

CUCUMBER:

- It's a Behavior Driven Development test tool (BDD).
- Cucumber is a software tool used by computer programmers used for testing the developed software's.
- It runs automated acceptance test written in BDD.

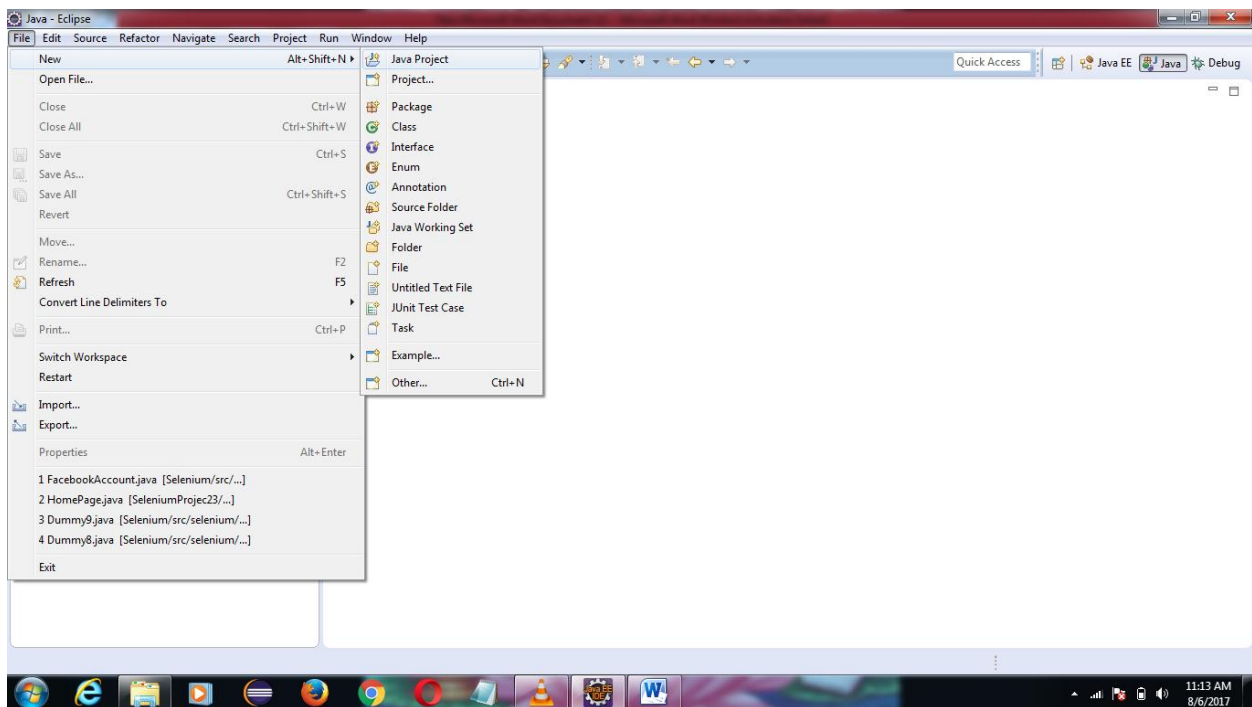
Things needed for Cucumber:

1. Feature file → It consists of scenarios.
2. Step definition file → It consists of coding part (java +selenium).
3. Test runner class → It consists of Feature files.

Simple program using cucumber:

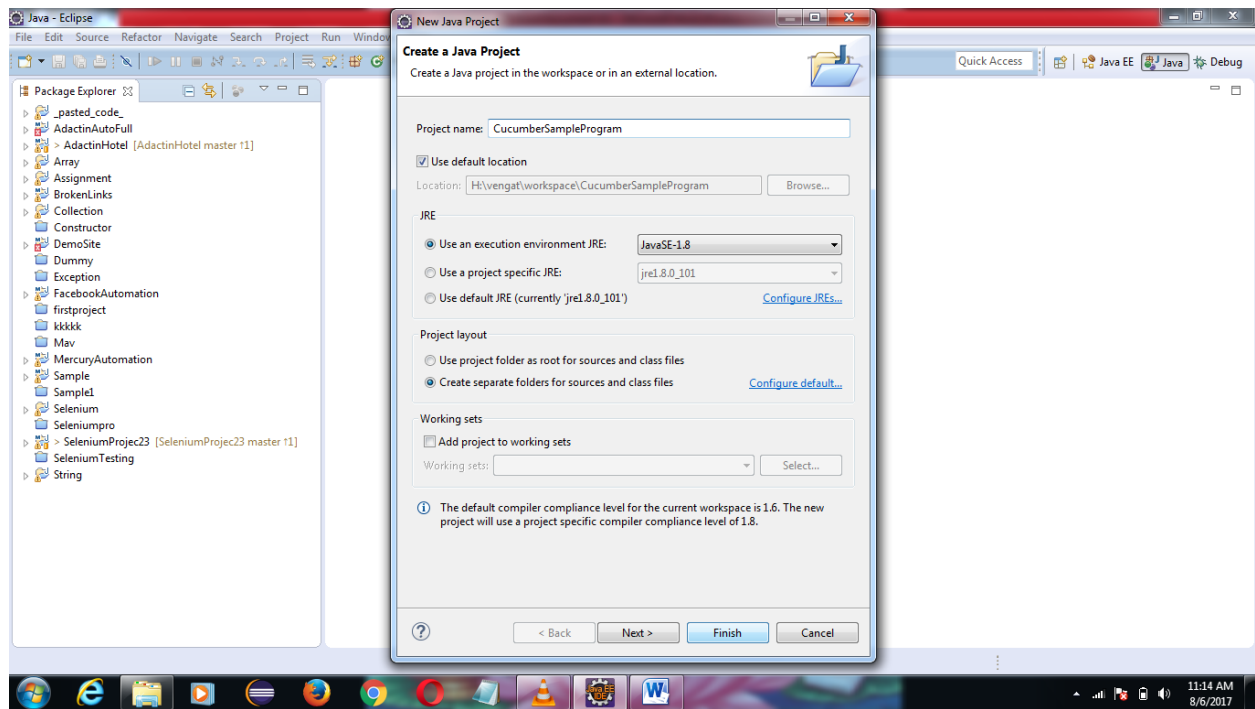
Step 1:

