*** Skill Set Required for Testing Profile ***

*** Skill Set Required To become a Tester***

```
1) You should know Manual Testing Concept

2) You should one programming Language
   i) Java 2) Pyhton , C++, C#

3) You should know web Automation tool
   i)  Selenium (Most Popular in the Market)
   ii)  Cypress
   iii) Cucumber (For BDD)

***4) API Testing Tool(Webservice Testing Tool)
    Webservice means- Service which is running on web is known as Webservice
    But everthing is online is not considered as web service.
    1) Postman--> This tool is used for REST web service Testing
    2) SOAPUI --> This tool is used to Test Soap Webservice as well as REST Webservice
    3) RestAssured --> This tool is used to test REST Webservice
```

```
5) Mobile Automation Tool
    i) Appium
    ii) Robotium

6) Perforamnce Testing Tools
    i) Apache Jmeter
    ii) WebLoad
    iii) LoadRunner

7)Security Testing Tools
```

```
7)Security Testing Tools

8)Cloud Testing Tools
  i) AWS
  ii) Google Clouds
  Here basic knowdege is required

***9) Microservices Testing Tools
  i) Junit
  ii) Mockito
  iii) Spring Boot
  Here basic knowdege is required
```

```
_________________
10) Other Skill Required(Must)
  i) Agile Srum Methodology
  ii) Bug Tracking Tool--> Jira
  iii) Version Control Tool --> git
  iv)  Containerization Tool --> Docker
  v) Maven/ Gradle
  vi) Jenkin
  vii)SQL
  viii)MS-Excel
```

==========End of Skill required for Testing Profile==========

```
_____________________________________
            ## Manual Testing Concept ##

1) What is Software?
2) Types of Softwares
3) Software Development Life Cycle(SDLC)
4) Different SDLC Model
   i)  Waterfall Model
   ii) Spiral Model
   iii) V-model
   iv)  Agile Model

5) What is Testing?
```

6) Types of Testing
   1) Manual Testing
   2) Automation Testing

7) Typs of Manual Testing
   i) White Box Testing
   ii) Black Box Testing
   iii) Gray Box Testing

8) Types of Black Box Testing
   i) Functional Testing
   ii) Non-Functional

8) Types of Black Box Testing
   i) Functional Testing
   ii) Non-Functional

9) Types of Functional Testing
   i) Unit Testing
   ii) Integration Testing
   iii) System Testing

10) Types of Non-Functional Testing
   i) Perforamnce Testing
   ii) Usability Testing
   iii) Compatibility Testing

11) White Box Testing Technique
    1) Data Flow
    2) Control Flow
    3) Branch Coverage
    4) Statement Coverage
    5) Decision Coverage Testing

12) Black Box Testing Technique
   1) Decision Table
   2) All paire Testing
   3) Cause -Effect Testing
   4) State Trnsition
   5) Use case

13) Testing Technique
  1) Error Guessing
  2) Equivalance Portioning
  3) Boundary Value Analysis

14) What is bug or defect?
15) Bug Life cycle

16) Other Types of Testing
    1) Regression Testing
    2) Smoke Testing
    3) Sanity Testing
    4) Stress Testing
    5) Load Testing
    6) Adhoc Testing
    7) Negative Testing
    8) Positive Testing
    9) Monkey Testing
    10) Globalization Testing

17) How to write Test case?

18) Test template.

