

Automation Testing

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Manual Testing:

- Testing software application by human interaction

Automation Testing:

- Testing software application by another software application

Automation Testing Tool:

- A software application which is used to test software application

Examples:

- QTP/UFT
- Selenium
- LoadRunner

Automation Testing Tool types:

- Functional Testing Tool
- Performance Testing Tool
- Database Testing tool etc

Advantages of Automation Testing :

- Reducing time and cost
- Repeatedly use

Sadar Singh Bhukay
Trained By:
14+ Years exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

System testing:

- A system testing is conducted to cover functionality&Non-functionality

Functionality:

- Verifying output of the requirement after operation
- Output of the objects after operation
- It has two type those valid&invalid functionality

Ex: diagram

Non-Functionality:

- Verifying output of the requirement after operation

Example: spellcheck, Alignment etc

Functional Testing Tool:

- A tool which supports for functional testing

Examples:

- QTP/UFT
- Selenium

*Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com*

Purpose of FT Tool:

- Conducting **Regression testing** to cover functionality (valid and invalid functionality)
- Conducting **Data driven testing**
- Conducting **Sanity testing** before release to know stability of release

Regression testing:

- It is a type of testing to re-execute all test cases after re-testing issues are confirmed
- Regression testing can be done at three situation
 - a. Bug is fixed
 - b. New CR/FRS fixed
 - c. Environment changed

Sadar Singh Bhukya, BTech, MSc(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Data driven testing:

- Same test cases executed with different input data

Example:

- Test the login button with different user id and password

Sanity testing :

- It is a type of testing to do before release to know stability of release

General Automation Method by Automation Tool:

1. Conducting retesting with help of retesting issues
2. Generating TSs, If fixed FRS/CR retesting is confirmed
3. Generating TCs for generated TSs
4. Analyze TCs which comes under automation to cover functionality
5. Generating Automation scripts only for pass test cases and adding in frame work ,or else enable pass test case if fixed bug is confirmed

(User defined Framework or default frame work)

6. Executing all scripts for Regression testing on current build ,after changing build path
7. Generating the report of pass and fail test cases

Sadar Singh Bhukya
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhuvay.sadar@gmail.com

Structure of test case script any Testing tool:

Operational statements: Steps

Conditional statements : expected result

Dr. P. S. R. K. , Mtech(CSE)
20230
India
psrkrishna@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

IDE

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Selenium:

- It is an open source automation tool
- Jason Huggins and team invented in 2004
- Originally name is JavaScript Functional Tester (JSFT)

Selenium components:

- a. Selenium IDE
- b. Selenium RC (selenium 1.0)
- c. Selenium Webdriver (Selenium 2.0)

- Writing scripts for test case by java programs with help of JAR files

Frameworks:

- a. Junit
 - b. TestNG
- Writing scripts for test case by java annotations with help of JAR files
- d. Selenium Grid
- It is used to perform testing

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Selenium IDE:

- IDE stands for Integrated Development Environment
- It is a FF browser Add-ons
- It is an editor to write test scripts
- Script is generated for each Test case
- It supports Record&Play to generate scripts
- It supports run test case&test suite

Test suite: Set of test cases is a test suite

- Script written in Selenium IDE called as selenese
- Script statement has three fields ,command, Target and Value

Command:

- It describes what to be done with web element

Target:

- It describes path of web element,
- Web element found by HTML attribute which is called locators

Value:

It describes set of input of values

*Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com*

Installation:

- Download Selenium IDE plug in from seleniumhq.org -
<http://seleniumhq.org/download/>

Accessing Selenium IDE:

- It can be found tools option of FF browser

Recording options:

- a. Remember base URL
- b. Record absolute URL

Selenium IDE Concepts

- 1.Element Locators
- 2.Actions
- 3.Asserts
- 4.Assessors
- 5.Pattern matches /Regular expressions

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

1.Element Locators

- Locating web element by html attribute
 - a. By Using “ID “
 - b. By Using “Name “
 - c. By Using “Link “
 - d. By Using “Xpath “
 - e. By Using “Dom “
 - f. By Using “CSS “

Sadar Singh Bhukya
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Select&Find:

- Select and Find used to spy web element
- Select is used to select target web element field
- Find confirms the target field
- Select&Find confirm the target field to take locator of target field

2.Actions:operation commands: operational statements

- Operation on object

Ex: Click,type,clear etc

3.Asserts:Test case Pass/Fail command: conditional statement

- Confirming expected results

a. Verify:

- This command Used to mention expected result to pass the test case
- Continues execution after failure

Ex: Verify Title, text present,value,text,element present, table

b. Assert

- This command also Used to mention expected result to pass the test case
- Stop execution after failure

Ex: Assert Title, text present,value,text,element present, table

Sadar Singh Bhukya, BTech,MCA
Trained By, MCA(CSE)
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

4.Assessors

- Storing value in variable

Ex:

Store admin v1

Echo \${v1}

Practical:

- Generate scripts for test cases

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

After experience ,Disadvantages of tools:

- No Condition statements
- No Iteration or looping means no data driven testing
- No Database testing
- No Test case grouping
- No Test case dependency
- No Capture screenshots on test failures
- No Results Report generations

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Selenium Webdriver

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Selenium Webdriver :

- It is a scripting Functional Testing Tool
- It supports only web based application
- It is used for Regression Testing, Datadriven, Crossbrowser testing
- It supports Different language to generate scripts to do automation testing, Those are Java,C#.Ruby,Phyton and Java script
- It is a Standalone execution
- Scripts are generated by using free JAR files hence it is a free functional testing tool

Selenium Trained By:
Sadar Patel Bhukay BTech,Mtech(CSE)
10+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Browser supported

1. Firefox (all OS)
2. supports Internet Explorer
3. **ChromeDriver**
4. drives Google's browser (>= 4.0, all OS)
5. **Opera**,
6. **Safari**,
7. **Chromium**,
8. **Android Driver**,

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Selenium Webdriver syllabus:

1. Browser commands

- These commands describe how to handle browsers

2. Weblemnt access commands

- These commands describe How to access webelement

- a. findElement()

- b. findElements()

3. Webelement commands

- These commands describe what to do with webelement

4. Window handle commands

- These commands describe How to handle window bases applications

5. Actions commands

- These commands describe How to handle mouse related operation

6. Synchronization commands

- These commands describe how to synchronization AUT and webdriver

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
sadarsinghbhukya.sadar@gmail.com

Working with Selenium webdriver

1. Downloads selenium webdriver supported files

- Go to www.seleniumhq.org
- a. Selenium Standalone Server jar files
- b. Selenium Client & WebDriver Language Bindings jar files for java
- c. Third Party Drivers, Bindings, and Plugins exe files for browsers

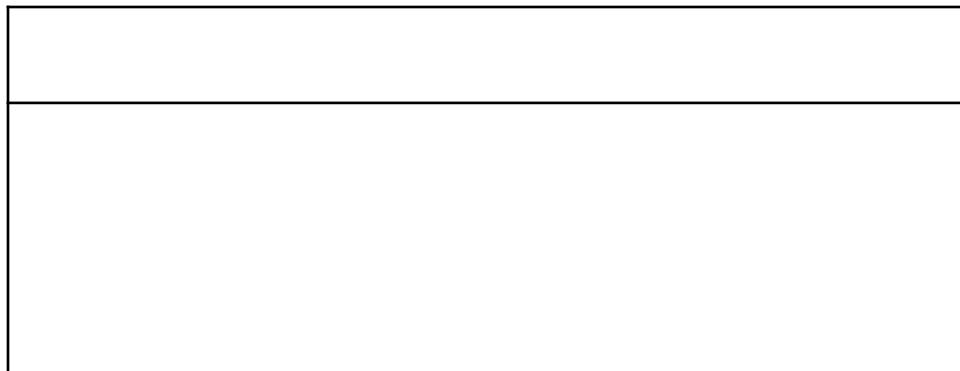
Sadar Singh Bhukya
Trained By:
B.Tech,M.Tech(CSE)
14+ Years EXP
91-9701704230
Dhruv.sadar@gmail.com
Hyderabad, India

1. Adding jar files to project:

Click on right button on project → Build Path → Configure Build Path → Libraries → Add External Jars → select jarfiles add to add → ok

