



We are on a mission to address the digital skills gap for 10 Million+ young professionals, train and empower them to forge a career path into future tech

Page Object Model & Page Factory

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Introduction of Page Object Model

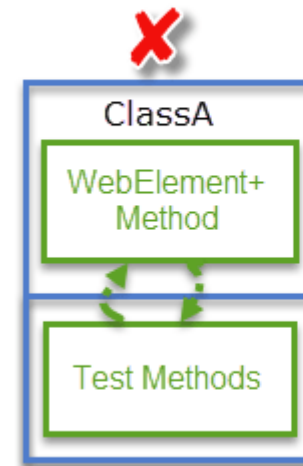


Introduction of page object model

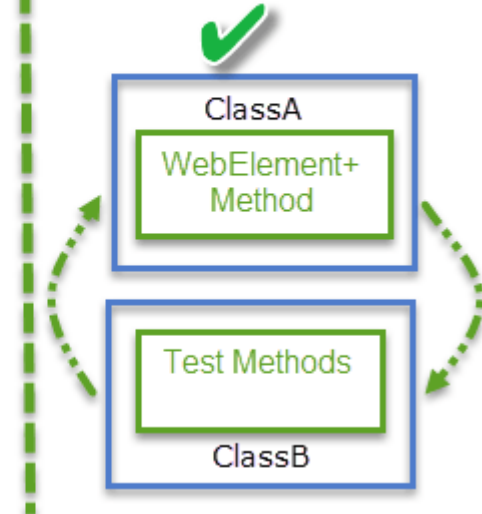
Introduction of Page Object Model

- Page Object Model (POM) is a design pattern, popularly used in test automation that creates Object Repository for web UI elements.
- The advantage is it reduces code duplication .
- In this model each web page of the application is considered as a separate class file
- In this model each web page of the application is considered as a separate class file

Non POM Structure



POM Based Structure



Introduction of page object model

Introduction of Page Object Model (Contd.)

- The Page class will identify the web elements of that web page and also contains page methods which perform operations on that web elements

Annotations



Annotations

@FindBy Annotation

- The @FindBy annotation is used in Page Objects in Selenium tests to specify the object location strategy for a WebElement or a list of WebElements
- Using the PageFactory, these WebElements are usually initialized when a Page Object is created.
- The @FindBy annotation is used to locate one or more WebElements using a single criterion

Annotations

@FindBy Annotation

Example:

```
public class GooglePage
{
    @FindBy(how = How.NAME, using = "q")
    private WebElement searchBox;
    public void searchFor(String text)
    {
        searchBox.sendKeys(text);
        searchBox.submit();
    }
}
```

Advantages and Disadvantages of Page Object Model



Advantages and Disadvantages of Page Object Model

Advantages of Page Object Model

1.Object Repository:

- You can create an Object Repository of the fields segmented page-wise.
- This as a result provides a Page Repository of the application as well.
- 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.

2.Functional Encapsulation:

- All possible functionality or operations that can be performed on a page can be defined and contained within the same class created for each page.
- This allows for clear definition and scope of each page's functionality.

Advantages and Disadvantages of Page Object Model

Advantages of Page Object Model

3.Low maintenance:

- Any User Interface changes can swiftly be implemented into the interface as well as class.

4.Programmer Friendly:

- Robust and more readable.
- The Object-oriented approach makes the framework programmer friendly.

5.Low Redundancy:

- Helps reduce duplication of code.
- If the architecture is correctly and sufficiently defined, the POM gets more done in less code.

6.Efficient & Scalable:

- Faster than other keyword-driven/data-driven approaches where Excel sheets are to be read/written.

Advantages and Disadvantages of Page Object Model

Disadvantages of Page Object Model

1.High Setup Time & Effort:

- Initial effort investment in development of Automation Framework is high.
- This is the biggest weight of POM in case of web applications with hundreds/thousands of pages.
- It is highly suggested that if this model is decided to be implemented, then it should be done parallel to development of the application. Refer V-Model for Software Development Life Cycle.

2.Skilled labor:

- Testers not technically sound or aware of programming best practices are a nightmare in this case. Perhaps this is the biggest mistake to make, employing unskilled labor in hopes of training them during implementation.
- Unskilled testers need to undergo a Training Boot Camp to be ready for such an undertaking.
- Also the Architecture of the framework should be defined clearly and completely before development in order to avoid any loopholes in later stages.

Advantages and Disadvantages of Page Object Model

Disadvantages of Page Object Model

- Every application is different and it may require the automation framework to be significantly tailored towards it.

3.Specific:

- Not a generic model. Automation Framework developed using POM approach is specific to the application. Unlike keyword-driven/data-driven frameworks, it is not a generic framework.

