

## CODING PROGRAMME

### Write down syntax of iterator function?

```
Iterator<String> it = studentList.iterator();  
while(it.hasNext()){  
    System.out.println(it.next());  
}
```

---

### How to find max min of an unsorted array?MAX

```
public class maxmin {  
  
    public static void main(String[]  
    args) { int [] arr = {1, 45, 67, 98,  
    455, 678};  
  
    int max =  
    Integer.MIN_VALUE;for  
    ( int element : arr){  
  
        if(element>ma  
        x){  
            max=element;  
        }  
    }  
  
    System.out.println("Max element is " + max);  
}}
```

## MIN

```
public class maxmin {  
  
    public static void main(String[]  
args) { int [] arr = {1, 45, 67, 98,  
455, 678,-6};  
  
    int min = Integer.MAX_VALUE;  
  
    for ( int element :  
        arr){  
        if(element<min  
        ){  
            min=element;  
        }  
    }  
  
    System.out.println("Min element is " + min);  
}}
```

### How to reverse any array?

```
public class reverse array {  
  
    public static void  
    main(String[] args) { int []  
    arr = { 1, 45, 67, 98, 455,  
    678};  
  
    int l = arr.length;  
  
    int n =  
    Math.floorDiv(l,2  
    );int temp;  
  
    for(int i=0;  
    i<n;i++){  
        temp=  
        arr[i];  
        arr[i]= arr[l-  
        i-1];  
  
        arr[l-i-1]= temp;  
    }  
  
    for(int element:arr)  
    {  
        System.out.print( element + " ");  
    }  
    }  
}
```

---

```

public class reverse array {

public static void
main(String[] args) { int []
Array
={7,8,9,3,4,6,11,67,98};

int k=Array.length-1;
for(k=Array.length-
1;k>=0;k--){

    System.out.print( Array[k] + " ");

}

}}

```

---

### How to remove duplicate elements from ArrayList?

we can handle this scenario via **LinkedHashSet**

```

ArrayList<Integer> numbers = new
ArrayList<Integer>(Arrays.asList(1,2,2,4,6,7,2,3,5,4,3,8,2,8));
LinkedHashSet<Integer> linkedHashSet = new
LinkedHashSet<Integer>(numbers); ArrayList<Integer>
numbersListWithoutDuplicate = new ArrayList<Integer>(linkedHashSet));
System.out.println(numbersListWithoutDuplicate);

```

---

### How to reverse an Integer?

```

int num =
12345;int
rev = 0;
while(num
!=0){
rev =rev *10+
num % 10;num =
num/10;

}

Sysout (rev)

}

```

### How will you remove special/junk char from string?

We have to use regular expression [a-z, 0-9, A-Z]

```
String str = "Y^%^*%&*^(Pankaj";
```

```
Str= Str.replaceAll("[^a-z, 0-9, A-Z], "");
```

```
Sysout(str);
```

### Handle windows authentication popup without using any third party tool .

Using Autoit (Third Party Tool)

Download and in Autoit editor write script through below command

```
ControlFocus()
```

```
ControlSet()
```

```
ControlClick()
```

Save file and Compile Script with your version and after that you get .exe file.

Java code for executing .exe file

```
Runtime.getRuntime().exec(\\Path)
```

It throws checked exception IOException.

### Another way of doing this is using Robot class

Robot Class is available under java.awt.package.

Methods in Robot Class can be effectively used to do the interaction with pop-ups in Web Applications. Selenium does not provide support to handle browser pop-ups or the native operating system pop-ups. To handle this kind of pop-up, we need help of Robot Class. This is also used while we need to handle file upload and download activity using selenium Webdriver.

### Some of the popular methods under Robot Class are:

```
.keyPress();
```

```
.mousePress();
```

```
.mouseMove();
```

```
.keyRelease();
```

```
.mouseRelease();
```

**First of all create the object of the Robot Class as following:**

```
Robot robot=new Robot();
```

1. **.keyPress()** `robot.keyPress(KeyEvent.VK_ESC);` This will press Escape key on keyboard.