Executing Selenium webdriver program:

```
Webdriver bo=new firefoxdriver()
```



```
public class Testexample {  
    public static void main(String[] args) {  
        System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\Drvers\\geckodriver.exe");  
        WebDriver bo=new FirefoxDriver();  
    }  
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Build Execution

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

:Web Driver script to open Build in different browsers:

1. Build execution in Firefox browser

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class OpenGoogle {
    public static void main(String args[]){
        System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\geckodriver.exe");
        WebDriver driver=new FirefoxDriver();
        driver.get("http://google.com");
    }
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

2. Build execution in ie browser

- System.setProperty is used to execute build on different browser otherthan FF browser

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.ie.InternetExplorerDriver;
public class ieBrowser {
    public static void main(String args[])
    {
        System.setProperty("webdriver.ie.driver", "d://IEDriverServer.exe");
        WebDriver driver=new InternetExplorerDriver();
        driver.get("http://seleniumeasy.com");
    }
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukya.sadar@gmail.com

3. Build execution in chrome browser

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
public class chromebrowser {
public static void main(String args[])
{
System.setProperty("webdriver.chrome.driver", "d:/chromedriver.exe");
WebDriver driver=new ChromeDriver();
driver.get("http://seleniumeasy.com/");
}
```

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Browser commands

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

:browser command of browser:

1. get ()

- This command is used enter url in browser address

syntax:

```
driver.get("URL");
```

Parameters: url - The URL to load. It is best to use a fully qualified URL

Example: driver.get("http://qaplanet.in/");

2. getTitle ()

- This command is used to get the title of the current page.

syntax: driver.getTitle();

Example:

```
System.out.print driver.getTitle());
```

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-97001704230
Hyderabad,India
bhukay.sadar@gmail.com

3. getCurrentURL ()

- This command is use to get the URL of the page currently loaded in the browser.

syntax:

```
driver.getCurrentUrl()
```

Ex:

```
System.out.println(driver.getCurrentUrl())
```

4. getPageSource()

- This command is used to get the source of the last loaded page.

syntax:

```
driver.getPageSource();
```

Ex:

```
System.out.println(driver.getPageSource() )
```

5. close()

- This command is use to close the current page of browser

syntax:

```
driver.close();
```

Sadar Singh Bhukya
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
sadar@gmail.com
bhukay.sadar@gmail.com

6.quit ()

- This command is used to quit the current active page of browser.

syntax: driver.quit();

7.to ()

- This command is used to navigate on specific page or URL

syntax:

```
driver.navigate().to("URL");
```

Example:

```
driver.navigate().to("http://www.redbus.com");
```

8. forward()

- This command is used to go on to next page like browser's forward button.

syntax:

```
driver.navigate().forward();
```

Sadar Singh Bhukya, BTech, Aitech(CSE)
Trained By
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

9. back()

- This command is used to go **back** to previous page like browser's back button.

syntax:

```
driver.navigate().back();
```

10. refresh()

- This command is used to **refresh** the current **page**.

syntax:

```
driver.navigate().refresh();
```

Few other refresh commands:

a. Refresh by sendKeys

- Second most commonly used command for refreshing a webpage

Example:

```
driver.findElement(By.name("s")).sendKeys(Keys.F5);
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

b.Refresh by get()

- feeding get command with a page url to refresh

syntax:

```
driver.get("https://www.google.com");
```

```
driver.get(driver.getCurrentUrl());
```

c.Refresh by to

- navigate().to() is feeding with a page url and an argument to refresh

syntax:

```
driver.get("https://www.google.com");
```

```
driver.navigate().to(driver.getCurrentUrl());
```

d.Refresh by sendKeys

- SendKeys command but instead of using Key, it is using ASCII code.

```
driver.get("https://www.google.com");
```

```
driver.findElement(By.name("s")).sendKeys("\uE035");
```

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.saudar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Findelement

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Webelement access commands:

a.findElement():

b.findElements():

a.findElement():

- This method is used to access webelement on the page by using locator and locator values

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
91-9704230
Hyderabad, India
bhukay.sadar@gmail.com

Syntax:

```
bo.findElement(By.locatorType("locator value")).Operation();
```

Or

```
WebElement el= bo.findElement(By.locatorType("locator value"))
el.Operation();
```

Locator:

- It is an option to identify web element by using html tag attributes

Locator Types:

1.id("id value")

- Identifying webelement by id tag attribute

2.name("name value")

- Identifying webelement by name tag attribute

3.cssSelector("cssSelector")

- Identifying webelement by CSSselector values

4.linkText("link text")

- Identifying webelement by link text of link

5.partialLinkText("partial link text")

- Identifying webelement by partial link text of link

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

6.className("className")

➤ **Identifying webelement by class name**

7.tagName("tag name")

➤ **Identifying webelement by tag name**

8.xpath("xpath value")

➤ **Identifying webelement by xml code**

1.absolute xpath (/):traversing method

2.Relative xpath(//):search method

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Inspecting web element for attributes:

➤ Right click on web element and select inspect

Or

Browser→customize option→More Tools→Developer Tools

Sadar Singh Bhukya, Trained By,
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Xpath

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Xpath:

- It is a locator
- It is in xml code
- Xpath are two types:

1. Absolute Xpath

Example:

html/body/div[2]/div[2]/div/div/div[1]/h1

2. Relative Xpath

Example:

Xpath= //input/input

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Find Xpath by tools:

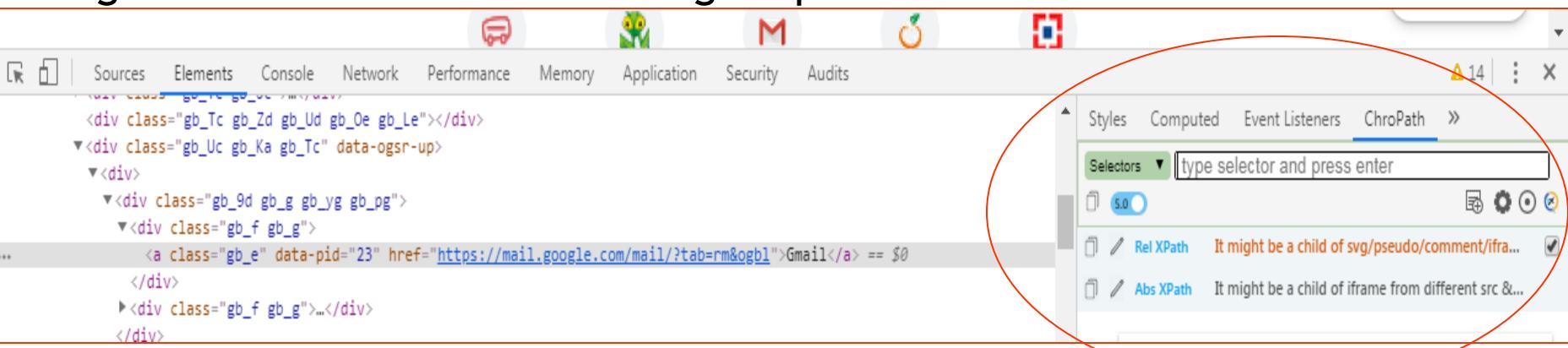
ChroPath:

- It is a browser add-on tool to find xpath

How to add chropath on browser:

1. Open google chrome browser
2. Search for ChroPath in google
3. Click on ChroPath - Google Chrome lin
4. Click on add to chrome
5. Open website
6. Right click on webelement and get xpath at below of browser

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com



Xpath formulas examples:

1. Syntax of Partial XPath and Contains Keyword

```
//tagname[Contains(@attribute name,'Value')]
```

Ex:

```
//img[contains(@src,'Profile')]
```

2. Syntax of Partial XPath and Starts-With Keyword

```
//tagname[starts-with(@attribute name,'value')]
```

Ex:

```
xpath=//input[starts-with(@name,'pa')]
```

```
xpath=//input[starts-with(@name,'id')]
```

3. Syntax of Partial XPath and Text Keyword

```
//*[text()="sadar"]
```

Ex:

```
xpath=//*[text()='HMR Login']
```

Trained By:
Sadar Singh Bhukya, BTech, Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Element Commands

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Web Element commands:

1. clear()

- clearing the values in text fields (input/edit boxes)

Eg.

```
driver.findElement(By.name("agentname")).clear;
```

2. click()

- Click operation is used with button, link, radio button, checkbox

Eg. Click on link,Button,radiobutton,checkbox

3. sendKeys("some value")

- Entering values in text fields (input/edit boxes)

Eg.

```
driver.findElement(By.name("agentname")).sendKeys("sadar");
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

5.submit()

- Using to submit form

6.getAttribute("value")

- Get the value of a given attribute of the element.

7.getCssValue(java.lang.String propertyName)

- Get the value of a given CSS property.

8.getLocation()

- Finding left-hand corner of the web element

9.getSize()

- finding width and height of the rendered element

10.getTagName()

- Get the tag name of the element.

11.getText()

- Get the visible text.