Program 1

```
public class LoginwithPageFactory {  
    @Test  
    public void Login1() throws InterruptedException {  
        System.setProperty("webdriver.chrome.driver", "E:\\Testing\\chromedriver.exe");  
        WebDriver driver = new ChromeDriver();  
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/validatecredentials");  
  
        PageFactory.initElements(driver, Loginpageobjects1.class);  
        Thread.sleep(7000);  
        Loginpageobjects1.username.sendKeys("Admin");  
        Loginpageobjects1.password.sendKeys("admin123");  
        Loginpageobjects1.btnLogin.click();  
        //driver.quit();  
    }  
}
```

Page Object Model

Program 1

```
public class Loginpageobjects1 {  
    @FindBy(id="txtUsername")  
    public static WebElement username;  
    @FindBy(id="txtPassword")  
    public static WebElement password;  
    @FindBy(id="btnLogin")  
    public static WebElement btnLogin;  
  
}
```


Page Object Model

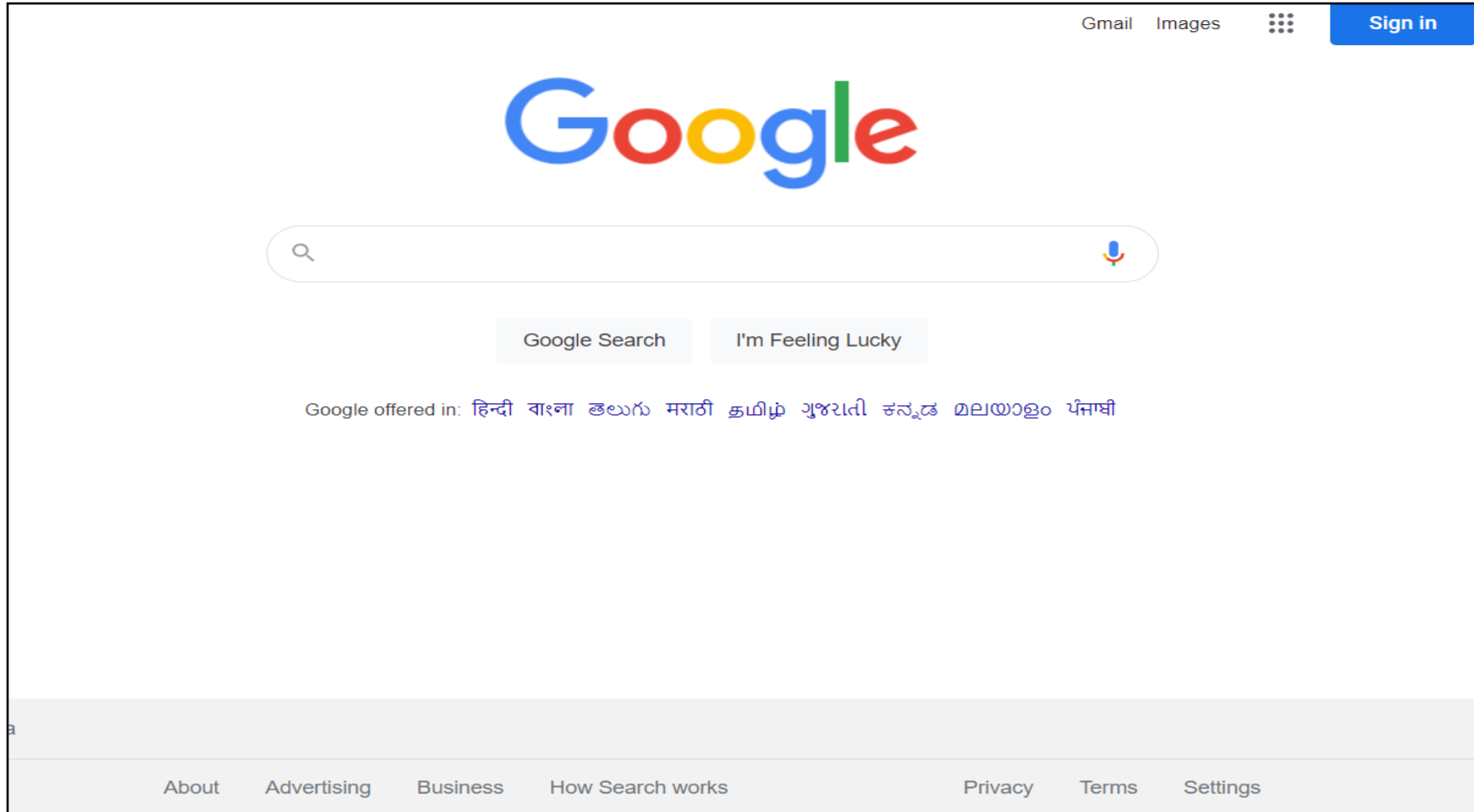
Output



Program 1

```
public class Screenshot1 {  
    @Test  
    public void TakeScreenShot1() throws Exception{  
        WebDriver driver ;  
        System.setProperty("webdriver.chrome.driver","c:\\Drivers\\chromedriver.exe");  
        driver = new ChromeDriver();  
        driver.get("https://www.google.com");  
        String filePath="c://swarna/ss.png";  
        TakesScreenshot scrShot =(TakesScreenshot)driver;  
        File SrcFile=scrShot.getScreenshotAs(OutputType.FILE);  
        File DestFile=new File(filePath);  
        FileUtils.copyFile(SrcFile, DestFile);  
    }  
}
```

Output



Quiz



1) Which locator is used by @FindBy annotation?

a) css

b) xpath

c) TagName

d) All the above

Answer : Option d)

Quiz



2) POM is a

a) Design Pattern

b) Interface

c) Package

d) Function

Answer : Option a)

Quiz



3) Which method is used to initialize driver in Page Object Model?

a) init()

b) initDriver()

c) initElement()

d) initElements()

Answer : Option d)

THANK YOU