Create new java project.



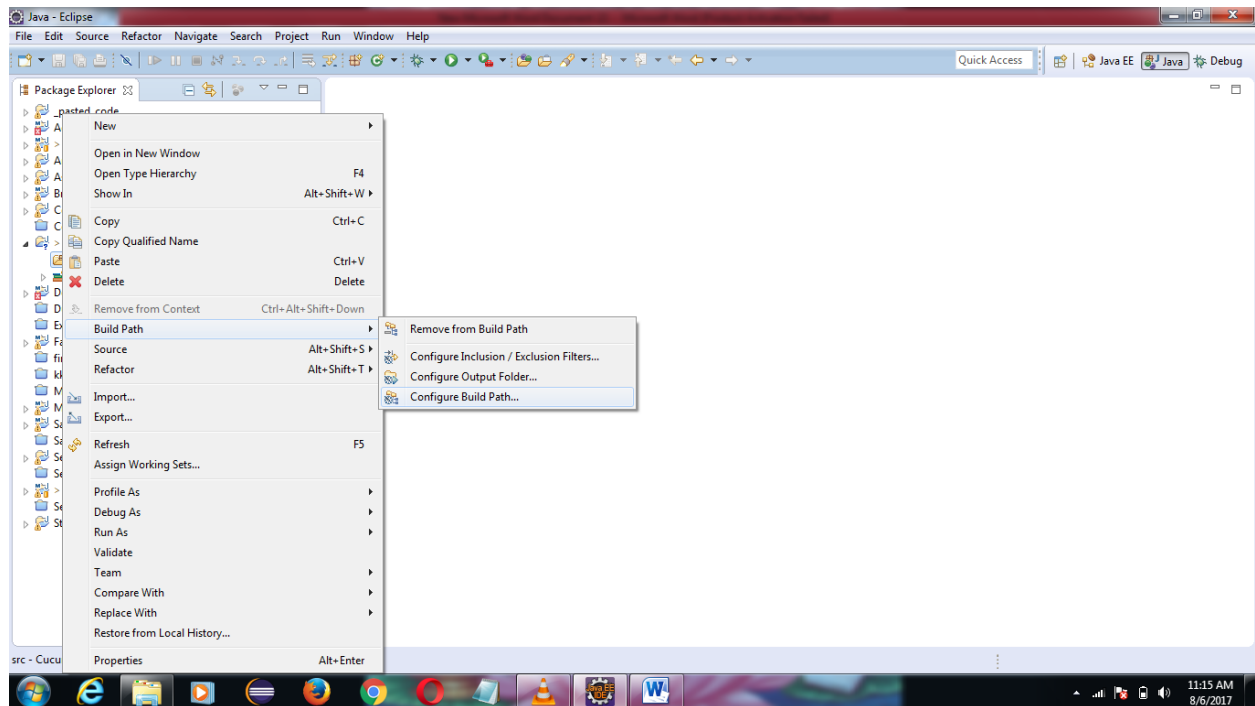
Step 2:

Enter the project name and then click finish.