Sadar Srinivas Bhukya, BTech, Mtech(CSE)
Trained By:
10+ Years Exp
91-9700704230
Hyderabad, India
bhukay.sadar@gmail.com

12. isDisplayed()

- Finding whether web element is displayed or not

```
boolean bP= driver.findElement(By.name("id")).isDisplayed();
```

13. isEnabled()

- Finding whether web element is enabled or not

```
boolean searchIconEnabled = driver.findElement(By.name("id")).isEnabled();
```

14. isSelected()

- Checking radio button or check box selected or not.

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Popup window

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Handle Popup windows

1. alert()

- This method is used to handle popup window

syantax:

```
bo.switchTo().alert()
```

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Methods to close popup

a.accept()

- This method is used to close popup window with ok button

b.dismiss()

- This method is used to close popup window with cancel button

Examples:

```
bo.switchTo().alert().getText()
```

```
bo.switchTo().alert().accept()
```

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Valid&Invalid Testcase scripts

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
+91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Buildpath: http://apps.qaplanet.in/qahrm/login.php

Test Scenario:

TS_2:Verify functionality of ‘Login’ button

Test Cases

a. Valid Test case:

TC_2_1:Verify functionality of ‘Login’ button with valid ‘Login Name’ and valid ‘Password’

a. In-Valid Test case:

TC_2_2:Verify functionality of ‘Login’ button with valid ‘Login Name’ and in-valid ‘Password’

TC_2_3:Verify functionality of ‘Login’ button with in-valid ‘Login Name’ and valid ‘Password’

TC_2_4:Verify functionality of ‘Login’ button with in-valid ‘Login Name’ and ‘Password’

Sadar Singh Bhukya
Trained By:
14+ Years exp
91-9701704230
Hyderabad, India
sphukya.sadar@gmail.com

1.Valid Test case script: TC_2_1

```
package login;  
import org.openqa.selenium.By;  
import org.openqa.selenium.WebDriver;  
import org.openqa.selenium.firefox.FirefoxDriver;  
public class TC_2_1 {  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\Drivers\\geckodriver.exe");  
        WebDriver bo=new FirefoxDriver();  
        bo.get("http://apps.qaplanet.in/qahrm/login.php");  
        bo.findElement(By.xpath("//td[2]/input")).sendKeys("qaplanet1");  
        bo.findElement(By.name("txtPassword")).sendKeys("lab1");  
        bo.findElement(By.name("Submit")).click();  
        if( bo.getTitle().equals("OrangeHRM"))  
            System.out.println("pass_tc_2_1");  
        else  
            System.out.println("fail_tc_2_1");  
        bo.close();  
    }  
}
```

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
9701704230
Hyderabad, India
bhukay.sadar@gmail.com

2.In-Valid Test case script: TC_2_2

```
package login;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class TC_2_2 {
public static void main(String[] args) {
// TODO Auto-generated method stub
System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\Drivers\\geckodriver.exe");
WebDriver bo=new FirefoxDriver();
bo.get("http://apps.qaplanet.in/qahrm/login.php");
bo.findElement(By.xpath("//td[2]/input")).sendKeys("qap");
bo.findElement(By.name("txtPassword")).sendKeys("lab1");
bo.findElement(By.name("Submit")).click();
if (bo.findElement(By.xpath("//font[@color='Red']")).getText().equals("Invalid Login"))
System.out.println("pass_tc_2_2");
else
System.out.println("fail_tc_2_2");
bo.close();
}
}
```

Trained By:
Sadar Singh Bhukya, BTech, Mtech(CSE)
14+ Years Exp
9701704230
Hyderabad, India
bhukay.sadar@gmail.com

3.In-Valid Test case script with popup: TC_2_4

```
package login;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class TC_2_4 {
    public static void main(String[] args) throws InterruptedException {
        // TODO Auto-generated method stub
        System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\Drvers\\geckodriver.exe");
        WebDriver bo=new FirefoxDriver();
        bo.get("http://apps.qaplanet.in/qahrm/login.php");
        bo.findElement(By.xpath("//td[2]/input")).sendKeys("");
        Thread.sleep(6000);
        bo.findElement(By.name("txtPassword")).sendKeys("");
        Thread.sleep(6000);
        bo.findElement(By.name("Submit")).click();
        if(bo.switchTo().alert().getText().equals("User Name not given!"))
            System.out.println("pass_tc_2_4");
        else
            System.out.println("fail_tc_2_4");
        bo.switchTo().alert().accept();
        bo.close();
    }
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Actions commands

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Action methods:

- These methods related to mouse and key board related operations

1.perform():perform the action

2.click ():click on element

3.doubleClick (): Double click webelement

Example:

```
bo.get("https://www.hdfcbank.com/");
```

```
Actions acr=new Actions(bo);
```

```
//double click on login button
```

```
acr.doubleClick(bo.findElement(By.xpath("//a[@id='loginsubmit']"))).perform();
```

4.contextClick() : Performs a context-click (right click) on an webelement

5.clickAndHold(): Click at the present mouse location (without releasing)

6.dragAndDrop(source, target): Invokes click-and-hold at the source location and moves to the location of the target element before releasing the mouse.
source - element to grab, target - element to release

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

7.dragAndDropBy(source, xOffset, yOffset) : Performs click-and-hold at the source location, shifts by a given offset, then frees the mouse. xOffset - to shift horizontally, yOffset - to shift vertically

8.moveToElement(toElement): It shifts the mouse to the center of the element

9.release(): Releases the depressed left mouse button ^{at the existing mouse location}

Sadar Singh Bhukya, BTech(CSE)
Trained at: iGate
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Example for Sequential Framework

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Framework:

- It is a systematic way to write TC scripts to run for different testing types

Test Suite:

- Set of test case scripts to run for Regression, Datadriven, Crossbrowser etc

Sequential frame work for example:

Project Structure:



Trained By:
Ragh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
101704230
India
.com

Structure class for Testcases Scripts:

```
package framework;  
import org.openqa.selenium.By;  
import org.openqa.selenium.WebDriver;  
import org.openqa.selenium.firefox.FirefoxDriver;  
public class Login {  
    WebDriver bo;  
    String buildpath ="http://apps.qaplanet.in/qahrm/login.php";  
    void tc2_1(){  
        System.setProperty("webdriver.gecko.driver", "D:\\Selenium\\geckodriver.exe");  
        bo=new FirefoxDriver();  
        bo.get( buildpath);  
        // write code of testcase  
    }  
    void tc2_2() {  
        //write test case code  
    }  
}
```

Trainer By:
Sadar Singh Bhukya, BTech M.Tech(CSE)
14 Years Exp
91-97041704230
Hyderabad, India
bhukay.sadar@gmail.com

Executable program to execute test case scripts:

```
package framework;
```

```
import org.openqa.selenium.WebDriver;
```

```
import org.openqa.selenium.firefox.FirefoxDriver;
```

```
public class ExecuteTest {
```

```
    public static void main(String[] args) {
```

```
        // TODO Auto-generated method stub
```

```
        Login lg=new Login();
```

```
        lg. tc2_1();
```

```
        lg. tc2_2() ;
```

```
}
```

```
}
```

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Screenshot script

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Screenshot

```
File SrcFile=(TakesScreenshot)webdriver)).getScreenshotAs(OutputType.FILE);  
FileUtils.copyFile(SrcFile, new File("filename_with_path"));
```

Sadar Singh Bhukya;
Trained By:
BTech,Mtech(CS)
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Handling List field

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

List field

Select and deselect

1. `selectByValue()`

```
Select sByValue = new Select(driver.findElement(By.id("cty")));
sByValue.selectByValue("greenvalue");
```

2. `selectByVisibleText()`

```
Select sByVisibleText = new Select
(driver.findElement(By.id("cty")));
sByVisibleText.selectByVisibleText("Lime");
```

3. `selectByIndex()`

```
Select sByIndex = new Select(driver.findElement(By.id("cty")));
sByIndex.selectByIndex(2);
```

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Window handles

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

:Windows handle commands:

1.alert()

- This method to handle popup window

Syntax:

```
driver.switchTo().alert()
```

2.getWindowHandle()

window

- To get the window handle of the current window
- Return a string of alphanumeric window handle

Syntax:

```
String wname= driver.getWindowHandle();
```

```
driver.switchTo().window(wname)
```

3.getWindowHandles()

- To get the window handle of all the current windows
- Return a set of window handle

Syntax:

```
Set<String> wnames= driver.getWindowHandles();
```

*Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com*

windows:

- WebDriver supports moving between named windows

Syntax:

```
1.driver.switchTo().window("windowName");  
2.for (String handle : driver.getWindowHandles()) {  
    s.o.p(handle));  
    driver.switchTo().window(wnames);  
}  
}
```

3.frame()

- Moving between named frames

Syntax:

```
driver.switchTo().frame("frameName");  
driver.switchTo().frame("frameName");
```

Example:

```
driver.switchTo().frame("classFrame");  
driver.findElement(By.linkText("Deprecated")).click();
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Synchronization point

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

: Synchronization points:

- Synchronizing between automation tool and application which is under testing while execution

Wait Commands:

1. ImplicitlyWait:

- wait for a certain amount of time before throwing an exception that it cannot find the element on the page

syntax:

```
driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);
```

2. Sleep:

- force the browser to wait for a specific time

syntax:

```
thread.sleep(1000);
```

3. FluentWait:

- maximum amount of time to wait for a condition

Trained By:
Sadar Singh Bhukya, M.Tech, Mtech(CSE)
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

FluentWait:

- Maximum amount of time to wait for a condition and with repeatedly following condition

```
Wait wait = new FluentWait(driver)
    .withTimeout(30, SECONDS)
    .pollingEvery(5, SECONDS)
    .ignoring(NoSuchElementException.class);
```

Sadar Singh Bhukay, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

4. Expected Conditions:

```
driver.navigate().to("hmr.link");
WebDriverWait wait = new WebDriverWait(driver, 10);
wait.until(ExpectedConditions.visibilityOfElementLocated(By.xpath("//i
    nput")));
```

5. PageLoadTimeout:

```
driver.manage().timeouts().pageLoadTimeout(100, SECONDS);
```

6. SetScriptTimeout

- Sets the amount of time to wait for an asynchronous script to finish execution before throwing an error

```
driver.manage().timeouts().setScriptTimeout(20, TimeUnit.SECONDS);
```

Sadar Singh Bhukay, BTech, Mtech(CSE)
Trained By:
91-9700704230
9 Years Exp
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

CssSelector locator

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

CssSelector:

- It is a locotor Finding webelement with string combination of HTML tag, id, class, and attributes

Syntax:

```
bo.findElement(By.cssSelector("input[name=txtUserName]")).sendKeys("sADA  
R");
```

- it has CSS Selectors have many formats those are

1.Tag and ID

Ex: "input#email".

2.Tag and class

EX: "input.inputtext"

3.Tag and attribute

Ex: "input[name=lastName]"

4.Tag, class, and attribute

Ex: "input.inputtext[tabindex=1]"

5.Inner text

Ex: "font:contains("Boston")"

Trained By:
Sadar Singh Bhukya, BTech, Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Findelements

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

:findElements command uses:

FindElements():

- This method is used to find similar kind of webelements

Ex:

No of links

No of buttons

No Check boxes etc

1. No of Links in webpage

Syntax:

```
driver.get("URL");
```

```
List <webelement> totalLinks=driver.findElements(By.tagName("a"));
```

```
System.out.println(totalLinks.size());
```

2. No of check boxes in webpage

```
List<webelement> checkboxes=driver.findElements(By.xpath("//input[@type='checkbox']"));
```

```
System.out.println(checkboxes.size());
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

3. No of List fields in webpage

```
List<webelement>
    dropdown=driver.findElements(By.tagName("select"));
System.out.println(dropdown.size())
```

4. No of text boxes in webpage

```
List <webelement>
    textboxes=driver.findElements(By.xpath("//input[@type='text'][@class
='inputtext']"));
System.out.println(textboxes.size());
```

5. No of rows and columns in webtable

```
WebElement wetable =
    driver.findElement(By.xpath(".///*[@id='postbody']/div[1]/table/tbod
y"));
List<WebElement> rows_table =
    mytable.findElements(By.tagName("tr"));
```

Sadar Singh Bhukya, BTech, Mtech(CSE)
Trained By:
14+ Years Exp
98701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Property file

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Property file:

- This file is used to store variable values and using in programming by calling variables
- This file is used in selenium webdriver to store locator values and used in script

Working with Property file:

a. Creating a properties file in eclipse

- Create a property file in any package with extension “`properties`”

Example :

`propertyfile.properties`

b. Storing locator values properties file

- store variable values in property files for locator values

`bpath=http://apps.qaplanet.in/qahrm/login.php`

`uid=/td[2]/input`

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
9701704230
Hyderabad, India
bhukay.sadar@gmail.com

c. Reading data from properties file

- a. Create object with Properties class

```
Properties obj = new Properties();
```

- b. Create obje for input property file

```
FileInputStream objfile = new FileInputStream(System.getProperty("user.dir")+"/application.properties");
```

- c. Load property file

```
obj.load(objfile);
```

- d. Read variable: getProperty("bpath");

d. Test scripts with property file:

```
public class BuildTest {  
    public static void main(String[] args) throws IOException {  
        // TODO Auto-generated method stub
```

```
        Properties obj = new Properties();
```

```
        FileInputStream objfile = new FileInputStream(System.getProperty("user.dir")+"/src/propertyfile/locatorvalues.properties");
```

```
        obj.load(objfile);
```

Sadar Singh Bhukya, BTech, MTech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

```
String bp = obj.getProperty("bpath");
System.setProperty("webdriver.gecko.driver",
"D:\\SelWD\\Drvers\\geckodriver.exe");
WebDriver bo=new FirefoxDriver();
bo.get(bp);
bo.findElement(By.xpath(obj.getProperty("uid"))).sendKeys("qaplanet1");
}
}
```

Sadar Singh Bhukya,
M.Tech,Mtech(CSE)
Trained By:
14+ Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Tools

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Tools in Automation Testing

1. Platform: Java
2. Editor: Eclipse
3. Functional Testing tool: Selenium webdriver
4. Framework: TestNG,Cucumber,hybrid framework
5. Project Structure: Maven
6. Distributed Repository Management tool: Github
7. Build, test, and deploy their software tool: Jenkins
8. Window scripts: Autoit,Sikuli

Sadar Singh Bhukya, BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad, India
bhushy.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

TestNG

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

TestNG:

- It is a sequential Framework
- Test script written by using annotation
- It gives HTML output those index.html and emailable_report.html
- Assert command is used to compare ER and AR
- It supports Datadriven testing by using Dataprovider annotation
- It supports cross browser Testing
- It supports batch run by using XML file
- Testing framework can be easily integrated with management and integration tools like Maven, Jenkins,
- Testcases script can be controlled by Test annotation parameters

Annotation:

1. @BeforeSuite

- The annotated method will be run only once before all tests in this suite have run.

2. @AfterSuite

- The annotated method will be run only once after all tests in this suite have run.

Sadar Singh Bhukya
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
brukay.sadar@gmail.com

@BeforeClass

- The annotated method will be run only once before the first test method in the current class is invoked.
- @AfterClass
- The annotated method will be run only once after all the test methods in the current class have run.

@BeforeTest

- The annotated method will be run before any test method belonging to the classes inside the <test> tag is run.

@AfterTest

- The annotated method will be run after all the test methods belonging to the classes inside the <test> tag have run.

@BeforeMethod

- The annotated method will be run before each test method.

@AfterMethod

- The annotated method will be run after each test method.

@DataProvider

- Marks a method as supplying data for a test method.

Trained By:
Sadar Singh Bhukya, BTech, MCA (CSE)
14+ Years Exp
91 9701704230
Hyderabad, India
bhukay.sadar@gmail.com

@Factory

- Marks a method as a factory that returns objects that will be used by TestNG as Test classes. The method must return Object[].

@Listeners

- Defines listeners on a test class.

@Parameters

- Describes how to pass parameters to a @Test method.

@Test

- Marks a class or a method as a part of the test.

@BeforeTest

- Marks a class or a method as a part of the test.

@AfterTest

- Marks a class or a method as a part of the test.

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

How to install:

Eclipse—Help—MarketPlace—Search TestNg and Install

Plugin option:

Eclipse—Help—Install New Software—Add plugin

TestNG - <http://beust.com/eclipse>

How to create Testng class:

Right click on package—Testng—create Tesng Class

TestNg Class Structure:

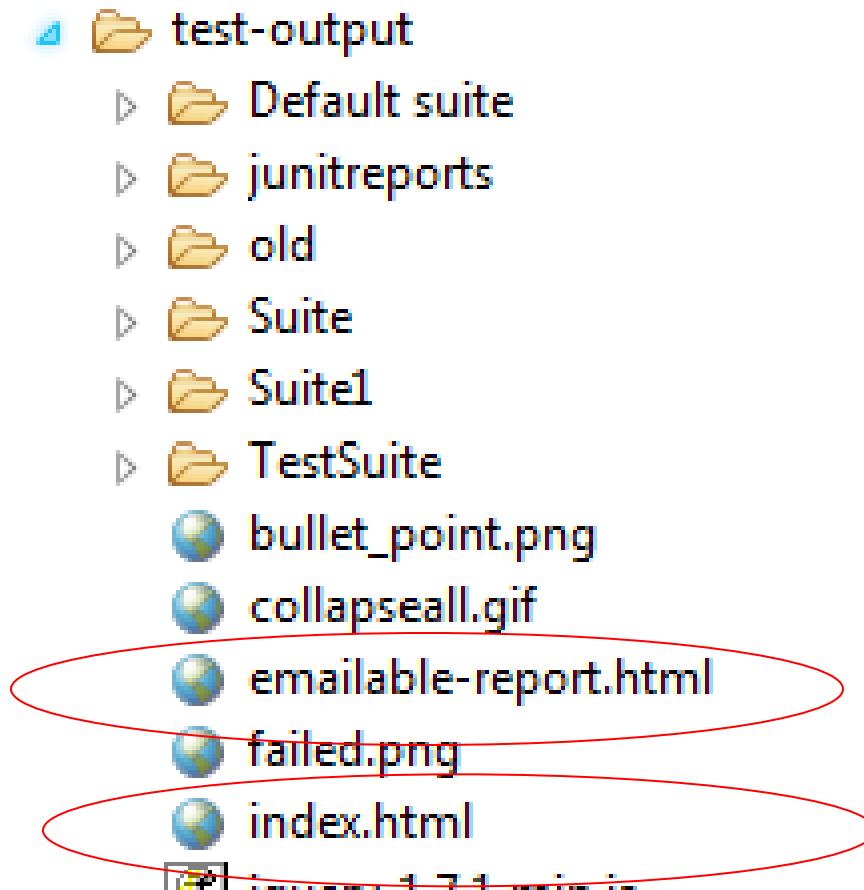
```
package testng;  
import org.testng.annotations.Test;  
public class LoginTest {  
    @Test  
    public void TC_2_1() {  
        //Testcase Script  
    }  
}
```

Sadar Singh Bhukya:
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

How to Run TestNG class:

Right click on TestNG class-Run As-TestNG Test

Output types: test-output folder is displayed in project structure



Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Open Index.html and emailable-report.html files as browser output type

How to do batch run or test suite in TestNG:

1.Create XML file:give xml file name while creating testng class

2.Add testNG classes:

3.Run XML file as TestNG suite

Exameple file for XML file

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd">
<suite guice-stage="DEVELOPMENT" name="Default suite">
  <test thread-count="5" verbose="2" name="Default test">
    <classes>
      <class name="datadriven.Datadrv"/>
    </classes>
  </test> <!-- Default test -->
</suite> <!-- Default suite -->
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

sample TestNG Framework with @test parameters