2. **.keyRelease()** `robot.keyRelease(KeyEvent.VK_CAPS_LOCK);` This will release the CAPS\_LOCK key.

3. **.mousePress()** `robot.mousePress(InputEvent.BUTTON1_MASK);` This will press Left mouse button.

4. **.mouseRelease()** `robot.mouseRelease(InputEvent.BUTTON1_MASK);` This will release Left mouse button.

5. **.mouseMove()** `robot.mouseMove(coordinates.getX(), coordinates.getY());` This will move the mouse pointer to X and Y co-ordinates.

### **Different types of exception in selenium Webdriver.**

Examples:

```
class WebDriverException(Exception):
class ErrorResponseException(WebDriverException):
class InvalidSwitchToTargetException(WebDriverException):
class NoSuchFrameException(InvalidSwitchToTargetException):
class NoSuchWindowException(InvalidSwitchToTargetException):
class NoSuchElementException(WebDriverException):
class NoSuchAttributeException(WebDriverException):
class StaleElementReferenceException(WebDriverException):
class InvalidElementStateException(WebDriverException):
class NoAlertPresentException(WebDriverException):
class ElementNotVisibleException(InvalidElementStateException):
class ElementNotSelectableException(InvalidElementStateException):
class InvalidCookieDomainException(WebDriverException):
class UnableToSetCookieException(WebDriverException):
class RemoteDriverServerException(WebDriverException):
class TimeoutException(WebDriverException):
class MoveTargetOutOfBoundsException(WebDriverException):
class UnexpectedTagNameException(WebDriverException):
class InvalidSelectorException(NoSuchElementException):
class ImeNotAvailableException(WebDriverException):
class ImeActivationFailedException(WebDriverException):
```

#### **WebDriverException**

WebDriver Exception comes when we try to perform any action on the non-existing driver.

```
WebDriver driver = new InternetExplorerDriver();
driver.get("http://google.com");
driver.close();
driver.quit();
```

**NoAlertPresentException**

ACCELERATION

When we try to perform an action i.e., either accept() or dismiss() which is not required at a required place; gives us this exception.

```
try{  
driver.switchTo().alert().accept();  
}  
catch (NoAlertPresentException E){  
E.printStackTrace();  
}
```

### **NoSuchWindowException**

When we try to switch to an window which is not present gives us this exception:

```
WebDriver driver = new InternetExplorerDriver();  
driver.get("http://google.com");  
driver.switchTo().window("Yup_Fail");  
driver.close();
```

In the above snippet, line 3 throws us an exception, as we are trying to switch to an window that is not present.

### **NoSuchFrameException**

Similar to Window exception, Frame exception mainly comes during switching between the frames.

```
WebDriver driver = new InternetExplorerDriver();
```



When we try to perform an action i.e., either accept() or dismiss() which is not required at a required place; gives us this exception.

```
try{
driver.switchTo().alert().accept();
}
catch (NoAlertPresentException E){
E.printStackTrace();
}
```

### **NoSuchWindowException**

When we try to switch to an window which is not present gives us this exception:

```
WebDriver driver = new InternetExplorerDriver();
driver.get("http://google.com");
driver.switchTo().window("Yup_Fail");
driver.close();
```

In the above snippet, line 3 throws us an exception, as we are trying to switch to an window that is not present.

### **NoSuchFrameException**

Similar to Window exception, Frame exception mainly comes during switching between the frames.

```
WebDriver driver = new InternetExplorerDriver();
```

```
driver.get("http://google.com");
driver.switchTo().frame("F_fail");
driver.close();
```

In the above snippet, line 3 throws us an exception, as we are trying to switch to an frame that is not present.

