AssignQues: WATS to login OrangeHRM Application
https://opensource-demo.orangehrmlive.com/web/index.php/auth/login

Note: Developers will develop multiple html lines for a single component. We can use any one of those html
    line to display component

```
<input class="Pke_EE" type="text" title="Search" name="q" autocomplete="off" placeholder="Search" value="">
```

**Limitations:
1: Sometimes given attributes may not be suitable to identify component
----
4: xpathByText: This xpath type is used to identify component using html text.
Syntax: //tagname[text()='text/value']
        OR
    //tagname[.='text/value'] (here in xpath . indicates text() function)

Note: We can use normal text or linktext to identify components
-->Here we can combine text and attribute.

Syntax: //tagname[text()='value' AND @PN='PV']
     //tagname[text()='value' OR @PN='PV']

Examp:
```
<html>
  <body>
   <span>Text Msg1</span><br>
   <a href="login.html">Link 1</a>
</body>
</html>
```

Script:
```
        WebDriver driver = new FirefoxDriver();
                driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/x_text.html");
                String str = driver.findElement(By.xpath("//span[text()='Text Msg1']")).getText();
                System.out.println(str);
                String str1 = driver.findElement(By.xpath("//a[text()='Link 1']")).getText();
                System.out.println(str1);
                driver.close();
```

OR
```
        WebDriver driver = new FirefoxDriver();
                driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/x_text.html");
                String str = driver.findElement(By.xpath("//span[.='Text Msg1']")).getText();
                System.out.println(str);
                String str1 = driver.findElement(By.xpath("//a[.='Link 1']")).getText();
                System.out.println(str1);
                driver.close();
```

AssignQues: WATS to display to display Login/signup text as an output in https://www.abhibus.com
----
5: xpathByContains: This xpath expression is used to identify component using text and atrribute
For Text: //tagname[contains(text(),'value')]
For Attribute: //tagname[contains(@propertyName,'PropertyValue')]

Ques: When we should use xpathBycontains
1: to handle dynamic element
2: for removing the space, special characters, numbers from the path

Ques: WATS to login facebook app
Script:
        WebDriver driver = new ChromeDriver();
                driver.get("https://www.facebook.com/");
                driver.findElement(By.xpath("//input[@id='email']")).sendKeys("admin");
                driver.findElement(By.xpath("//input[@id='pass']")).sendKeys("abc");
                driver.findElement(By.xpath("//button[contains(@id,'u_0_5')]")).click();

6: xpathByIndex: This xpath type is used to identify component using index from matching elements.
Syntax: (xpath expression)[index]

Ques: When we should use xpathByIndex
1: if independent element is duplicate
2: Even after using all types of xpath expression. if we get matchings

Examp: Flipkart App

1: To select first image
   (//img[@class='_2puWtW _3a3qyb'])[1]

2: To select last image
   (//img[@class='_2puWtW _3a3qyb'])[9] OR (//img[@class='_2puWtW _3a3qyb'])[last()]

3: To select second last image
   (//img[@class='_2puWtW _3a3qyb'])[last()-1]

4: To select first 3 image
   (//img[@class='_2puWtW _3a3qyb'])[position()<=3]

5: To select last 3 images
   (//img[@class='_2puWtW _3a3qyb'])[position()>=last()-2]

6: To select odd position images
   (//img[@class='_2puWtW _3a3qyb'])[position()mod(2)=1]

7: To select even position images
   (//img[@class='_2puWtW _3a3qyb'])[position()mod(2)=0]

***TRAVERSING**
--> Switching Betyween tags.

1: Forward Traversing: Navigating from parent to child tag(immediate or any child)
Note: /-parent to immediate child
    //- parent to any child

1.1: To perform forward traversing we can use following approaches
A: Absolute xpath
B: Relative Xpath
C: xpathByAttribute
D: xpathByText
E: xpathByContains

