**What is Parallel Testing?**

When we execute multiple test cases at the same time, instead of one after the other, we call it parallel testing. This approach helps speed up the testing process and ensures that the application works across different environments or browsers simultaneously.

**We can execute -**

* All the methods with @Test annotation will execute in parallel.
* All the test cases inside a Java class will run parallel methods.
* All the test cases inside the <test> tag of the TestNG XML file will run in parallel.

***1*.Code example: <!-- To execute multiple methods in parallel -->**

package tut8\_parallelTesting;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.testng.Assert;

import org.testng.annotations.Test;

public class ParallelTestDemo1

{

//We will execute methods parallel

WebDriver driver;

@Test

public void verifyTitle() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

//title=Swag Labs

Assert.assertEquals(driver.getTitle(), "Swag Labs");

}

@Test

public void verifyLogo() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

WebElement logo = driver.findElement(By.xpath("//div[@class='login\_logo']"));

Assert.assertTrue(logo.isDisplayed());

}

}

*XML File:*

<suite name="Suite" parallel="methods" thread-count="2">

<test name="Test">

<classes>

<class name="tut8\_parallelTesting.ParallelTestDemo1"/>

</classes>

</test>

</suite>

***2*.Code example: <!-- To execute multiple classes in parallel →**

*First class file:*

package tut8\_parallelTesting;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.testng.Assert;

import org.testng.annotations.Test;

public class ParallelTestDemo1

{

//We will execute methods parallel

WebDriver driver;

@Test

public void verifyTitle() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

//title=Swag Labs

Assert.assertEquals(driver.getTitle(), "Swag Labs");

}

@Test

public void verifyLogo() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

WebElement logo = driver.findElement(By.xpath("//div[@class='login\_logo']"));

Assert.assertTrue(logo.isDisplayed());

}

}

*Second class File:*

package tut8\_parallelTesting;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.testng.Assert;

import org.testng.annotations.Test;

public class ParallelTestDemo2

{

//id=user-name

//id="password"

//id="login-button"

WebDriver driver;

@Test

public void verifyTitle() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

WebElement userNameField = driver.findElement(By.id("user-name"));

userNameField.sendKeys("standard\_user");

WebElement passwordField=driver.findElement(By.id("password"));

passwordField.sendKeys("secret\_sauce");

WebElement loginButton=driver.findElement(By.id("login-button"));

loginButton.click();

Assert.assertEquals(driver.getTitle(), "Swag Labs");

Thread.sleep(2000);

driver.quit();

}

}

*XML File:*

*<suite name="Suite" parallel="classes" thread-count="2">*

*<test name="Test">*

*<classes>*

*<class name="tut8\_parallelTesting.ParallelTestDemo1" />*

*<class name="tut8\_parallelTesting.ParallelTestDemo2" />*

*</classes>*

*</test>*

*</suite>*

**3.Code example<!-- To execute multiple test suites in parallel →**

*First class file:*

package tut8\_parallelTesting;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.testng.Assert;

import org.testng.annotations.Test;

public class ParallelTestDemo1

{

//We will execute methods parallel

WebDriver driver;

@Test

public void verifyTitle() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

//title=Swag Labs

Assert.assertEquals(driver.getTitle(), "Swag Labs");

}

@Test

public void verifyLogo() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

WebElement logo = driver.findElement(By.xpath("//div[@class='login\_logo']"));

Assert.assertTrue(logo.isDisplayed());

}

}

*Second class File:*

package tut8\_parallelTesting;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.testng.Assert;

import org.testng.annotations.Test;

public class ParallelTestDemo2

{

//id=user-name

//id="password"

//id="login-button"

WebDriver driver;

@Test

public void verifyTitle() throws InterruptedException

{

driver=new ChromeDriver();

driver.manage().window().maximize();

driver.get("https://www.saucedemo.com");

WebElement userNameField = driver.findElement(By.id("user-name"));

userNameField.sendKeys("standard\_user");

WebElement passwordField=driver.findElement(By.id("password"));

passwordField.sendKeys("secret\_sauce");

WebElement loginButton=driver.findElement(By.id("login-button"));

loginButton.click();

Assert.assertEquals(driver.getTitle(), "Swag Labs");

Thread.sleep(2000);

driver.quit();

}

}

*XML File*

*<suite name="Suite" parallel="tests" thread-count="2">*

*<!-- First test suite -->*

*<test name="Test1">*

*<classes>*

*<class name="tut8\_parallelTesting.ParallelTestDemo1" />*

*</classes>*

*</test>*

*<!-- Second test suite -->*

*<test name="Test2">*

*<classes>*

*<class name="tut8\_parallelTesting.ParallelTestDemo2" />*

*</classes>*

*</test>*

*</suite>*