### NoSuchElementException

This exception is thrown when we WebDriver doesn't find the web-element in the DOM.

```
WebDriver driver = new InternetExplorerDriver();
driver.get("http://google.com");
driver.findElement(By.name("fake")).click();
```

### TimeoutException

Thrown when a command does not complete in enough time.

### Write a program for string reverse (Asked)

```
class ReverseString
{
    public static void main(String args[])
    {
        String reverse = "";
        String s="manas is a good boy";
        int length = s.length();
        for ( int i = length - 1 ; i >= 0 ; i-- )
        {
            reverse = reverse + s.charAt(i);
        }
        System.out.println("Reverse of entered string is: "+reverse);
    }
}
```

### Can we enter text without using sendKeys()?

#### Yes by using JavascriptExecutor

```
WebDriver driver = new FirefoxDriver();
JavascriptExecutor executor = (JavascriptExecutor)driver;
executor.executeScript("document.getElementById('textbox_id').value='new value'");
```

**Write a program to check number is Prime.**

```
if (n<2){
    System.out.println("No is not prime");
}
else
{
    for(i=2;i<=n/2;i++)
    {
        res=n%i;
        if(res==0)
        {
            flag=false;
            break;
        }
    }
    if(flag)
        System.out.println(n + " is Prime Number");
    else
        System.out.println(n + " is not Prime Number");
}
```

**How to take a screen shot using selenium Webdriver**

```
import java.io.File;
import org.apache.commons.io.FileUtils;
import org.openqa.selenium.By;
import org.openqa.selenium.OutputType;
import org.openqa.selenium.TakesScreenshot;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.testng.annotations.Test;
public class takeScreenShotExample{
    public WebDriver driver;
    @Test
    public void openBrowser() throws Exception {
        driver = new FirefoxDriver();
    }
}
```

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```
driver.manage().window().maximize();
driver.get("http://www.google.com");
try{
//the below statement will throw an exception as the element is not found, Catch block will
get executed and takes the screenshot.
driver.findElement(By.id("testing")).sendKeys("test");
//if we remove the below comment, it will not return exception and screen shot method will
not get executed.
//driver.findElement(By.id("gbqfq")).sendKeys("test");
}
catch (Exception e){
System.out.println("I'm in exception");
//calls the method to take the screenshot.
getscreenshot();
}
}
public void getscreenshot() throws Exception
{
File scrFile = ((TakesScreenshot)driver).getScreenshotAs(OutputType.FILE);
//The below method will save the screen shot in d drive with name "screenshot.png"
FileUtils.copyFile(scrFile, new File("D:\\screenshot.png"));
}
}
```

**How can we get the font size, font colour ,font type used for a particular text on a web page using selenium web driver ?**

```
driver.findElement(By.XPath("Xpath ")).getcssvalue("font-size);
```

ACCELERATION

```
driver.findElement(By.XPath("Xpath ")).getcssvalue("font-colour");  
driver.findElement(By.XPath("Xpath ")).getcssvalue("font-type");  
driver.findElement(By.XPath("Xpath ")).getcssvalue("background-colour");
```

### **How do we handle dynamic elements without using X path ?**

While automating any web application using any automation tool, be it open-source like selenium webdriver or commercial like UFT/QTP. we have to identify locators for elements which we need to interact with. It could be ID, Name, CSS Selector, XPath or combination of all these. It is quite straight forward to identify locators for static elements which are clearly defined with static IDs. But in some applications, we come across dynamic elements and it becomes quite challenging to identify locators for such dynamic elements.

#### **1. Absolute Xpath**

Xpath Position or Absolute Xpath are most frequently used to resolve the dynamic element issues. Only problem with using XPath locators is that they are very fragile. They are most prone to breakage in case of change in web page. This factor could get worse exponentially as the test suite size and complexity increases. Below is an example of Absolute XPath and XPath Position