```
public class FrameworkRegressionTest {  
    WebDriver bo;  
    @Test(enabled=true,priority=1,groups="Login", dependsOnMethods = " ")  
    public void TC2_1() {  
        System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\Drvers\\geckodriver.exe");  
        bo=new FirefoxDriver();  
        bo.get("http://apps.qaplanet.in/qahrm/login.php");  
        bo.findElement(By.xpath("//td[2]/input")).sendKeys("qaplanet1");  
        bo.findElement(By.name("txtPassword")).sendKeys("bab1");  
        bo.findElement(By.name("Submit")).click();  
        Assert.assertEquals(bo.getTitle(), "tOrangeHRM");  
        bo.close();  
    }  
    @Test(enabled=true,priority=2,groups="Login", dependsOnMethods = " ")  
    public void TC2_2() {  
        //write script here  
    }  
}
```

*Sadar Singh Bhukya, B.Tech, Mtech(CSE)
14+ Years EXP
91-9701704230
Hyderabad, India
yakay.sadar@gmail.com*

sample TestNG Framework with @test parameters

1.enabled

- indicates to failed or pass test cases script to execute or not.

enabled=True, indicates pass test case to execute for regression testing

enabled=false , indicates failed test case not to execute for regression testing

2.priority

- Indicates order of execution of test case script

3. groups

- It is used to to display result in group wise in html output

4. dependsOnMethods

- It is used to execute test case as of dependency test case

Sadar Singh Bhukya, BTech, M.Tech(CSE)
Trained By, Naveen
14+ Years Exp
91-9701704230
Hyderabad, India
bharay.sadar@gmail.com

Continue....

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+Years EXP
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

POM

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

POM:

Page Object Model is a Design Pattern

- It is widely used design pattern in Selenium for enhancing test maintenance and reducing code duplication.
- Page object model (POM) can be used in any kind of framework such as modular, data-driven, keyword driven, hybrid framework

POM Advantage:

- Code reusability -writing the code once and use it in different tests.
- Code maintainability - There is a clean separation between test code and page specific code such as locators and layout which becomes very easy to maintain code
- Object Repository - Each page will be defined as a java class. All the fields in the page will be defined in an interface as members. The class will then implement the interface.
- Readability - Improves readability due to clean separation between test code and page specific code

Sadar Singh Bhukay, BTech,Mtech(CSE)
14+ Years Exp
Hyderabad, India
bhukay.sadar@gmail.com
919701704141

TestNG class for login page

```
public class Loginpm {  
  
    WebDriver bo;  
    By uname=By.xpath("//td[2]/input");  
  
    void ue_txt(String ss){  
        bo.findElement(uname).sendKeys(ss);  
    }  
  
    Loginpm(WebDriver bro){  
        this.bo=bro;  
    }  
  
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

TestNG class for Run POM frame work

```
public class Pomrun {  
  
    @Test  
    void tc222(){  
        System.setProperty("webdriver.gecko.driver", "D:\\SelWD\\Drvers\\geckodriver.exe");  
        WebDriver bro=new FirefoxDriver();  
        bro.get("http://apps.qaproductivity.com/qahrm/login.php");  
        Loginpm log=new Loginpm(bro);  
        log.ue_txt("qaproductivity1");  
    }  
}
```

Sadar Singh Bhukya, B.Tech, Mtech(CSE)
Trained By:
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Github

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Github:

- It is a web based configuration management tool
- It is a web based shareable repository tool

Process:

- i.
1. Open github account at <https://github.com/>
2. create folder(Repository)

- ii.
1. Go to eclipse
2. Go to windows→Preference→eGit-Extension→github-extension→set up user name and password

- iii.
1. Activate window in eclipse→window→show view → others→Git Repositories ,Git staging etc and observe Git related windows in eclipse editors

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

- iv.Process
- a.Clone
- b.Right click on project → Team → share project
- c.Select in staging
- d.Commit and push

Trained By:
Sadar Singh Bhukya, BTech, MTech(CSE)
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Maven

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

What is a Maven

- Maven is a powerful *project management tool* that is based on POM by using pom.xml file (project object model).
- **Maven provides support for managing the full lifecycle of a test project**
- **Maven** is used to define **project structure, dependencies, build, and test management.**
- Configure dependencies(jar) needed for building testing and running code by using pom.xml file

Sadar Singh Bhukya,
Trainer BY:
14+ Years EXP
91-9701704230
Bhukay.sadar@gmail.com
Hyderabad, India

