**Page object model and Log4j [mercury /newtours.demoaut.com--?** **http:// guru99.com/test/newtours/]**

**It means -**Organizing the page Elements . Maintaining and managing all the page objects in a diff way or in a different file. This is the concept of POM.

**Why it is needs ?** If I write every thing like Identification and Operational method in the same class itself. If you have huge statement and Suppose something is repeating multiple time , we need to go everywhere and change.

Suppose tomorrow some properties are dynamically changing , So they are not constant value. So every time whenever the change is happened, you need to there some statement and then you need to change that particular statement. So this is keep on happening in the real time. If you take two to three pages, you will face much issue

So In the real time if you go for the complex project , you will face lot of many problem with this .

**Advantage of POM**- Suppose you have Two classes. If tomorrow some elements properties has been changed. Now which class we need to modify. We no need to touch the main class/ or @ Test class. We need to go page class object and here you need to change which ever properties are being /has been changed. So this is basic concept of POM.

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**driver.findElement(By.name(“vvv”).sendKeys()—This statement contains two different Actions-:**

1. First Actions is Identifying the element-> **driver.findElement(By.name(“vvv”) > Identification method .** So this is identification of element
2. 2nd Action is Operation --What kind of operation we need to do on the element- **sendKeys()—This is operational /Action method.**

In page object model like we have 100 statement in my program/Application . In 100 statements. Suppose some elements are repeating multiple time. Same number of objects [**findElement(By.name** ]elements we need to repeat multiple time. One more thing is In real time you will not automate only one page. You should automate multiple pages and you need navigate throw different pages.

So If you come to the complex project, if you write this model, This is not much efficient .**driver.findElement(By.name(“vvv”).sendKeys()—**

So In page object model we will divide this entire statement -driver.findElement(By.name(“vvv”).sendKeys()— into two different parts. So for that reason We will create-

1. --one class for identification method and
2. --another class is for operational method**.**

**So If I have an Application having 5 different pages like ,**

1. **Login page**
2. **Home page**
3. **Customer screen**
4. **Transaction screen**

**So every page having set an element. Like in ---**

* Login page – is having 3 diff elements
* Home page – is having 5 diff elements
* Customer page is having 20 diff elements
* Transaction page is having 30 elements **,**

There are so many elements are there.

So in the real time for every page we will create one class but class contains only Identification methods. We don’t write any operational methods . For Example LoginPage. Java , I have created one Class and that class contains only Identification methods not operational methods.

So similarly for each and every page of your application, you will create one java file. Another more example are (HomePage.java, CustomerPage.java).

So in this page I will write this line only ->driver.findElement(By.name(“vvv”) and then I will store this element in some variable. So this is Username equal to WebElement. Because this is a web element.

WebElement username = dr.findElement (By.id/name/xpath(“”));

===================================================================Main Class ---/Test Class

1. We will contain one main class or Test class. In this particular class we will do Operations.

If we want to perform operation, we require Element, That’s why we will call this particular classes to interact with these element/ or find out the elements [LoginPage.java, HomePage.java,CustomerPage.java, TransactionPage.java].

1. So this method will be called and return the webelement and on that element we will use sendKeys. Like my LoginPage.entervalues().sendkeys. So this main class will call the page object class > page object class will provide that element to the main class > and then main method will perform that particular element. And then it will interact to the application .

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Mercurytours

1. Create a java class for Registration page
2. Define some variables in the Registration class
3. Driver.findElement of By.id 🡪 here By.id is a locator , it will point to this particular element. So if you give this address of element here then findElement () method will find that element. Because findElement () method requires the address the element, otherwise it will not find.

So By is a class. So By.name /id /xpath/linktext [whichever parameter you want]- this class element will provide the address. So we need to locate all the elements by using By dot method. So every element I will use By dot.

So Identifying each and every element in the Registration page by using By. name /id /xpath/linktext [whichever parameter you want]-

After Locating this Element I am storing that Element in some variable . some variable like RegLink, FirstName, LastName, Phone, email, address.

\*\* Every Element is having set an Actions.

By RegLink=By.*linkText*("REGISTER");

By FirstName=By.*name*("firstName");

By LastName =By.*name*("lastName");

By phone = By.*name*("phone");

By email = By.*id*("userName");

By address1=By.*name*("address1");

By city = By.*name*("city");

By state= By.*name*("state");

By postcode =By.*name*("postalCode");

By country = By.*name*("country");

By userName= By.*name*("email");

By password = By.*name*("password");

By confirmedpassword=By.*name*("confirmPassword");

By submit = By.*name*("submit");

Here If it is RegLink – We need to click

IF it is FirstName – we need to enter some value.