```
web_element_name=html/body/div[30]/div[2]/div[2]/div/div/div/div[1]/table/tbody/tr/td[2]/table/tbody/tr/td[1]/table/tbody/tr/td[1]/table/tbody/tr[2]/td[2]/em/button  
//p[6]/label[2]/div/ins
```

#### **2. Identify Element by starting Text**

If the dynamic elements have a definite pattern to them, then we can also use JavaScript functions like “starts-with” or “contains” in our element locators to separate the dynamic part of locator from static part. Selenium Page 36

For example, in case of dynamic submit button Id example which we discussed earlier, we can apply 'starts-with' function to access this locator irrespective of its dynamic part.

XPath: `//button[starts-with(@id, 'Submit-')]`

### 3. Identify Element by containing Text

Similarly, in some scenarios where dynamic element is surrounded by a static value, we can use 'contains' function. For example we have following element locators...

`<input class="new-userfield-001">`

`<input class="old-userfield-002">`

As we can see 'usefield' part of element is static, so we can apply 'contains' function to access this element locator as shown below...

XPath: `//input[contains(@class, 'suggest')]`.

### 4. Identify Element by Index

If there are multiple elements present on page with same locator then we can use following Java code in our selenium WebDriver script to interact with element of particular index.

`driver.findElements(By.xpath("//*[@submit]")).get(0).click();`

### 5. Identify Element with reference of a closest stable element

We can use the DOM structure to find the closest stable element first and then this stable element can be used as a reference element to find the required element.

XPATH: `//span1/./following-sibling::div//button1`

DOM structure could be found using Firefox extension like Firebug and FirePath. But in complex and large applications this approach is difficult to use because of large DOM structure.

### 6. Identify Element by stable preceding Text

For web elements like text field and text areas we can identify them by using the stable text labels nearby. This approach might not be possible in all scenarios but it does resolve the dynamic element issues where possible. Example of this approach is shown below.

`//label1/following::input`

### How to handle alerts and confirmation boxes.

Apart from switching between windows and frames, you may have to handle various modal dialogs in a web application. For this, WebDriver provides an API to handle alert dialogs.

The API for that is as follows:

#### Alert alert()

The preceding method will switch to the currently active modal dialog on the web page. This returns an Alert instance where appropriate actions can be taken on that dialog. If there is no dialog currently present, and you invoke this API, it throws back a `NoAlertPresentException`. The Alert interface contains a number of APIs to execute different actions. The following list discusses them one after the other: Selenium Page 37

**void accept():** This is equivalent to the **OK** button action on the dialog. The corresponding **OK** button actions are invoked when the accept() action is taken on a dialog.

**void dismiss():** This is equivalent to clicking on the **CANCEL** action button.

**java.lang.String getText():** This will return the text that appears on the dialog. This can be used if you want to evaluate the text on the modal dialog.

**void sendKeys(java.lang.String keysToSend):** This will allow the developer to type in some text into the alert if the alert has some provision for it

### How to take a screenshot in selenium.

```
WebDriver driver = new FirefoxDriver();
driver.get("http://www.google.com/");
File scrFile = ((TakesScreenshot)driver).getScreenshotAs(OutputType.FILE);
// Now you can do whatever you need to do with it, for example copy somewhere
FileUtils.copyFile(scrFile, new File("c:\\tmp\\screenshot.png"));
```

### Login for Gmail scenario ?