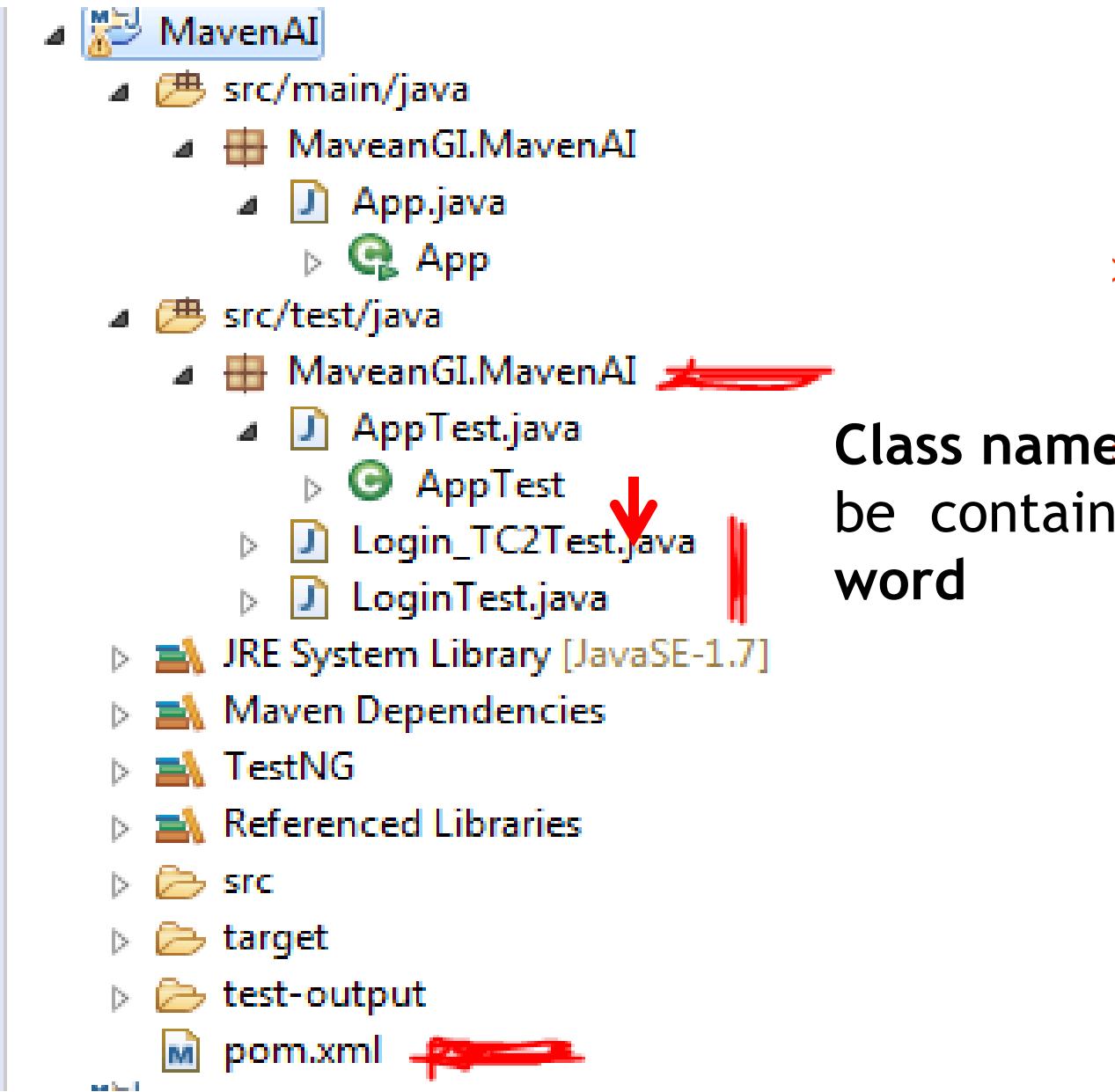
How to install maven:

- Eclipse→help→eclipse Market place→find maven→m2e install

How to create maven project?

- File—New—→project-->Maven project-maven-archetype-quickstart→Group ID, Artifact Id→Finish

Maven Project structure:



**Class name must
be contains Test
word**

POM.xml file

1. Update POM for required jar files

```
<dependencies>
    <dependency>
        <groupId>junit</groupId>
        <artifactId>junit</artifactId>
        <version>4.11</version>
        <scope>test</scope>
    </dependency>
    <dependency>
        <groupId>org.seleniumhq.selenium</groupId>
        <artifactId>selenium-java</artifactId>
        <version>3.141.59</version>
    </dependency>
    <dependency>
        <groupId>org.testng</groupId>
        <artifactId>testng</artifactId>
        <version>7.0.0-beta3</version>
        <scope>test</scope>
    </dependency>
</dependencies>
```

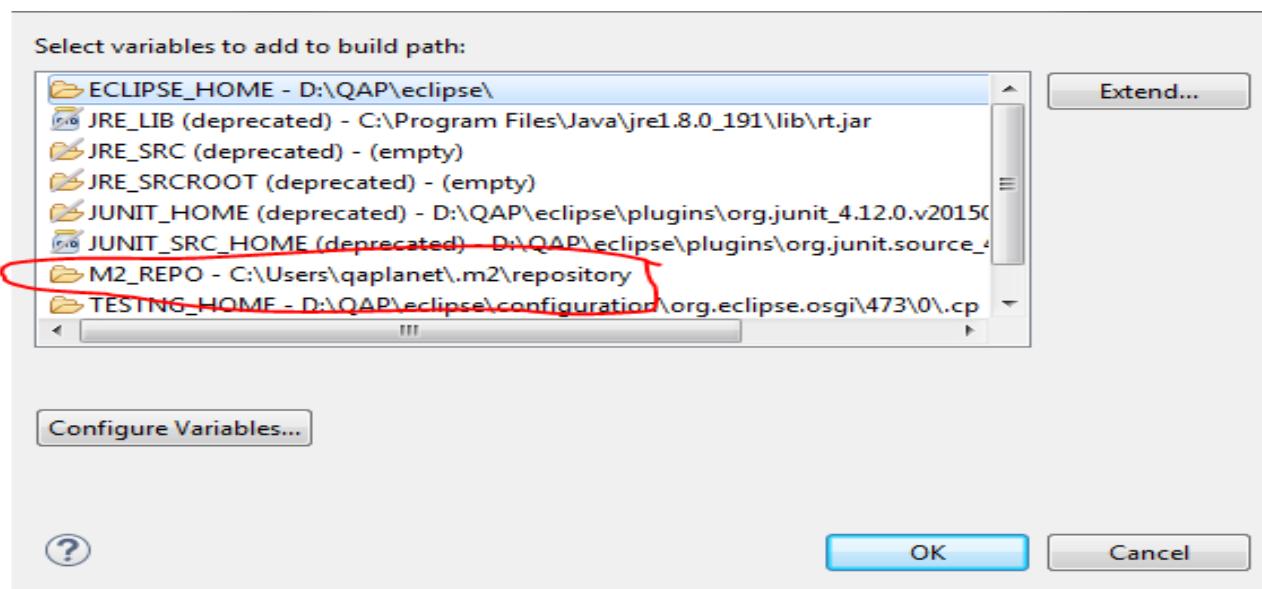
Trained By:
Nukya, BTech, Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad, India
nukay.sadar@gmail.com

2. Right click on Project → Maven → Update Project

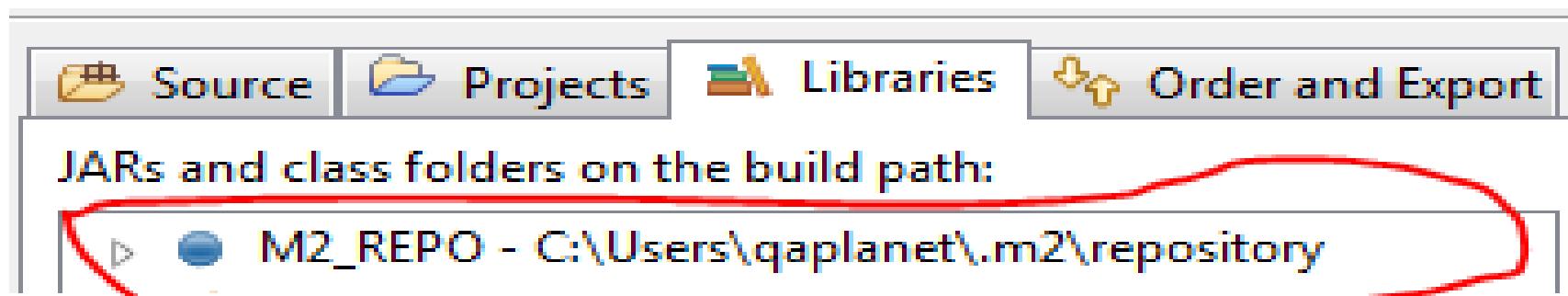
Add Repository path for maven project:

Righ click on project → select property → Java Build path → Libraries-Add variables → OK

a.

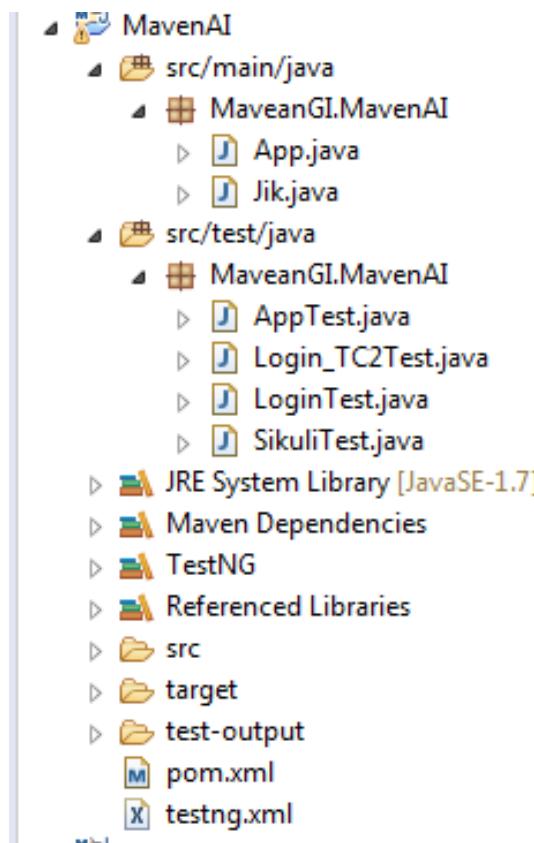


b.observe



Run Maven Test:

- 1.Create TestNG class with test cases script in ‘src/test/java’
- 2.Right click maven project and convert to Testng
- 3.Right click on Testng.xml file and Run as Testng suite
- 4..Right click on Maven project→Run As→Maven Test



Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Cucumber

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Cucumber:

- It is a tool to generate scripts for testing in a behavior-driven development (BDD)

What is a BDD?