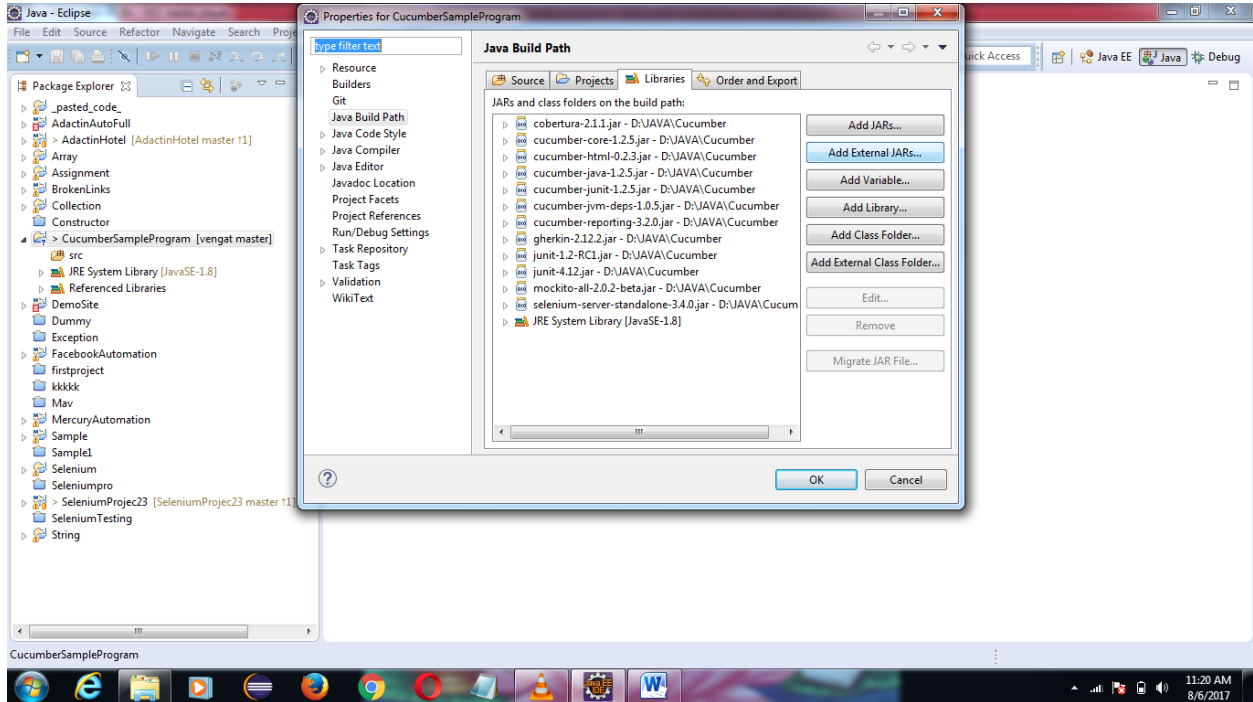
Step 3:

We need to configure jar files.

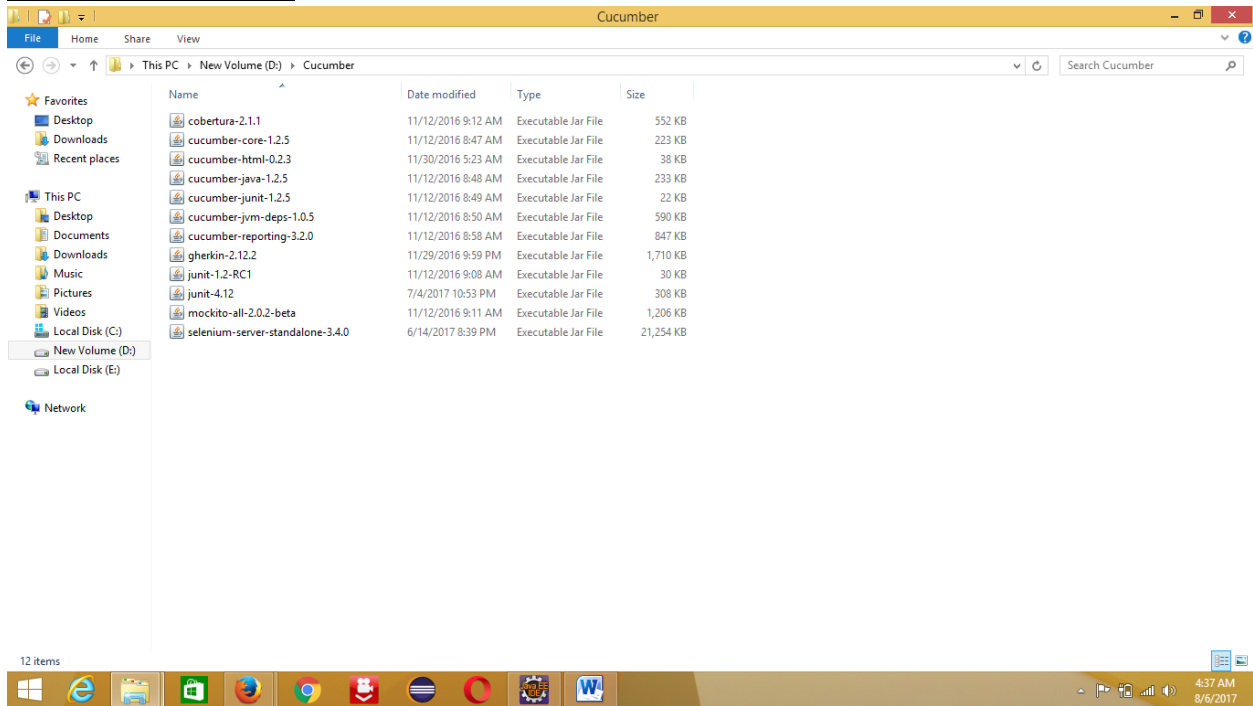


Step 4:

We need to configure our jar files by click Add External jars and then choose our location of the jar, then select the jars we want to add and click ok.