```
package login;
import java.util.concurrent.TimeUnit;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class Login1 {
    public static void main(String[] args) {
        // Create a new instance of the Firefox driver
        WebDriver driver = new FirefoxDriver();
        // Wait For Page To Load
        // Put a Implicit wait, this means that any search for elements on the page
        //could take the time the implicit wait is set for before throwing exception
        driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);
        // Navigate to URL
        driver.get("https://mail.google.com/");
        // Maximize the window.
        driver.manage().window().maximize();
        // Enter UserName
        driver.findElement(By.id("Email")).sendKeys(" YOUR USER NAME");
        // Enter Password
        driver.findElement(By.id("Passwd")).sendKeys("YOUR PASSWORD");
        // Wait For Page To Load
        driver.manage().timeouts().implicitlyWait(60, TimeUnit.SECONDS);
        // Click on 'Sign In' button
        driver.findElement(By.id("signIn")).click(); Selenium Page 39
```



### Testing in multiple browsers using selenium and testng

In testing, it is always important to test application in different browsers. We can perform automation on multiple browsers using selenium and testng. If there are more number of tests that need to be executed parallelly on different browsers also, we can do this using testng.

We will look into the below examples in detail:

Below is the sample test which will only run one browser at a time.

```
package com.pack;  
import java.util.concurrent.TimeUnit;  
import org.openqa.selenium.By;  
import org.openqa.selenium.WebDriver;  
import org.openqa.selenium.WebDriverException;  
import org.openqa.selenium.chrome.ChromeDriver;
```

```

import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.ie.InternetExplorerDriver;
import org.testng.Assert;
import org.testng.annotations.AfterTest;
import org.testng.annotations.BeforeTest;
import org.testng.annotations.Parameters;
import org.testng.annotations.Test;
public class ParallelTest {
private WebDriver driver;
String baseURL = "http://www.google.com/";
@Parameters({ "browser" })
@BeforeTest
public void openBrowser(String browser) {
try {
if (browser.equalsIgnoreCase("Firefox")) {
driver = new FirefoxDriver();
} else if (browser.equalsIgnoreCase("chrome")) {
System.setProperty("webdriver.chrome.driver",
"D:/Dev/Jars/chromedriver.exe");
driver = new ChromeDriver();
} else if (browser.equalsIgnoreCase("IE")) {
System.setProperty("webdriver.ie.driver",
"D:/Dev/Jars/IEDriverServer.exe");
driver = new InternetExplorerDriver();
}
} catch (WebDriverException e) {
System.out.println(e.getMessage());
}
}
@Test
public void login_TestCase() {
driver.navigate().to(baseURL);
//do something Selenium Page 73

```

```
}  
@Test  
public void search_TestCase() {  
driver.navigate().to(baseUrl);  
//do something  
}  
@AfterTest  
public void closeBrowser() {  
driver.quit();  
}  
}
```

In the above code, we have OpenBrowser method with BeforeTest annotation along with parameter 'browser'. In the xml we will define three tests tags to run each test with different browser. We will compare the browser value with the parameter value and based on that we will create the driver instance. We have now defined three tests with three browsers (Firefox, Google Chrome and Internet Explorer)

*//Click on Compose Mail.*

*driver.findElement(By.xpath("//div[  
icon present in the top right navigational Bar*

*driver.findElement(By.xpath("//div[@class='gb\_1 gb\_3a gb\_nc gb\_e']/div/a")).click();*

*//Click on 'Logout' Button@class='z0']/div")).click();*

*// Click on the image*

*driver.findElement(By.xpath("//\*[@id='gb\_71']")).click();*

*//Close the browser.*

*driver.close();*

*}*

*}*

## **PROGRAMME FOR CODING**

- 01] Write down program of reverse string ?
- 02] Program of Palandrom number ?
- 03] Program To remove Duplicate from array ?
- 04] Write a program to count a occurrence of each character in a string using Hashmap ?
- 05] Program to find a unique number from array ?
- 06] program Armstrong number ?
- 07] Java program to check if a vowel is present in the string .
- 08] Java program to check if the given number is prime.
- 09] Fibonacci series using recursion .
- 10] Check if a list of integer contain only odd numbers
- 11] How to remove white spaces from string?
- 12] How a sort array in java?
- 13] Write a program to perform sum of all the elements in integer array?
- 14] Find second largest number in an array?
- 15] How to find if astring is present in TEXT File
- 16] How to merge two list in java?
- 17] How to sort hashmap by values?