Well Come to Automation Testing

In this tutorial you will learn how to automate any website by Testing Framewor	rk. This tutorial base on the Selenium TesNg fr	amework.
1)Set Up the default framework setup for any project		

- 2)Standard architecture for Automation Framework
- 3) Standard scripting level
- 4) Slandered data driven architecture (Next Tutorials)
- 5) Test case Execution Strategy (Next Tutorials)
- 6) Customization Report (Next Tutorials)
- 7) Jankins and Selenium Grids (Next Tutorials)

Note: Read documents thoroughly any. Documentation is still under process. This is not the final version .For ant concern reach out to me @(mchowdhury891@outlook.com)

Installation of JDK

To install JDK you need to download JDK, Unzip the folder

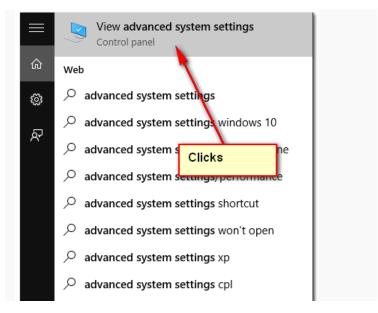
Tools

- 1. Windows 10
- 2. JDK 1.8

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1. Advanced System Settings

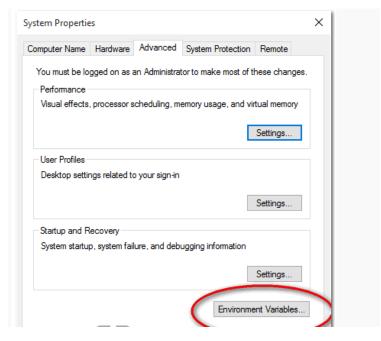
Type advanced system settings in the search box (beside the Windows start button), clicks View advanced system settings.



2. Environment Variables

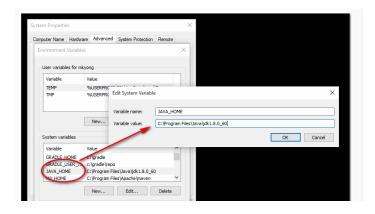
Select Advance tab, clicks Environment Variables

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3. Add JAVA_HOME

In System variables, add a new JAVA_HOME variable and point it to the JDK installed folder.



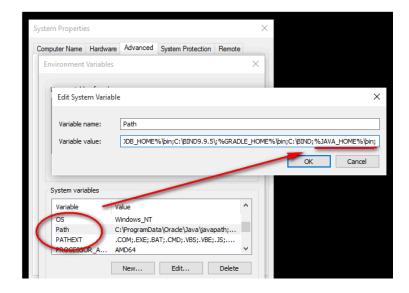
Note

Don't include the \bin folder, just the JDK path. For example

- 3. Correct C:\Program Files\Java\jdk1.8.0_60
- 4. Wrong C:\Program Files\Java\jdk1.8.0_60\bin

4. Update PATH

In System variables, find PATH, clicks edit and append this %JAVA_HOME%\bin to the end.



P.S Puts the JAVA_HOME\bin in PATH make the Java's commands are accessible from everywhere.

5. Test

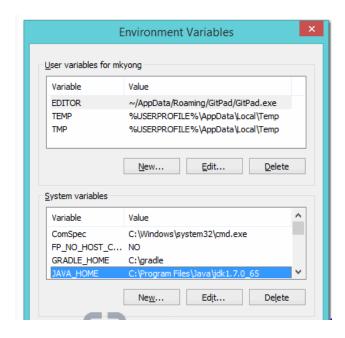
Open a command prompt, type:

C:\Users\mjoy>java -versionjava version "1.8.0_60"Java(TM) SE Runtime Environment (build 1.8.0_60-b27)Java HotSpot(TM) 64-Bit Server VM (build 25.60-b23, mixed mode)

Don't be bored Take a break again continue To Next Page no:

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Installation Maven for windows
To install Apache Maven on Windows, you just need to download the Maven's zip file, and Unzip it to the directory you wish to install, and configure the Windows environment variables.
Tools Used :
 JDK 1.7 Maven 3.2.2 Windows 8
1)JDK and JAVA_HOME installation
Make sure JDK is installed, and "JAVA_HOME" variable is added as Windows environment variable.
Don't be bored Take a break again continue To Next Page no:

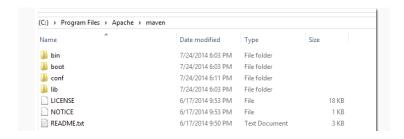


2. Download Apache Maven

Visit Maven official website, download the Maven zip file, for example: apache-maven-3.2.2-bin.zip. Unzip it to the folder you want to install Maven.