- Behavior driven development
- Focus on what to be tested TS
- Gherkin languages is used

Keyword in Gherkin

Given: Execute build

When: Enter valid userId&password

Then : Main page should be displayed

Install:

plugin path: <http://cucumber.github.com/cucumber-eclipse/update-site>

Eclipse→Help→Install New Software→work with : --add

Or

Eclipse→help→Eclinse Marketplace →search cucumber and add it

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Jar file:

cucumber-core-2.4.0.jar
cucumber-java-2.4.0.jar
cucumber-junit-2.4.0.jar
cucumber-jvm-deps-1.0.6.jar
gherkin-5.0.0.jar
junit-4.12.jar
mockito-all-1.10.19.jar

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Testing with Cucumber :

1.Create a folder in project

- Click Right button on project-New -folder
Example folder name=Feature

2. Create Feature file in folder and run as cucumber featere

- Click Right button on Folder-New-file
file name should be with .feature extension
example: features.feature

3 Write the code by using gerkin keyword in feature file as below

Feature: Verify functionality of login button

Scenario: Login button with valid user id and password

Given Enter build path

When valid userid and passwrd

Then home page dispaleyd

- Run as Cucumber feature

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
+91 9701704230
Hyderabad, India
bhukay.sadar@gmail.com

4.Create a Testng testrun class without any method

5.Add Feature folder by using annotations in testrun class as below

```
@RunWith(Cucumber.class)
```

```
@CucumberOptions(features="Feature")
```

```
public class Testrun {
```

```
}
```

6.Run testrun class as Junit Test

7.Observe the structure of the code and copy it

8.Create a new class(scripting) for test cases and paste the structure which is created

9. Modify the test cases class(scripting) with test cases as of structure

10.Now add test case class(scriptin) in testrun class as below

```
@RunWith(Cucumber.class)
```

```
@CucumberOptions(features="Feature",glue={"scripting"})
```

```
public class Testrun {
```

```
}
```

10.Run testrun class as Junit Test

Sadars Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
+91 9701704230
Hyderabad, India
bhukay.sadars@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Jenkin

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Jenkins:

- Jenkins is an automation server software that is used frequently to achieve continuous integration and delivery in software projects.
- It is open source build continuous integration management tool
- It used to build and test software projects continuously making it easier for developers to integrate changes to the project
- It is built with Java and hence, it is portable to all the major platforms and environment (linx,unx)
- Jenkins can be easily configured as per the requirements for continuous integration and continuous delivery.
- Jenkins can be easily configured as per the requirements for continuous integration and continuous delivery.

Sadar Singh Bhukya, BTech
Trained BY:
M.Tech(CSE)
14+ Years EXP
91-97041704230
Hyderabad, India
bhukya.sadar@gmail.com

Option with different Tools:

Maven-build

Selenium-Testing

Git-Version control

Puppet-Configuration Management

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Sikuli

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Sikuli:

- Sikuli generates scripts for any thing whatever on the screen
- Sikuli is an open source GUI based automation tool
- It uses the technique of 'Image Recognition' to interact with elements of the web and window application
- Sikuli recognizes the elements based on their images
- Script generated based on images

Sikuli with selenium webdriver:

Download:

- Download sikuli supported JAR file and add to project

URL:

<https://mvnrepository.com/artifact/com.sikulix/sikulixapi/1.1.0>

Jarfile:

Sikulixapi.jar

Process Of sikulit:

1. Image file created for each elements those elements are under testing
2. Screen object is created by using Screen class

Trained By:
Sadar Singh Bhukya, BTech, Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

3.Pattern object is created by using pattern class

4.Operation methods on elements

Example for userid text field:

```
Screen sc=new Screen();
```

```
Pattern ud=new Pattern("C:\\\\Users\\\\qaplanet\\\\Desktop\\\\ude.PNG");
```

```
sc.type(ud,"qaplanet1")
```

Sadar Singh Bhukay
Trained By:
14+ Years Experience
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Screen class:

- Screen class is the base classes for all the methods provided by Sikuli

Methods of Screen class:

Click, doubleClick, Type, Hover, Find

Pattern Class:

- Pattern class is used to associate the image file

Methods of Pattern class:

getFileName, similar, Exact

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Collection

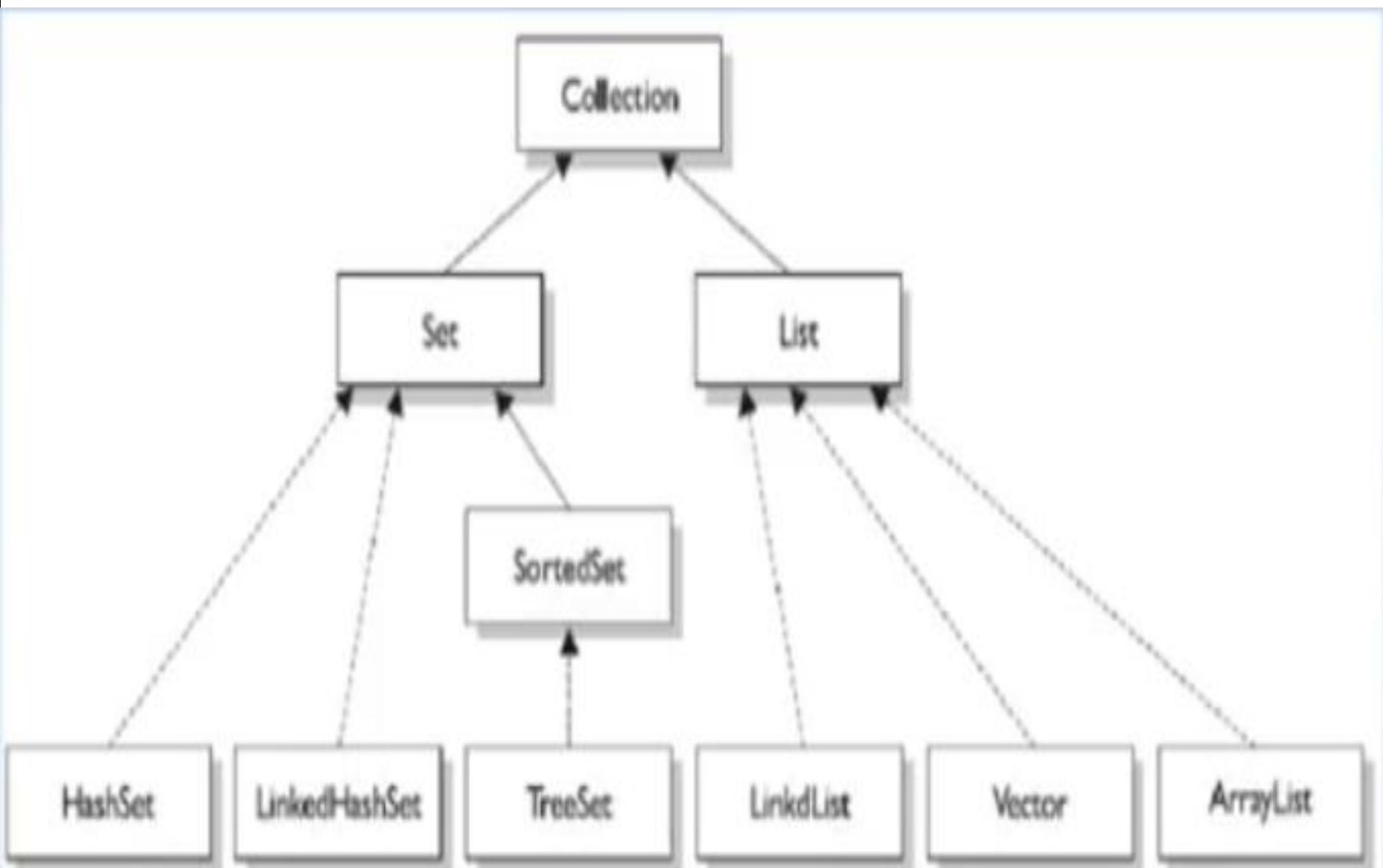
Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Collections:

- It is a concept of dynamic memory allocation
- Storing values in memory without declaring variables
- Set of some data structure which supports for dynamic memory allocation
- It is added after Java 1.5
- Collection in java is a framework that provides an architecture to store and manipulate the group of objects
- Specific methods available to perform operation such as searching, insertion, and delete etc

