MAVEN
-->It is a Build Management Tool OR Dependency Tool
-->Dependency: Dependencies is the technology that helps us to handle jar in much more effective way
OR
Dependencies is nothing but a piece of code which helps us to download and store jar

Step1: File--->New--->Project
Step2: Select Maven folder-->Maven Project-->Click on next button
Step3: Select First Checkbox--->CLick on Next
Step4: GroupId: Name of the organization
ArtifactId: Name of the project--->Click on Finish

***Adding dependencies:
Step1: Navigate Google--->Search for Maven Repository
Step2: Click on First Link
Step3: Navigate to https://mvnrepository.com/------->Search for selenium java
Step4: https://mvnrepository.com/search?q=Selenium+java---->Select first link
Step5: Navigate to https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-jav
copy the version as per requirement and paste in Pom.xml in eclipse
save the pom.xml

Ques: Write a test script to open browser
--> To open Browser we need to create Browser Class Instance

```
ChromeDriver driver = new ChromeDriver();
FirefoxDriver driver = new FirefoxDriver();
EdgeDriver driver = new EdgeDriver();
```

**close(): It is used to close current/parent window

Examp:
```
	//Launch the Browser
		FirefoxDriver driver = new FirefoxDriver();
		//Close the browser
		driver.close();
```

**quit(): It is used to close parent + child window

Ques: Diff. between close() & quit()

Ques: Write a test script to perform foll. actions:
1: Open Browser
2: Open Facebook App
3: Close Browser

-->get("String URL"): It is used to open application using URL.

Script:
```
	//Launch the Browser
		ChromeDriver driver = new ChromeDriver();
```

```
		//Navigate to application
		driver.get("https://www.facebook.com/");
		//Close the browser
		driver.close();
```

Ques: Write a test script to perform following actions:
1: Open Browser
2: Open Facebook App
3: Open New Window
4: Open Google App in New Window
5: Close the browser

Script:
```
	FirefoxDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		FirefoxDriver driver1 = new FirefoxDriver();
		driver1.get("https://www.google.com/");
		driver1.close();
		driver.close();
```

AssignQues: Write a test script to perform foll actions:
1: Open Chrome Browser
2: Open Facebook App
3: Open Google App in same window
4: close the browser

Script:
```
	ChromeDriver driver = new ChromeDriver();
		driver.get("https://www.facebook.com/");
		driver.get("https://www.google.com/");
		driver.close();
```

**getTitle(): This method is used to display title of the webpage
  Return type: String

**getCurrentUrl(): This method is used to display URL of the webpage
 Return type: String

Ques: Write a test script to display title and URL of the webpage
Script:
```
	FirefoxDriver driver = new FirefoxDriver();
		driver.get("https://www.google.com/");
		//title
		String title = driver.getTitle();
		System.out.println(title);
		//Url
		String url = driver.getCurrentUrl();
		System.out.println(url);
		driver.close();
```

AssignQues: Write a test script to display title and url of Amazon.in app as output

---
***Selenium Architecture/Coding-Level Architecture
1: SearchContext is an supermost interface which contains abstract methods and inherited to WebDriver.
2: WebDriver is an interface which contains abstract methods of searchContext and its own,which are
  inherited to RemoteWebDriver.
3: RemoteWebDriver is the class which overrides all abstract methods of searchContext and WebDriver.
4: All browser class like ChromeDriver,FirefoxDriver,EdgeDriver are extends to RemoteWebDriver.
5: All methods implementation will be changing according to browser class.
6: To do cross browser testing writting test script with reference to one browser(ChromeBrowser)
  and executing same script in other browser(Firefox,Edge) which we can achieve by using polymorphism.
7: That is Storing browser class object in WebDriver Interface(Upcasting)

```
WebDriver driver = new FirefoxDriver();
WebDriver driver = new ChromeDriver();
WebDriver driver = new EdgeDriver();
```

8: Takesscreenshot():
-->This method is used to take screenshot of the webpage
-->It contains one abstract method:
  *getScreenshotAs()

9: JavascriptExecutor:
-->This method is used to write test script in browser understandable language(javascript)
-->It contains two abstract methods:
  1: executescript()
  2: executeAsyn()

Ques: What is the difference between following commands:
1: FirefoxDriver driver = new FirefoxDriver();
2: WebDriver driver = new FirefoxDriver();

-->By using command 1, we can run scripts only in Firefox Browser
-->By using command 2, We can run scripts in Multiple Browser by changing instance
---
Ques: Why we do upcasting upto WebDriver but not to searchContext?
--> If we do upcasting upto searchContext we can access only searchContext method but all browser handling methods are present in WebDriver
---
Ques: What are the methods present in SearchContext?
1: findElement()
2: findElements()

**findElement():
-->It is used to identify single element OR It helps us to locate one element at a time
-->Return type: WebElement
-->If there are multiple matching element then it returns first matching element
-->If the element is not present then it will throws exception "NoSuchElementException"

**findElements():
-->Its is used to identify Multiple elements OR It helps us to locate multiple elements
-->Return type: List<WebElement>
-->If there are multiple matching elements it retunrs all of them
-->If elements are not present or difficult to find it returns an empty list or a list with size 0.

Ques: WATS to open facebook application in any browser
Script:

```
	package basic;

import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.edge.EdgeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;

public class Browser_M
{
	WebDriver driver;
	public void browser(String browsername)
	{
		if(browsername.equals("Firefox"))
		{
			driver = new FirefoxDriver();
		}
		else if(browsername.equals("Chrome"))
		{
			driver = new ChromeDriver();
		}
		else
		{
			driver = new EdgeDriver();
		}
		driver.get("https://www.facebook.com/");
		driver.close();
	}

	public static void main(String[] args)
	{
		Browser_M rv = new Browser_M();
		rv.browser("Firefox");
		rv.browser("Chrome");
		rv.browser("Edge");

	}

}
```

Ques: WATS to verify Google webpage is displayed or not
Script:

-->To do verificationg using String class
1: equals(): This method is used to verify string but case sensitive and accepts complete string.
2: contains(): Case sensitive but accepts only few characters in sequence
3: equalsignorecase(): Not Case Sensitive but it accepts complete string

```
	WebDriver driver = new FirefoxDriver();
		driver.get("https://www.google.com/");
		String str = driver.getTitle();
		if(str.equals("Google"))
		{
			System.out.println("Google Webpage displayed");
		}
		else
		{
			System.out.println("Google Webpage not displayed");
		}
		driver.close();
```

AssignQues: WATS to verify facebook webpage displayed or not