Assume you unzip to this folder - C:\Program Files\Apache\maven

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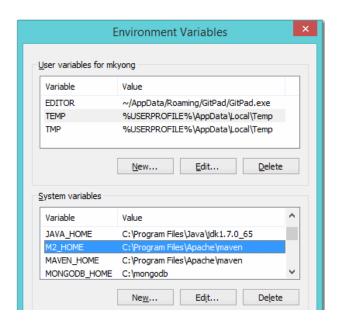


Note

That's all, just folders and files, installation is NOT required.

3. Add M2_HOME and MAVEN_HOME

Add both M2_HOME and MAVEN_HOME variables in the Windows environment, and point it to your Maven folder.



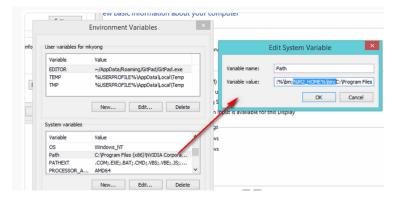
M2_HOME or MAVEN_HOME

Maven document said add M2_HOME only, but some programs still reference Maven folder with MAVEN_HOME, so, it's safer to add both

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4. Add To PATH

Update PATH variable, append Maven bin folder – %M2_HOME%\bin, so that you can run the Maven's command everywhere.



5. Verification

Done, to verify it, run mvn -version in the command prompt.

C:\Users\mjoy>mvn -versionApache Maven 3.2.2 (45f7c06d68e745d05611f7fd14efb6594181933e; 2014-06-17T21:51:42+08:00)Maven home: C:\Program Files\Apache\mavenJava version: 1.7.0_65, vendor: Oracle CorporationJava home: C:\Program Files\Java\jdk1.7.0_65\jreDefault locale: en_US, platform encoding: Cp1252

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Maven Installation

Pre-Request: Maven Home valuable is already set Up in Environment variable (How to Install go to Page)

Steps

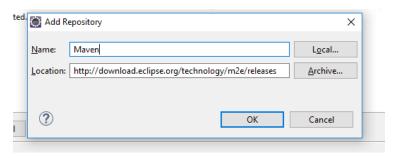
- 1) Open Ellipse
- 2) Click on Install new software under Helps



3)Click on ADD

4)Enter Name: Maven

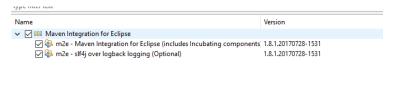
5)Ente URL: According to Release Note (Example-http://download.eclipse.org/technology/m2e/releases). You can check from http://www.eclipse.org/m2e/



6)Click on OK

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7)Select the Maven Integration for Eclipse and Click Next



Note: It will calculate the dependency time may take some time

8) click Next after review the software which you are installing



9) Accept the terms and license agreement and click on Finish

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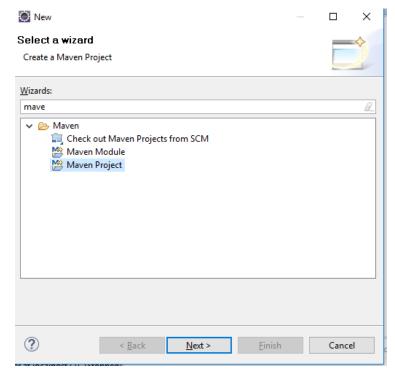
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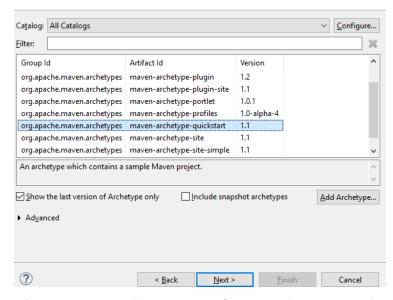
10)It will install maven and ask for restart the Eclipse. Restart Eclipse

