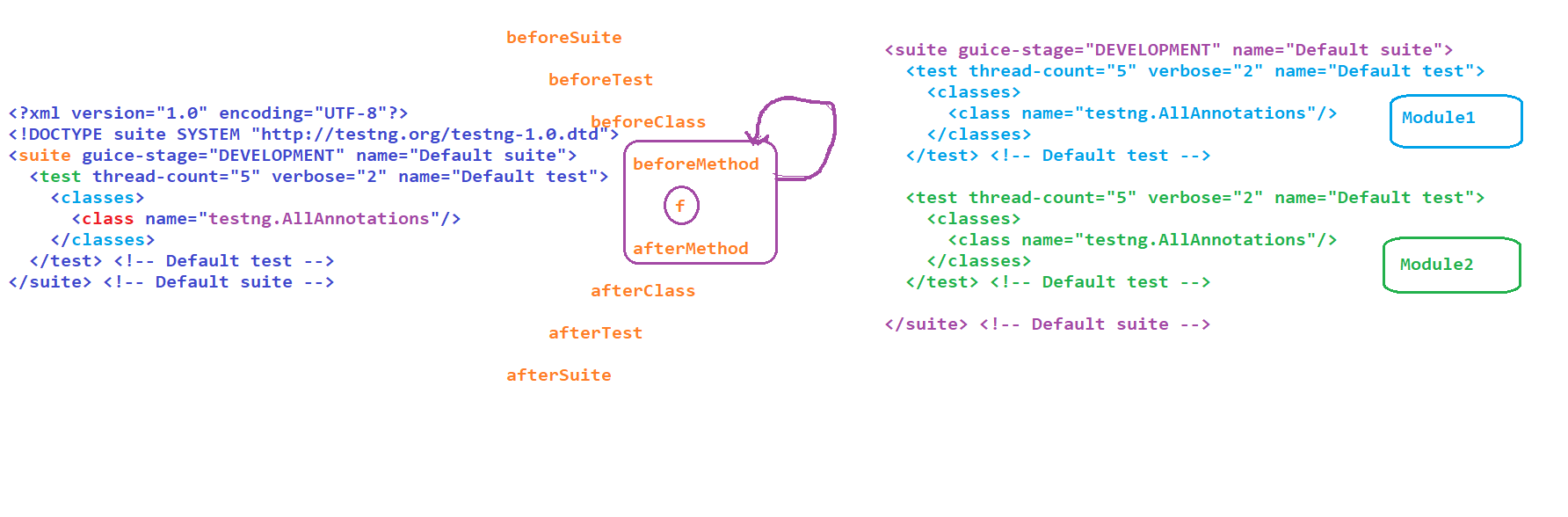


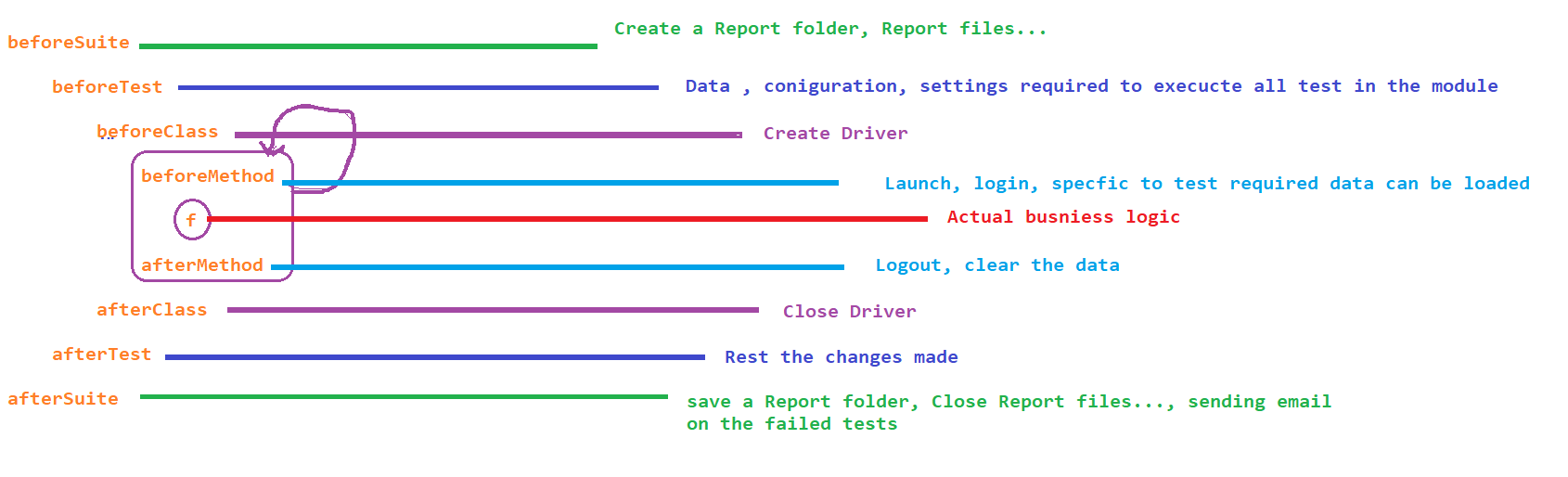
TestNG



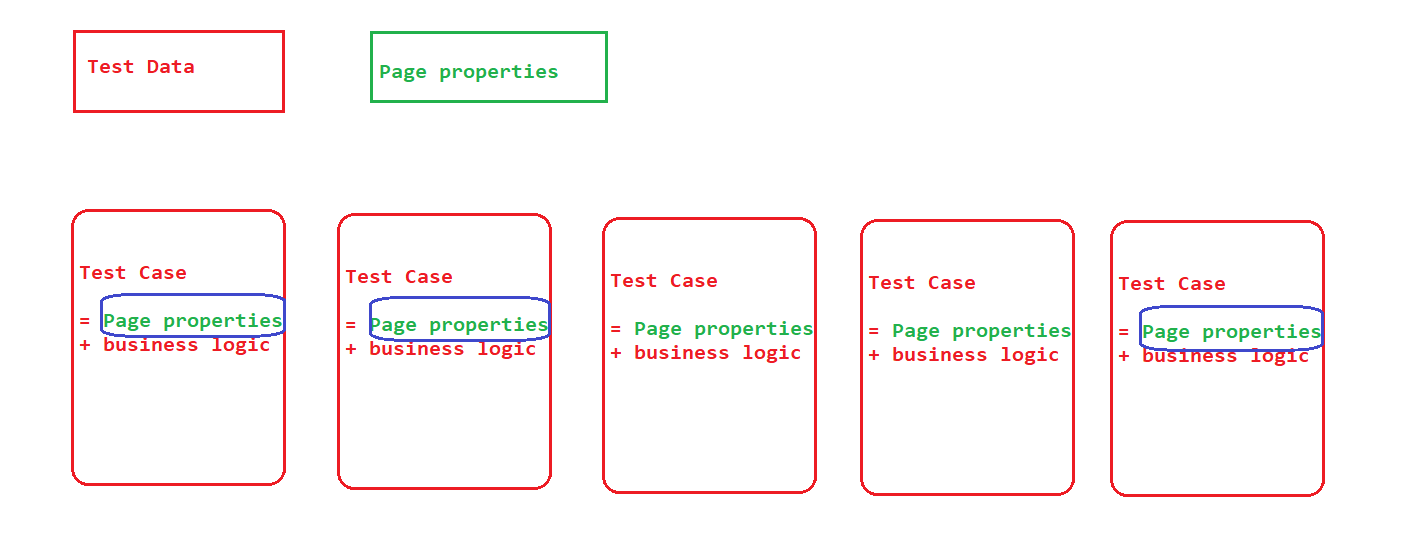
TestNG Project Setup

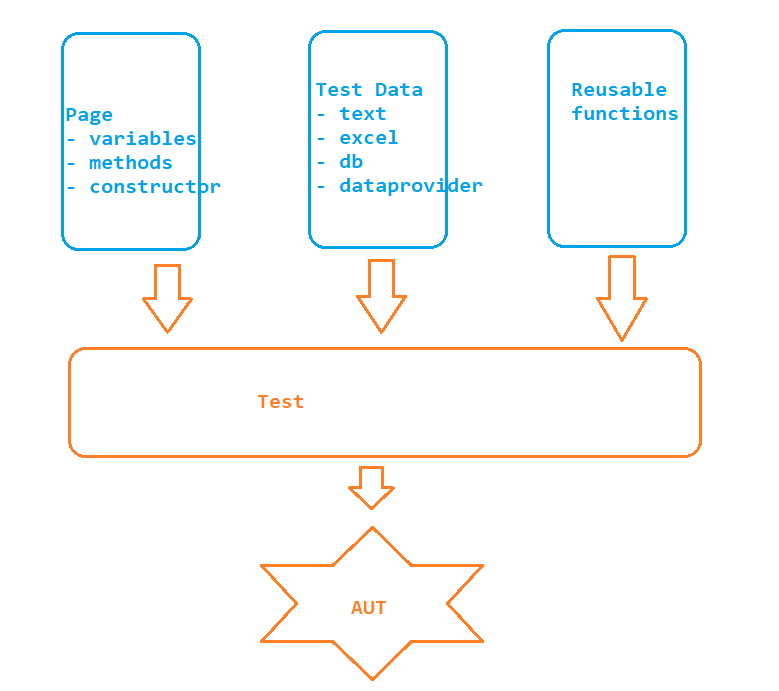
Overview:





POM



Extent Reports

<!-- https://mvnrepository.com/artifact/com.relevantcodes/extentreports -->

<dependency>

<groupId>com.relevantcodes</groupId>

<artifactId>extentreports</artifactId>

<version>2.41.2</version>

</dependency>