Sadar Singh Bhukya, B.Tech
Trained By:
14+ Years EXP
91-701704230
Hyderabad, India
bhukay.sadar@gmail.com

Collections:



ArrayList Class:

- It is class uses a dynamic array to store the data
- It can contain duplicate values
- It maintain insertion order
- Random access available because of index
- It is slow when insertion is done because all elements change the location

```
public class Arralist {  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        ArrayList obj=new ArrayList();  
        obj.add("sadar");  
        obj.add(234);  
        obj.add('m');  
        obj.add("sadar");  
        //System.out.println(obj);  
    }  
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

```
/*int size=obj.size();
 for (int i=0;i<size;i++){
     System.out.println("valuesvvvvvvv "+obj.get(i));
 }*/
```

```
/*for (Object el:obj){
    System.out.println(el);
 }*/
```

```
Iterator it=obj.iterator();
while(it.hasNext()){
    Object el=it.next();
    System.out.println(el);
}
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Set:

- It is an interface in java extends Collection interface
- It does not allow duplicate values
- It is unordered collection
- It doesn't allow to access by using index

Methods:

add()

Add an object to the collection

clear()

Contains()

IsEmpty()

Iterator()

Remove()

Size()

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Types:

HashSet:

- HashSet store the elements by using hashing mechanism
- HashSet can not allow by using index
- HashSet contains unique elements

LinkedHashSet:

- Same as HashSet and Maintains the insertion order

TreeSet:

- Maintains ascending order

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
9701704230
Hyderabad, India
bhukay.sadar@gmail.com

```
public class Set {  
  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        HashSet<String> setobject=new HashSet<String>();  
        setobject.add("Ravi");  
        setobject.add("Vijay");  
        setobject.add("Ravi");  
        setobject.add("Ajay");  
        //Traversing elements  
        Iterator<String> itr=setobject.iterator();  
        while(itr.hasNext()){  
            System.out.println(itr.next());  
        }  
    }  
}
```

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years EXP
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

Continue...

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

FrameWork

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Framework:

- It is a systematic way to write tc script to run for different testing types

Ex: Regression, Datadriven, Crossbrowser etc

Type of Frameworks:

1. Sequential FW
2. Modular FW
3. Keyword FW
4. DataDriven FW
5. Hybrid FW

Guidelines for Framework to design:

1. Variable declaration
2. Method declarations for reusable object

Ex: enter_txt("locator type", "locator value", "value")

3. Naming convention of variables and methods
4. Testcase format for automation testing
5. Input data file types(excel,DB)

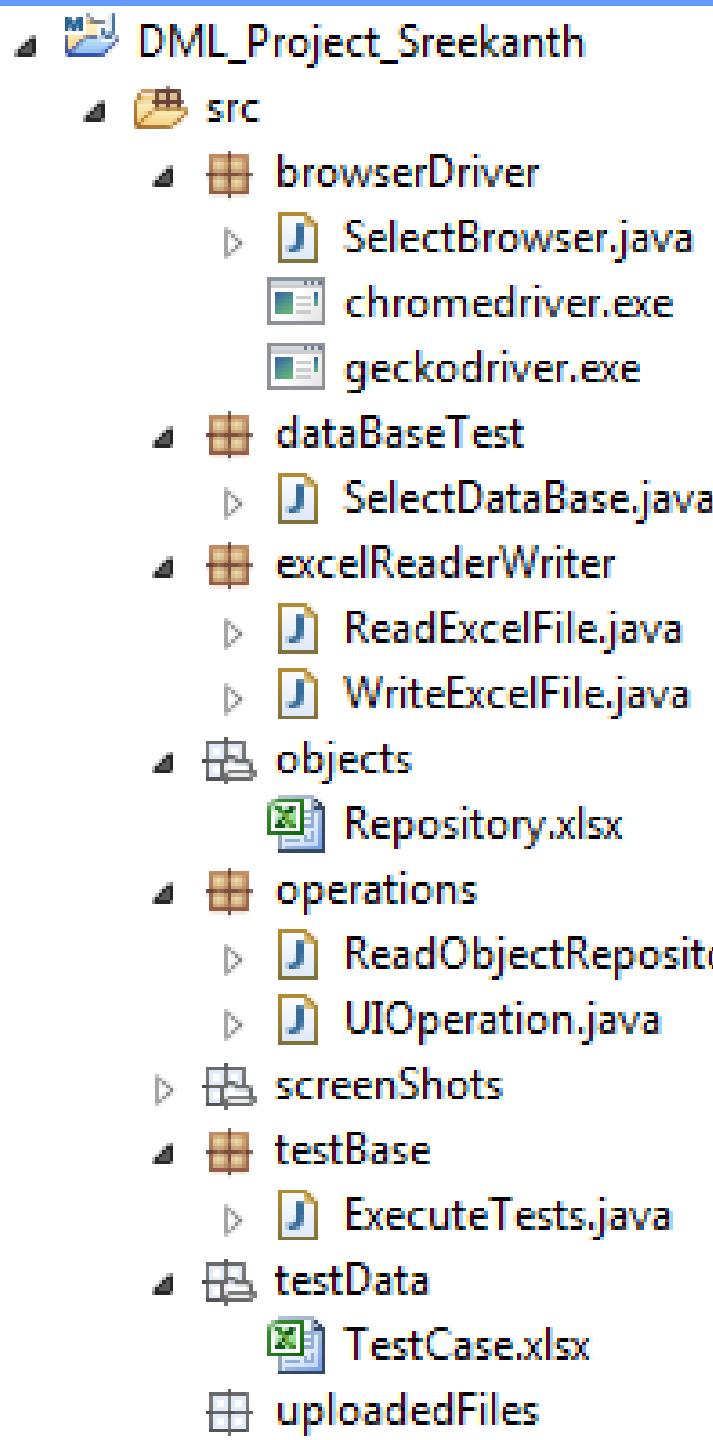
Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com

- 6.Output type for result(Excel,HTML)
- 7.Architectutre of Frame work
- 8.FolderStructure of FW
- 9.Proper Guidelines Doc of Framework

On which frame work ,are you working now?

- 1.I am using Hybridframe work at my orgnization
- 2.It has structure of packages ,those are

Sadar Singh Bhukya, BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad, India
bhukay.sadar@gmail.com



Trained By:
r Singh Bhukya,BTech,Mtech(CSE)
14+Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

3. I am going to update testcase with keyword .Object,Locatory type in ‘Testcase.xlsx’ file which is in ‘Testdata’ Package

	A	B	C	D	E	F	G
1	Module	Test Case	Keyword	Object	ObjectType	Value	Status
2	LOGIN						New Module Started
3		Verify URL					New TC Started
4			GOTOURL			url	Pass
5			GETTEXT	login_label	xpath	HMR Login	Pass
6			Verify the Invalid Login functionality				New TC Started
7			SETTEXT	username	xpath	sadar1	Pass
8			SETTEXT	password	xpath	sadar1	Pass
9			CLICK	loginButton	xpath	Invalid UserID	Pass
10			Verify the functionality of Reset Button				New TC Started
11			CLEAR	username	xpath		Pass
12			SETTEXT	username	xpath	sadar	Pass
13			CLEAR	password	xpath		Pass
14			SETTEXT	password	xpath	sadar	Pass
15			CLICK	resetButton	xpath		Pass

4. I am going to update locator value in ‘Repository.xlsx’ file in ‘objects’ package

	A	B	C	D
1	ObjectName	Object Locator		
2	url	http://dmlogics.in/build1/Logging.html		
3	browser_type	firefox		
4	login_label	html/body/center/table/tbody/tr[1]/td/center/h1/b/font		
5	username	html/body/center/table/tbody/tr[2]/td[2]/form/input		
6	password	html/body/center/table/tbody/tr[3]/td[2]/input		
7	loginButton	html/body/center/table/tbody/tr[4]/td[1]/center/input		
8	resetButton	html/body/center/table/tbody/tr[4]/td[2]/center/input		
9	verifyHomePage	//*[@id='hmrl']/b/font		
10				

- 5.After Retesting I am going to change new build in ‘Repository.xlsx’ file in ‘objects’ package
- 6.I am going to run ‘ExecuteTest.java’ file which is in ‘testBase’ Package for regression testing
- 7.I am going to observe result in ‘Testcase.xlsx’ file which is in ‘testData’ Package

Sadar Singh Bhukya,BTech,Mtech(CSE)
Trained By:
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com

Best of Luck.....

Trained By:
Sadar Singh Bhukya,BTech,Mtech(CSE)
14+ Years Exp
91-9701704230
Hyderabad,India
bhukay.sadar@gmail.com