11) Create a new project

File ->New ->Others->Maven->Maven Project

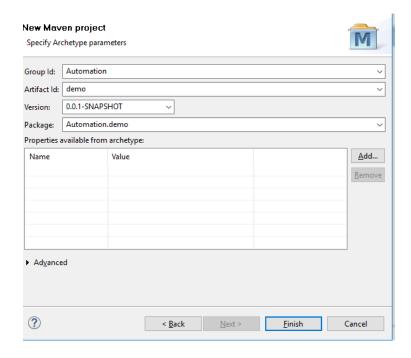


- 12)Use default work location and Select the current location
- 13) Select quick start project and Click on Next



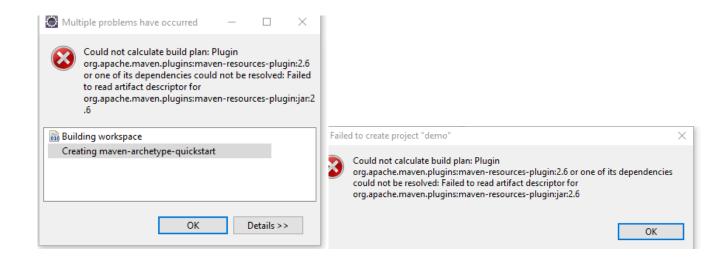
14)Enter Group ID: Example Automation, Artifice ID: Example Automation and Keep other things remain same.

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15)If you are getting bellow error don't be afraid and keep patient and follow the steps as it is mention

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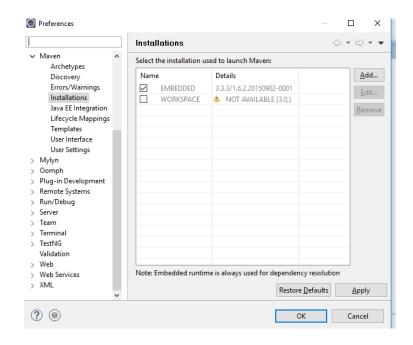


- 15) Open folder conf where you downloaded the Apache Maven (For My case: F:\selenium\apache-maven\apache-maven-3.5.0\conf)
- 16)Setting xml file
- 17)Add this Entry and save
 - <localRepository>F:\selenium\apache-maven\apache-maven-3.5.0\repository</localRepository>

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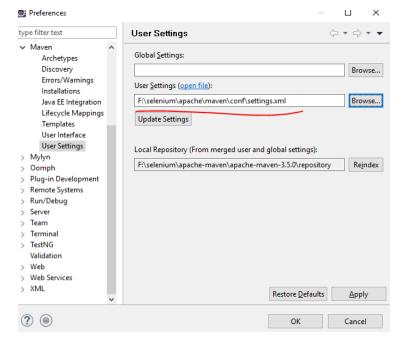
Step 18) Open Window/Reference on Eclipse.



- 19) Click on ADD
- 20) Enter the directory where maven is installed (This should be the MAVEN HOME)
- 21) Installation Name Will Auto populate Click on Finished
- 22)Select Apache Maven and click on Apply
- 23) Declare the position of the Maven configuration file which was changed last time.

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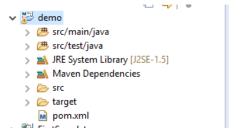
24)Click on User setting and upload the Setting XML file



- 25)Click on Update and OK
- 26) Check Updating Dependency Maven. After updating update the project

Right Click on the Project -> Maven-> Update Project

28)Below folder structure will Create



Your Maven Installation is done. Now don't sits idle start working.