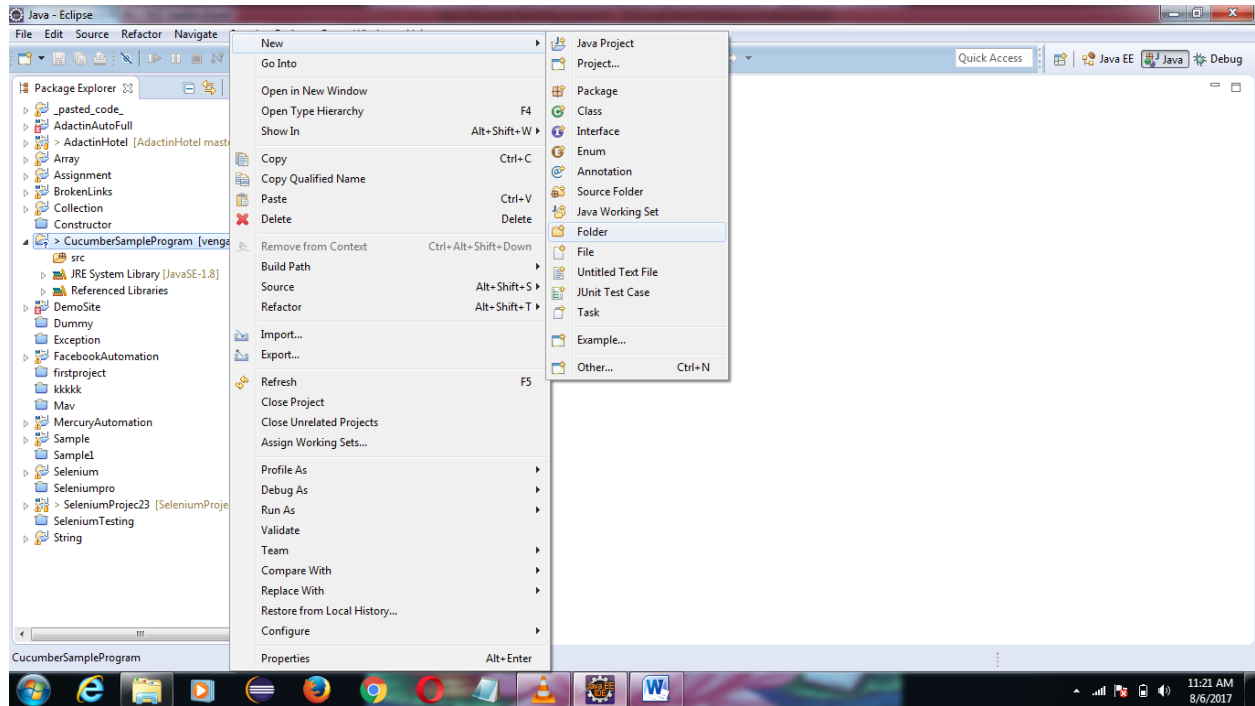


Download these jars:

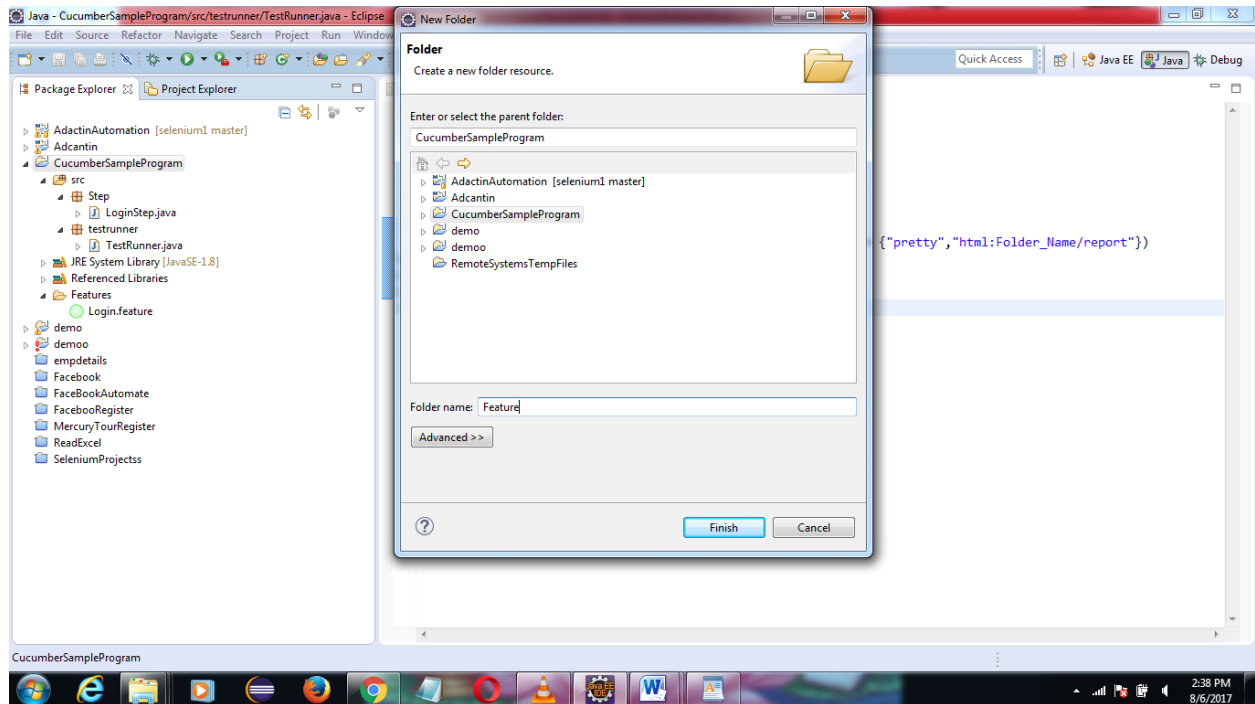


Step 5:

Create a new folder

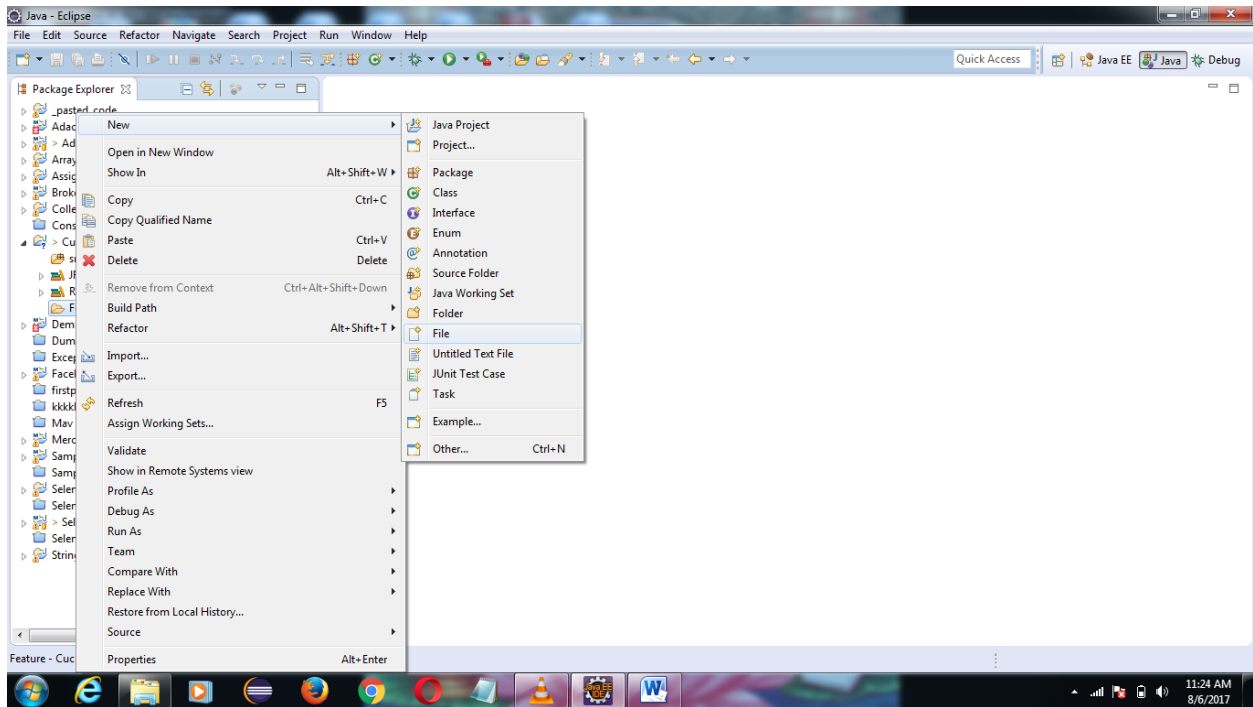


And enter the name as Feature and then click finish.