If it is a country – we need to select some value from the drop down box. Like this

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WebDriver ---This class is also required Driver Object. So I have created one Driver variable. But I have not Initiated FireFox or chrome or whatever I have not specified anything. But this class required Driver object . From where it will get the driver object.

So this will get the driver object from the another class –

So I have created one Constructor in this class**. So Constructor name will be the same as the class name and It will execute whenever we create object for this particular class. And in this constructor I will initialize the driver. You will get the driver from outside and assign the driver to the Driver element**

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Methods--- for Every Element I need to write one method—

1. First we need to find element using locator and
2. The variable we need to pass which I have created like RegLink is a variable

By **RegLink**=By.*linkText*("REGISTER");

1. This method is for select country from drop down menu---

**public void setCountry(String coun) {**

**WebElement ele =dr.findElement(country);**

**Select drop = new Select(ele);**

**drop.selectByVisibleText(coun);**

**}**

**4)** **// in this class we don't use any main() or @Test annotation**

**// this class contain only reg page elements**

**5)At the beginning itself we will identify all the elements and then for each element we will write diff kinds of methods.**

**6) Values are coming from the main () or @Test**

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**Cross Browser Testing -**

In Cross browser testing you are giving the XML file and Like Here we have one Test [and include Main Test] only that contain in one Java class.

We are passing One time IE, 2nd time Chrome , and third time we are sending , that means multiple browser we are sending as a parameter throw XML file.

In the Main Test [in one java class], Which browser we need to Execute , For that we will write one conditional method that will take care which browser will be opened. And we will write one more method that contain Actual operation, This operation will be done on this particular browser that you give inside the Conditional method.

Now Here [ Operation method in the main test class]which our operation are coming ,again we will create one more class which contain only Page Object. Then Xml file method will talk to the page object whenever it is required.

So Main Java page and Page object .java they are both different from xml file. This Page object only supported to the main method. This contain we will divide it page element and actual operation in different class.

So this is one model-

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**Another Model of POM—** Here we have Identification method and Operational method and parameters are coming from the External class.

1. ADD @FindBy – which is automatically Identified the Element -How we have identifying the Link.
2. All Element objects are Web Element

Example ---I want to find a Registration link and Registration link is a w.eb Element ,

WebElement RegistrationLink;

Now We need to identify this ­-🡪 WebElement-

So How to identify ?

I will identify using @FindBy annotation method . So This annotation will find the element.

Now Which element we need to find. How We need to identify ? @FindBy(how=How) . Here how -🡪 is a variable . and This How 🡪 is a class.

Then use dot > it will show the different method – className , CSS, ID, name , linktext, partial Link Text etc. So you can take any one locator .

Now we will set here. How it will identify ? So By Link\_Text it will identify. So Where is and What part? using=”REGISTER”. So REGISTER is a link\_text.

@FindBy(how=How.LINK\_TEXT,using="REGISTER")

WebElement RegLink ;

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**Time – 44.26—**

**LOG4J**

Question –What is Log file? **//What is log? Capturing information/Activities at the time of program execution.**

In software industry Every Application have maintained some log files .

Example – In Manual Testing If you find any Bug[What are the information you will provide the developer,

🡪So we will provide the steps, Screenshots, and

-🡪 some times steps and screen short are not enough to analysis that issues then we have to provide the log file also. ]

Log4j File- Every Application whichever application it can be , it is webbase, windowbase , any kind of application . if you are working with that application , So whatever transaction or whatever operation you are doing on that application, will be logged into one file . Those entries we will be entered into some file at the backend that Actual user can not see .

Requires –

1)Log4j jar file / add dependency in POM[jar file ]

2) Log4j .properties file is also required.[Configuration file] or you can use

3) log4j.xml file

So log4j.properties is file and log4j.xml is another file.

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1. Log4j.jar file should be added to java project build path
2. Place log4j.properties (or) log4j.xml in project home directly

Before setting the chrome driver we need to do two things -------------------

1. Create logger object for logger class—this class is present in the jar file

Under the logger class we need a static method - >getLogger and we have to pass the same class name as a parameter.

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Practical Example --RAgov

Step 1:Add Log4j libraries in the java project

Can add jar files or maven dependency

https://logging.apache.org/log4j/2.x/...

Step 2 : Create reference for Logger in the class

Class where you want to add log statements

Step 3 : Create log4j.xml or log4j.properties file

What is the difference ?

Step 4 : Run and Validate

Log4j - log levels

<https://logging.apache.org/log4j/> https://logging.apache.org/log4j/2.x/ then go to Maven option and then Click on it Then copy the dependency . and paste it in POM