Over View of Maven Project

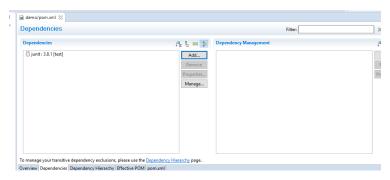
1)**prom.xml:** Impotent file in maven which will malintents all the dependency to the project all over the groups .and make the project in same dependency we use prom.xml file.

1.a) Adding Dependency to the project :

Steps

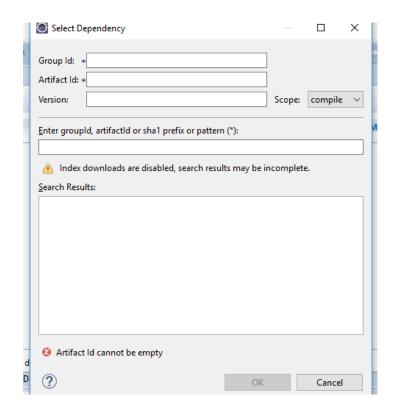
- a) Open prom.xml
- b) Navigate to dependency

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c)click on ADD

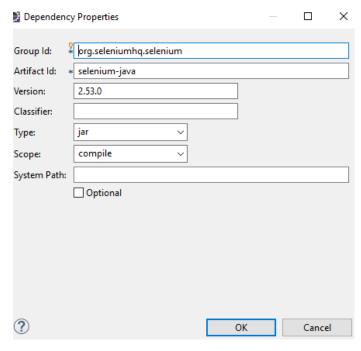
d)Enter Group ID and Artifact ID



Example: Adding Selenium Dependency

Search Dependency in google ()

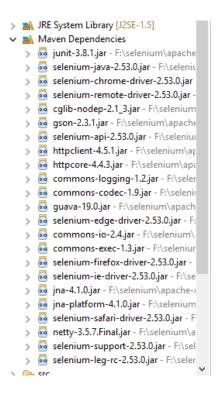
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Click on OK and save the project. It will download selenium mentioned version

e) Check on Maven Dependency. It will add all the Jar it self

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2) src/main/java: Contains all the base java classes which will be called during the teste case execution

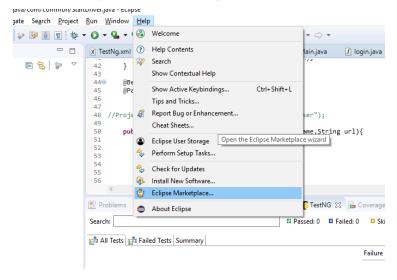
3)src/test/java: Contains all the Test classes for the automation

How to Install TestNg in Eclpse

Don't be bored Take a break again continue To Next Page no:

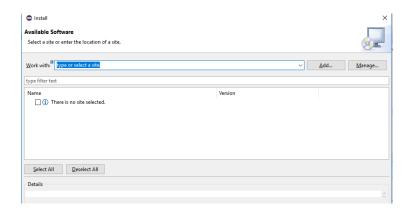
Step1)

Launch the Eclipse IDE and from Help menu, click "Install New Software".

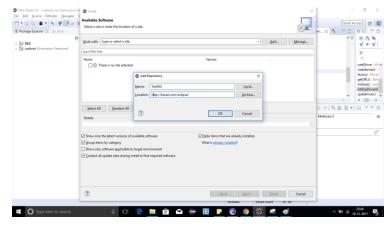


2) You will see a dialog window, click "Add" button.

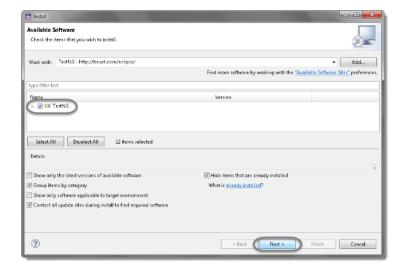
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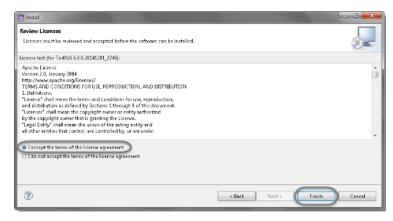
3) Type name as you wish, lets take "**TestNG**" and type "http://beust.com/eclipse/" as location. Click OK.