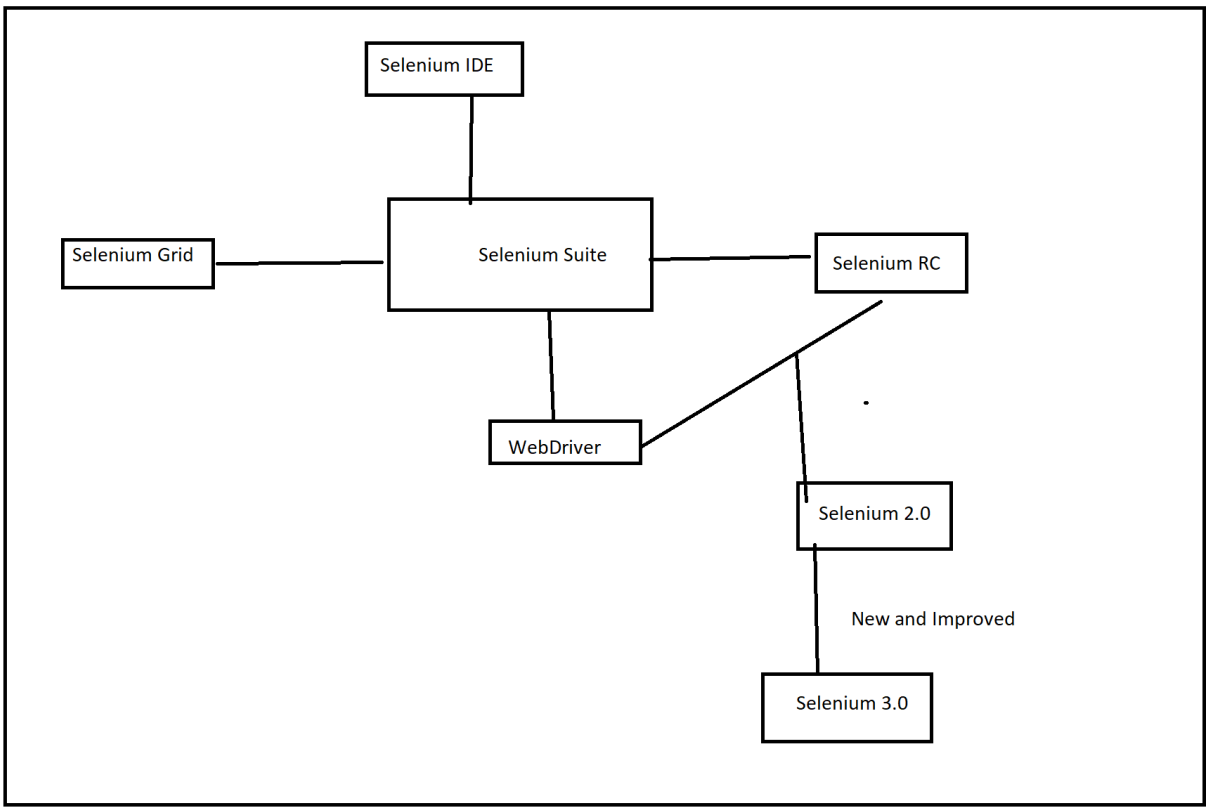
==========End of Manual Testing Concepts==========

```
==========================================
Automation Testing

Q. What is mean by Testing?
Ans: Testing is a process through which we can ensure to deliver
     bug free or defect free software to the Customer.

Q.  Why we do Testing? Or What is main Objective of Testing?
Ans: To ensure bug free or defect free software

     main objective of Testing is to deliver quality product.

Q. Types of Testing
   1) Manual Testing
   2) Automation Testing

Manual Testing : In manual testing tester is responsible to check
                 all functionality manully.
```

```
Automation Testing : in automation testing tester check all functionality
                     with the help of some automation tools

Q. Why Automation Testing?
1) Write ones and execute many times

2) Less numbers of errors as compared to manual Testing

3) It provides rapid feedback to developer

4) Automated test can be kicked off automatically overnight and tester
   can analyse the result in next morning

5) Automation testing tools are able to playback prerecoded and predefined action.

----------------------------------06/03/2022----------------------------------------
```

```
==================================06/03/2022=========================================
Web Automation Tool

To test web application we have different web automation tools/Frameworks
1) Selenium (More Popular in recent market)
2) Cypress
3) Cucumber
    other than above tools there are many tools available in market but nowdays
    selenium is more popular
```

```
About this Selenium Web Automation

1) It is open source. i.e If we want to use selenium in your project then no
   need to pay.

2) It is developed by Jason Huggins in 2004.

3) Selenium is not just one single tool but it is a suite of softwares
   or it is a group of softwares or it is a bunch of softwares

4) Selenium suite has following softwares/ tools/Frameworks

   i)Selenium Integrated Development Enviroment . i.e Selenium IDE

   ii) Selenium Remote Control. i.e Selenium RC

   iii) Selenium WebDriver

   iv) Selenium Grid
```




```
** Features of Selenium
1) It is open source tool

2) It support multiple Programming language like Java,
   Python Ruby Pearl etc i.e Cross Programming language support.

3) It support multiple browsers like - Chrome, Safari, IE, FireFox etc
    i.e Cross browsers support.

4) It supports different operating system like Windows, Linux/Unix, Android, Mac OS.
    i.e Cross Operating system support.

5) Less number of resources are required as compared with other automation tools

6) It support parallel test execution

7) Selenium can be integrated with other tools like Ant, Maven TestNg,Junit
```

```
** Limitation of Selenium
1) Selenium does not support Desktop Application testing

2) To work with selenium tester must have at least one
   programming Language knowdege

3) We cannot perform automation testing on web service using selenium.
   i.e Webservice automation testing support is not available

4) It does not have in build Object respositary to maintain objects
   in cetralized location but we can overcome this limitation by using
   Page Object Model(POM)

5) Selenium does not have inbuild reporting capability,you need to depends
   on Jnuit and TestNG for test report.
```

```
Selenium WebDriver Architecute
1) Selenium webDriver has part. One is client part and another is
   server.

2) Selenium client part has two component
   i)Selenium Client library: in which programming language you are going
     to write automation script that programming language library need to add.

   ii) JSON wire Protocol : this protocol provides data exchage format guidelines

3) Server part we have two component
   i) Browser Drivers
   ii) Real Browsers
```

```
4) Execution flow

    When test script is triggered then selenium client library convert entire
    script code to JSON(JavaScript Object Notation) and handove to JSON wire Protocol

    JSON wire protocol handove JSON to Http Server.

    Browser Drivers interact with specific browsers and execute the commands
    by pasrsing JSON.
```

Diagram of Selenium WebDriver Architecture