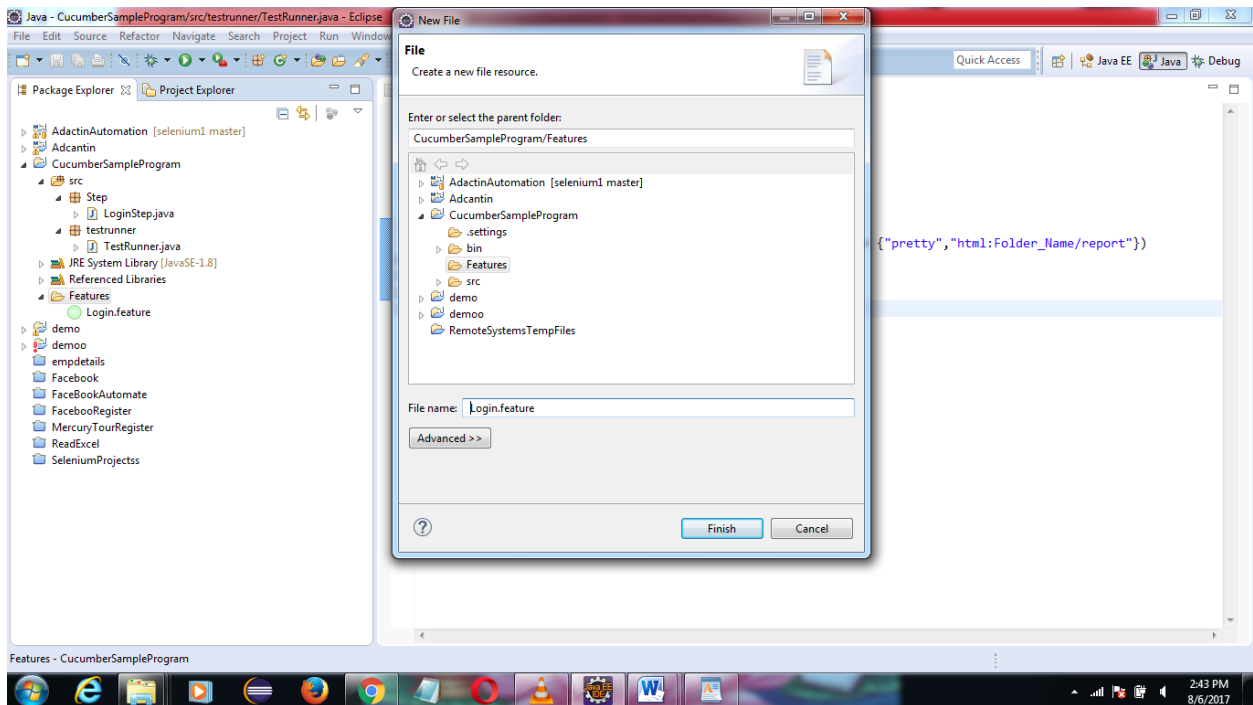


Step 6:

On the Feature folder we need to add File.

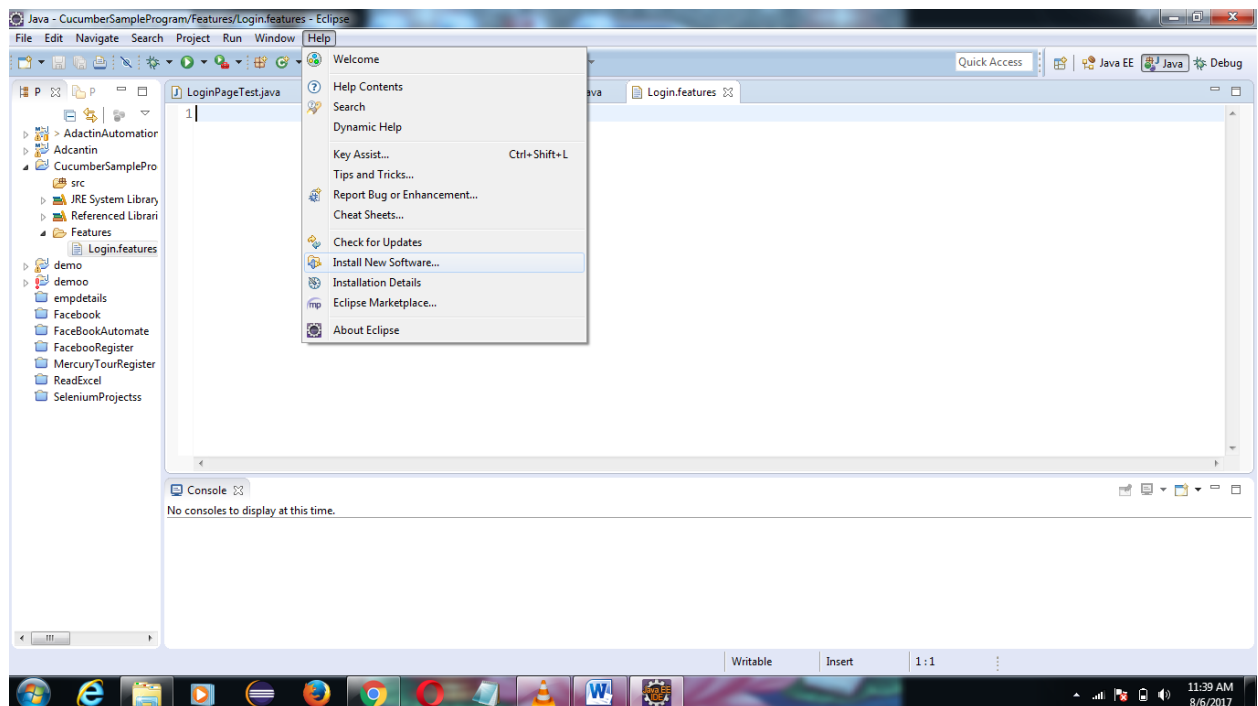
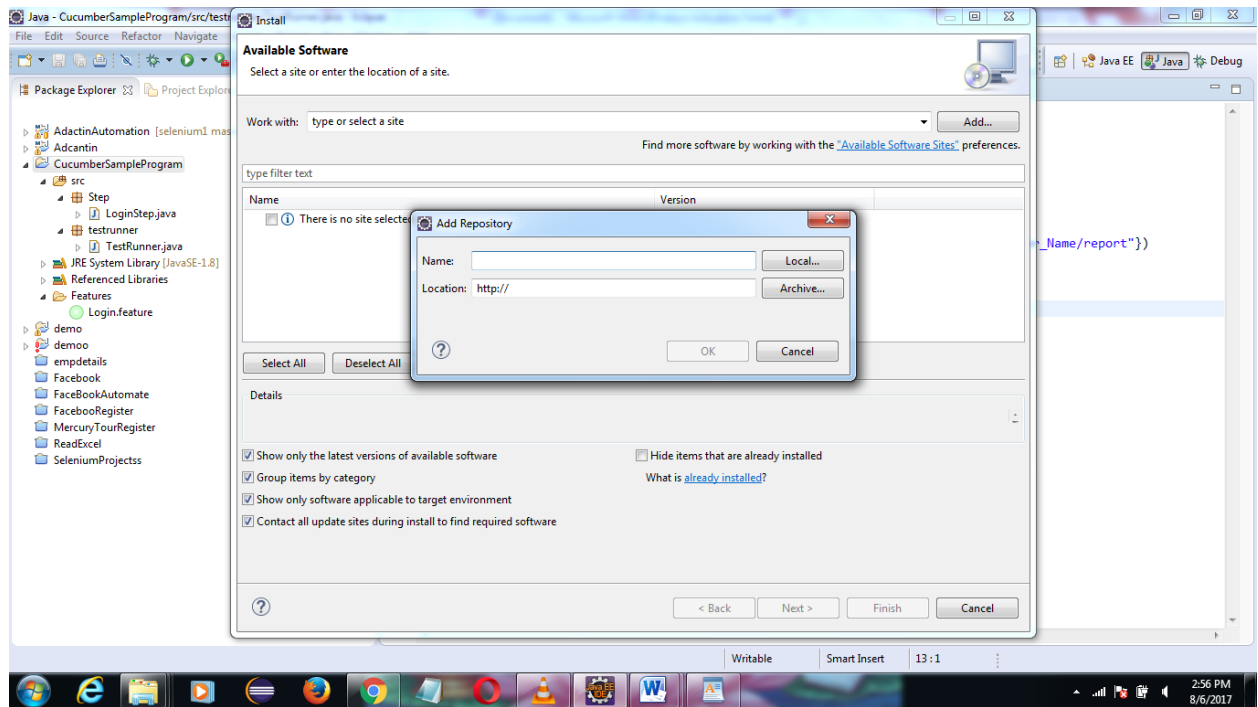