4) You come back to the previous window but this time you must see TestNG option in the available software list. Just Click TestNG and press "Next" button.



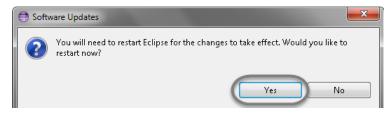
5) Click "I accept the terms of the license agreement" then click Finish.



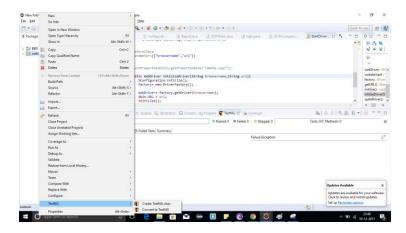
6) You may or may not encounter a Security warning, if in case you do just click **OK**.



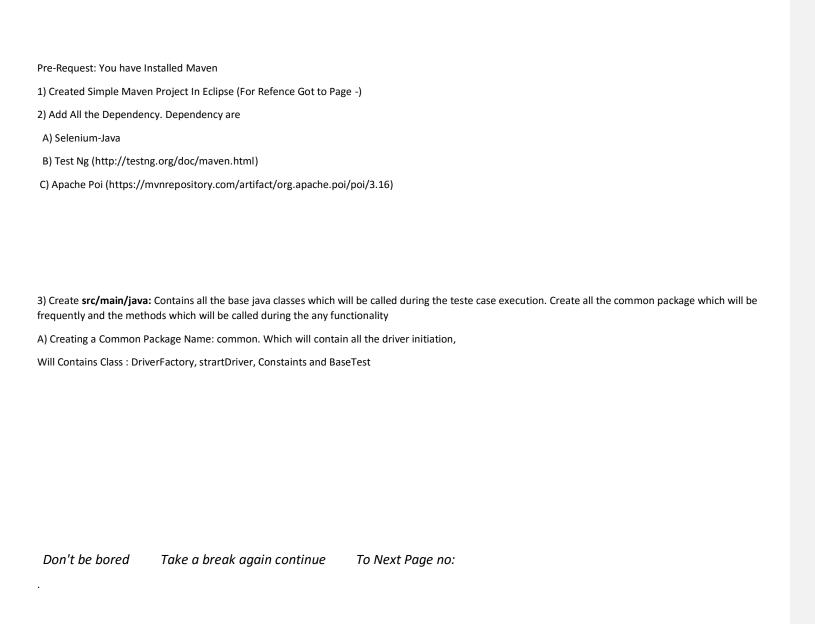
- 7) Click **Next** again on the succeeding dialog box until it prompts you to Restart the Eclipse.
- 8) You are all done now, just Click Yes.

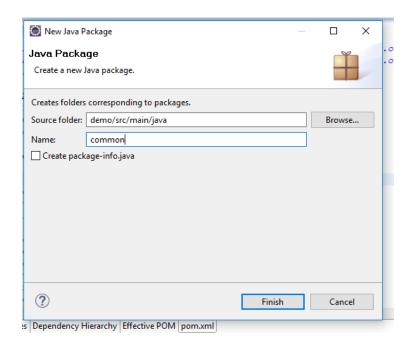


- 9) Proceed with your workplace.
- 10) After restart, verify if TestNG was indeed successfully installed. Right click on you project and see if **TestNG** is displayed in the opened menu.



Selenium Framework





Class 1)

Constraint Class: Which will Store All the Constraints

Code:

//////

package common;

Don't be bored Take a break again continue To Next Page no:

public static final String IE_BROWSER = "ixplore";
public static final String FF_BROWSER = "Firefox";
public static final String CHROME_BROWSER = "chrome";
public static final String MISSING_PAGE_MSG = "page is missing";
}
Class 2)
DriverFactory : Which Will contains and setup all the driver details
Note: As of now I don't have maven dependency for the Driver Binary location. Means we can add the driver in maven dependency later we can use it. Later will discuss on this. Currently I have downloaded my driver in my system and using the driver by setting the system property
Code:
////// package common;
package common;
package common;