Examp: HTML Webpage

```
<html>
<body>
<div>
   UN<input type="text">User<br>
   Pwd<input type="password">
</div>
</body>
</html>
```

HTML Tree Diagram

```
html
   body
      div[1]
         input[1]    UN
         input[2]    Pwd
```

-->To idenitfy Username

A: Absolute xpath: /html/body/div/input[1]
B: Relative Xpath: //input[1] or //div/input[1]
C: xpathByAttribute: //input[@type='text']
D: xpathByText: //input[text()='User']
E: xpathByContains: //input[contains(@type,'text')]

2: Backward Traversing:
-->Navigating from child to parent tag
-->To implement backward traversing, forward traversing is mandatory ie: child tag to immediate parent tag
-->To achiebe backward traversing, we use "/.." OR /parent::tagname
-->To navigate from child to any parent, we use keyword "ancestor". Example: /ancestor::tagname

-->To navigate from UN to HTML

1: //input[@type='text']/../../..
explain: //input[@type='text']/..(div)/..(body)/..(html)

2: //input[@type='text']/parent::div/parent::body/parent::html

3: //input[@type='text']/ancestor::html

Ques: WATS to print cost of selenium Book as an output
Script:

```
WebDriver driver = new FirefoxDriver();
        driver.get("file:///C:/Users/Alpha/Desktop/HTML/E32/table.html");
        String str = driver.findElement(By.xpath("//td[text()='6000']")).getText();
        System.out.println(str);
        driver.close();
```

Output: 6000

1: Above test script execute if cost remain same
2: Few Component html code updates frequently
3: Then we cannot use normal xpath expression to identify component
4: To handle dynamic element we should use Independent and Dependent Concept which strictly follows Traversing.

7: Handling of Dynamic Elements(Xpath Using Independent and Dependent):

-->Procedure to write xpath expression using Independent and Depednet Concept:

1: Identify Independent and Dependent Element
2: Inspect independent element html code and write xpath expression
3: Identify common parent and write xpath expression to navigate from Independent element to common parent
4: Identify Dependent element and write xpath expression to navigate from common parent to dependent element.

1: Identify Independent and Dependent Element
   Independent: Selenium
   Dependent: Cost

2: Inspect independent element html code and write xpath expression
   //td[text()='Selenium']

3: Identify common parent and write xpath expression to navigate from Independent element to common parent
   //td[text()='Selenium']/..

4: Identify Dependent element and write xpath expression to navigate from common parent to dependent element.
   //td[text()='Selenium']/../td[3]

Ques: WATS to display redmi 9 activ coral green 64 gb Mobile Ratings as an output in flipkart App
Script:

1: Identify Independent and Dependent Element
   Independent: redmi 9 activ coral green 64 gb
   Dependent: Ratings

2: Inspect independent element html code and write xpath expression
  //div[@class='KzDlHZ']

3: Identify common parent and write xpath expression to navigate from Independent element to common parent
  //div[@class='KzDlHZ']/..

4: Identify Dependent element and write xpath expression to navigate from common parent to dependent element.
  //div[@class='KzDlHZ']/..//span[contains(text(),'Ratings')]

Script:
        WebDriver driver = new FirefoxDriver();
                driver.manage().window().maximize();
                driver.get("https://www.flipkart.com/");
                driver.findElement(By.xpath("//input[@class='Pke_EE']")).sendKeys("redmi 9 active
coral green 64 gb");
                driver.findElement(By.xpath("//button[@class='_2iLD__']")).click();
                String str =
driver.findElement(By.xpath("//div[@class='KzDlHZ']/..//span[contains(text(),'Ratings')]")).getText();
    System.out.println(str);
     driver.close();

AssignQues: WATS to display price of redmi 9 activ coral green 64 gb as an output in flipkart App
Script:
(//div[@class='KzDlHZ']/../..//div[@class='Nx9bqj _4b5DiR'])[1]

AssignQues: WATS to display redmi 9 activ coral green 64 gb Mobile Rating and Reviews as an output in flipkart App