And then enter the file name it must end with ".feature" and Click Finish.



Step 7: Configure in two ways:

1. Now , we need configure Gherkin plugin in eclipse through, Go to Market place → Install New Software

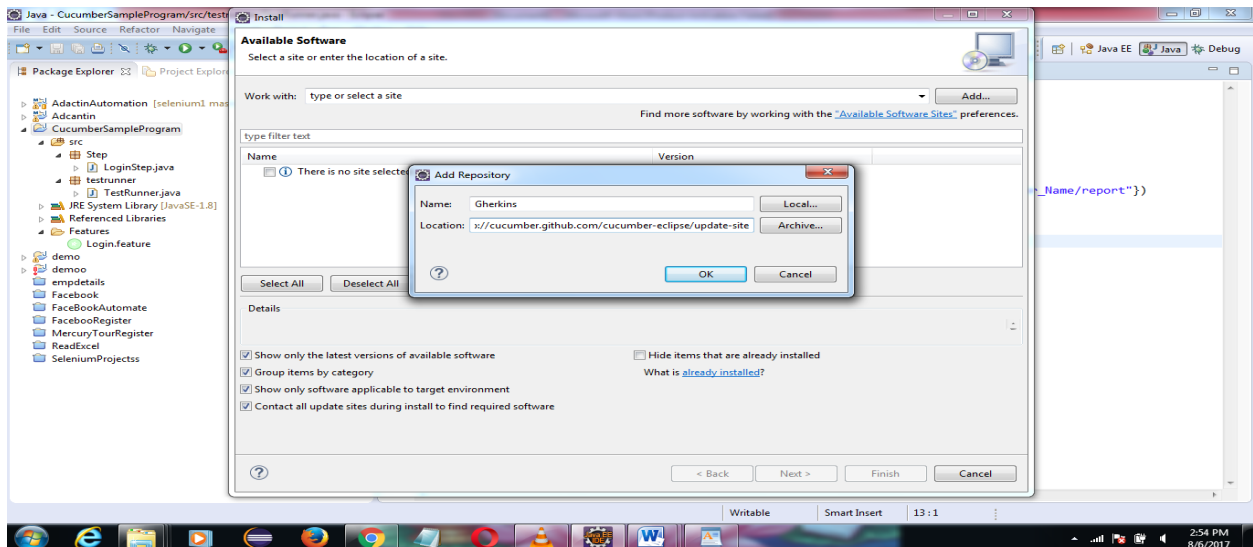


On that window click → add .