Commented [MC1]: maven dependency for Driver need to give more details

```
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.ie.InternetExplorerDriver;
public class DriverFactory {
  private static String BrowserDetails =null;
  public static String getBrowserDetails() {
    return BrowserDetails;
  private WebDriver webDriver=null;
  public WebDriver getDriver(String driver){
    try{
   if(driver.equalsIgnoreCase(Constraints.CHROME_BROWSER)){
      System.setProperty("webdriver.chrome.driver","F:\\selenium\\chromedriver_win32\\chromedriver.exe");
      webDriver= new ChromeDriver();
      BrowserDetails= Constraints.CHROME_BROWSER;
 Don't be bored
                        Take a break again continue
                                                               To Next Page no:
```

```
else if (driver.equalsIgnoreCase(Constraints.FF_BROWSER)){
System.setProperty("webdriver.gecko.driver","F:\\selenium\\chromedriver_win32\\chromedriver.exe");
      webDriver= new FirefoxDriver();
      BrowserDetails= Constraints.FF_BROWSER;
    else if (driver.equalsIgnoreCase(Constraints.IE_BROWSER)){
      System.set Property ("webdriver.ie.driver", "F:\selenium\liEDriverServer\_x64\_2.52.0\liEDriverServer.exe");
      webDriver= new InternetExplorerDriver();
      BrowserDetails= Constraints.IE_BROWSER;
    else {
 Don't be bored
                        Take a break again continue
                                                               To Next Page no:
```

```
System.setProperty("webdriver.gecko.driver","F:\\selenium\\geckodriver\\geckodriver.exe");
      webDriver= new FirefoxDriver();
      BrowserDetails= Constraints.FF_BROWSER;
    return webDriver;
    catch(Exception a){
      System.out.println("Error oocured in Driver factory ");
      System.out.println(a.getMessage());
      return null;
///
 Don't be bored
                        Take a break again continue
                                                              To Next Page no:
```

Class 3

StartDriver: Whis is a @BeforeClass means it will execute before the test test cases starts execution. It will take the brwoser and the URL and inititate the driver and open the page it will be called by the each test case to inititate the precondition

It containts alsi @Afterclass, means it will executre the post condition after the test. Currently it is having only closing the browsers

Code:
package common;

import org.openqa.selenium.WebDriver;
import org.testng.annotations.AfterClass;
import org.testng.annotations.BeforeClass;
import org.testng.annotations.Parameters;

public class StartDriver {

private DriverFactory driver=null;

protected WebDriver webDriver=null;

```
public WebDriver getWebDriver() {
 return webDriver;
protected String URL=null;
public String getURL() {
   return URL;
public void setURL(String uRL) {
   URL = uRL;
 @BeforeClass
@Parameters({"browsername","url"})
public void IntiateDriver(String browsername,String url){
  System.out.println("Entering the Initiate Driver method ");
  setURL(url);
  driver = new DriverFactory();
  webDriver=driver.getDriver(browsername);
  webDriver.navigate().to(getURL());
Don't be bored
                       Take a break again continue
                                                              To Next Page no:
```

```
System.out.println("Driver is initiated "+webDriver.getTitle());
  @AfterClass
  public void QuitDriver(){
    webDriver.close();
    webDriver.quit();
Class 4
Base: It is base class for each and every object method present in java folder under src .it will initiate he XPATHs for all the page. Its having all the common
methods which will be calling frequently by the methods for performing operation.main methods is initilize() which will initilize the XPATH file
Code:
package common;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;
 Don't be bored
                         Take a break again continue
                                                                  To Next Page no:
```

```
import java.util.Properties;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.support.ui.ExpectedConditions;
import\ org. open qa. selenium. support. ui. WebDriver Wait;
import org.testng.Assert;
public class Base {
public Base(WebDriver driver, String url){
  setWebdriver(driver);
  setUrl(url);
  initlize();
protected WebElement webelement;
 Don't be bored
                        Take a break again continue
                                                                To Next Page no:
```

```
protected Properties openpage;
public WebElement getWebelement() {
  return webelement;
/*public void setWebelement(WebElement webelement) {
  this.webelement = webelement;
}*/
protected static String url;
  public String getUrl() {
  return url;
public void setUrl(String url) {
  this.url = url;
  protected WebDriver webdriver;
 Don't be bored
                        Take a break again continue
                                                              To Next Page no:
```

```
public WebDriver getWebdriver() {
    return webdriver;
  public void setWebdriver(WebDriver webdriver) {
    this.webdriver = webdriver;
 //******************
  //Intilize property file
  public void initlize(){
    try {
      openpage = new Properties();
      //openpage.load(new
File Input Stream (System.getProperty ("F:\selenium\AutomationWorkspeace\demo\src\test\java\xPath\openPage.properties")));
      openpage.load(new FileInputStream(System.getProperty("user.dir").concat("/src/test/java/xpth/openPage.properties")));
   } catch (FileNotFoundException e) {
      System.out.println("Error occured in initilize method");
      System.out.println(e.getMessage());
 Don't be bored
                        Take a break again continue
                                                              To Next Page no:
```

```
} catch (IOException e) {
    // TODO Auto-generated catch block
    System.out.println("Error occured in initilize method");
    System.out.println(e.getMessage());
// All common methods
public void waitforElimentIsDisplay(String XPATH){
 for (int seceond=0;seceond <=30;seceond++){
   if(isPresent(By.xpath(XPATH),1)){
     break;
   else {
Don't be bored
                   Take a break again continue
                                                  To Next Page no:
```

```
System.out.println("ELEMENT is Not present ");
      System.out.println("STuck in waitforElimentIsDisplay");
public boolean isPresent(By by,int waitTime ){
  try{
    WebDriverWait wait = new WebDriverWait(webdriver,waitTime);
    wait.until (Expected Conditions.visibility Of Element Located (by));\\
    webdriver.findElement(by).isDisplayed();
    return true;
  catch(Exception e){
    System.out.println("Problem is in Preseent method");
    System.out.println(e.getMessage());
    return false;
 Don't be bored
                         Take a break again continue
                                                                 To Next Page no:
```

```
public WebElement getObejct(String XPATH){
  try {
    return webdriver.findElement(By.xpath(XPATH));
  } catch (Exception e) {
    // TODO: handle exception
    System.out.println("Error occured in getObejct");
    System.out.println(e.getMessage());
    return null;
public void clickObejct(String XPATH){
  waitforElimentIsDisplay(XPATH);
  webelement= getObejct(XPATH);
  webelement.click();
 Don't be bored
                        Take a break again continue
                                                               To Next Page no:
```

```
public boolean insertText(String XPATH,String strText){
  try {
    waitforElimentIsDisplay(XPATH);
    webelement = getObejct(XPATH);
    if(webelement.isEnabled()&& webelement.isDisplayed()){
      if(strText.isEmpty()){
        return true;
      else{
        webelement.clear();
        webelement.sendKeys(strText);
        Thread.sleep(300);
        return true;
```

```
else{
      return false;
  } catch (Exception e) {
    // TODO: handle exception
  System.out.println("Error occured in INsert method");
  System.out.println(e.getMessage());
  return false;
/*public boolean asert(String value,String actual,String expected ){
try {
  switch(value){
                        Take a break again continue
 Don't be bored
                                                               To Next Page no:
```

4)

TestNg.xml: It is a test Ng xml which contains all the test cases which required to be run. Not only test cases you can call the multiple test suits which can contains test cases as well. It contains the base parameter like browser.URL and etc. The main function is it will search test case mention in the test case parameter in the src/test/java and contains the @test annotation. And before the Strat execute the Test class it will search @Beforeclasss and it will execute that first. After running the test cases, it will search for #AfterTest class and will run that class as a post condition

<suite name="basic"> <parameter name="browsername" value="iexplore"/> <parameter name="url" value="http://www.google.com/"/> <test name ="openbrowser"> <classes> <class name="common.Openpage"/> </classes> </test> </suite> Don't be bored

TextNg.xml code below (remined that spelling is correct)

Take a break again continue To Next Page no:

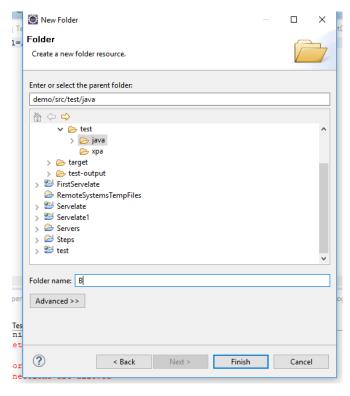
Src/test/java: the folder contains all the test case class by model wise. Each test cases which needs to be run in testng.xml will be here with @Test annotation. And each class will extends the startDriver class to execute the preconditions and post conditions. And it will contains all the XPATH for each page (you can places and groups as a different folder). In each test method will have @Test annotation

Example given: Test cases written for Open Gmail from google starting page

Code:		
package common;		
import org.openqa.selen	ium.By;	
import org.testng.annota	tions.Test;	
import Gmail.basic;		
public class Openpage ex	tands StartDriver/	
public class Openhage ex	terius Startbriver(
()(
public Openpage(){		
super();		
}		
Don't be bored	Take a break again continue	To Next Page no:

```
@Test
public void TC_01(){
    Gmail.basic login = new basic(super.webDriver, URL);
    System.out.println("print");
    if(login.openGmail()){
      System.out.println("passed");
    else{
      System.out.println("failed");
  /*public void openpage() {
    System.out.println("print");
 Don't be bored
                        Take a break again continue
                                                               To Next Page no:
```

Base t	est= new Base(s	super.webDriver, URL);		
test.ge	etWebdriver().fi	ndElement(By.linkText("Gmail")).cl	click();	
}*/				
}				
•				
5)XPATH:	Write Xpath for	each element present in page.To t	take XPATH from the page follow the steps	
	lder under src/t		, <u>-</u>	
•		• •		
A) Right cli	ck on src/test/ia	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
A) Right cli	ck on src/test/ja	ave->New->Other->search folder->	>	
		ave->New->Other->search folder->	>	
	ck on src/test/ja	ave->New->Other->search folder-> Take a break again continu		



B)Select Normal folder

C)Click on next and enter name

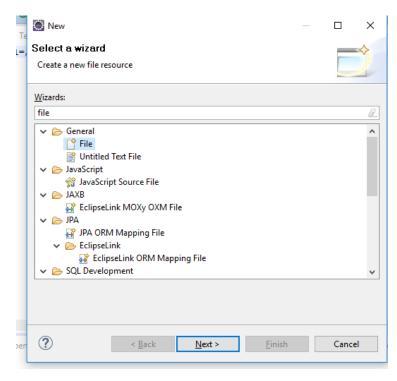
D)Click finish

2) Create a property file

A) Right Click on newly created folder ->New->others->file-Select File

Don't be bored Take a break again continue To Next Page no:

.

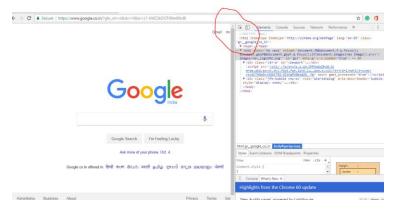


B) Enter name like Openpage.properties

3)Create XPATH on that properties file

A) open the page (https://www.google.co.in/) in chrome

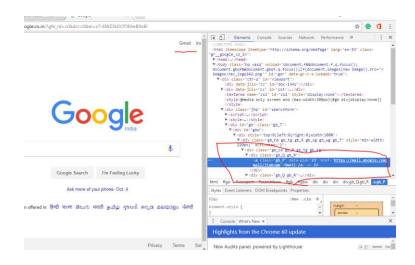
B) Click F12 for developer type



- D) Click on inspect element
- E) over the mouse on the page for which you want to take the XPATH (Example Gmail)

Don't be bored Take a break again continue To Next Page no:

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- F) go to the Element section, the selected element will show all the details
- G) Right Click on it you will get the Copy ->copy XPath
- H) In Property file create a variable and past the XPATH

Sample code for XPATH

click_gmail=//*[@id="gbw"]/div/div/div[1]/div[1]/a