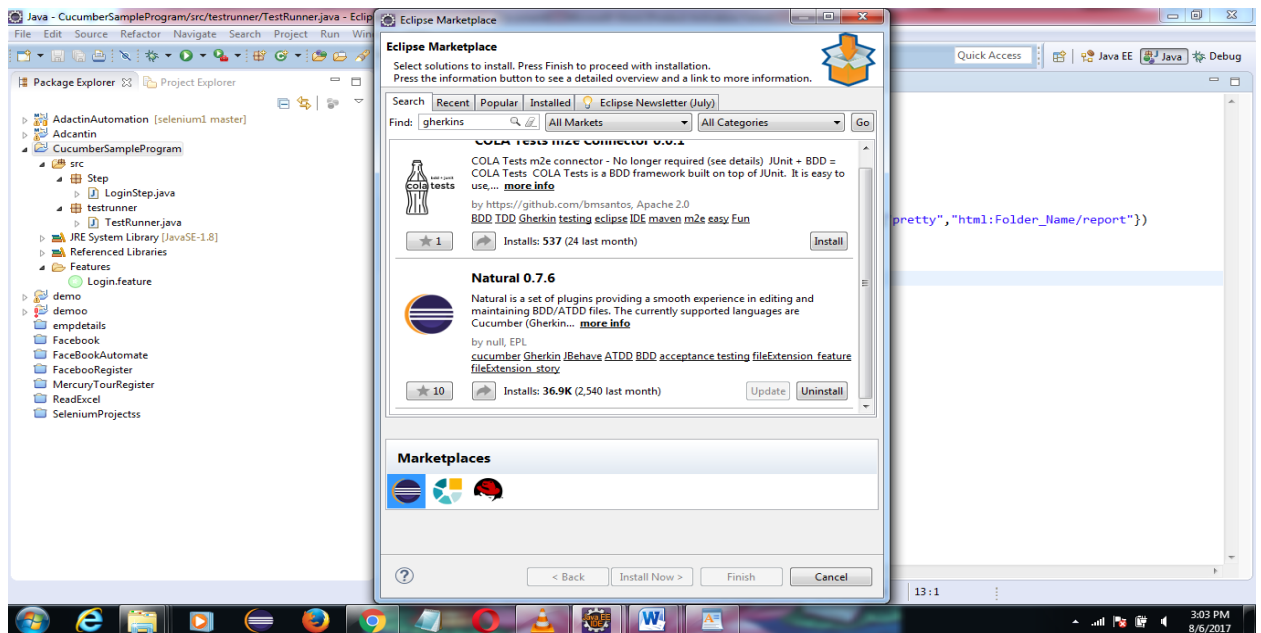
In that name: fill any name.

Address: use this address ” <http://cucumber.github.com/cucumber-eclipse/update-site>”

And click ok → Accept user agreement → Download plugins



2. In help → Eclipse market place → search Gherkins →install **Natural 0.7.6**.



By this way you download Gherkins plugin for cucumber.

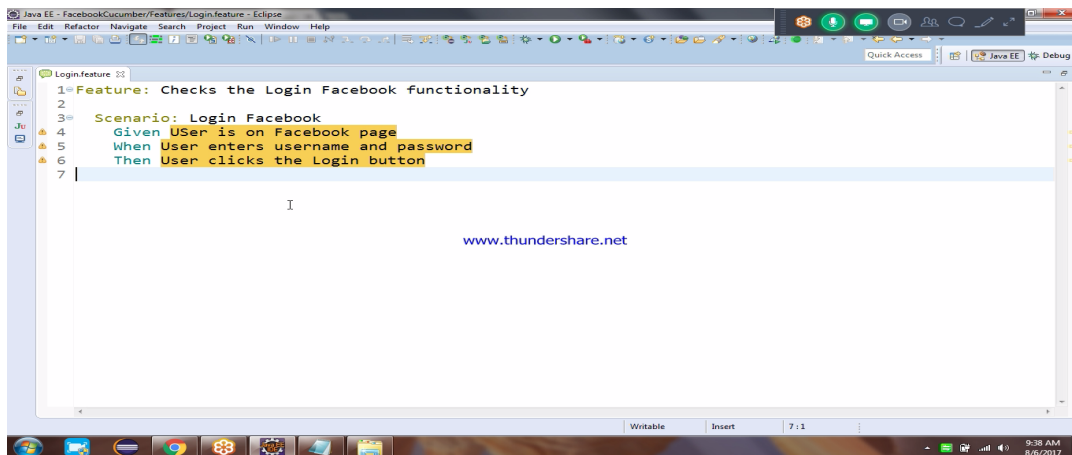
Step 8:

In our project ,we need to create three packages under src.

1. Testrunner → In this we add our test cases .
2. Steps → in this we create our methods .
3. pages → Here we add our Locators of web element and provide getters and setters.

Add future class on the file created on the Feature folder.

Create feature file like below



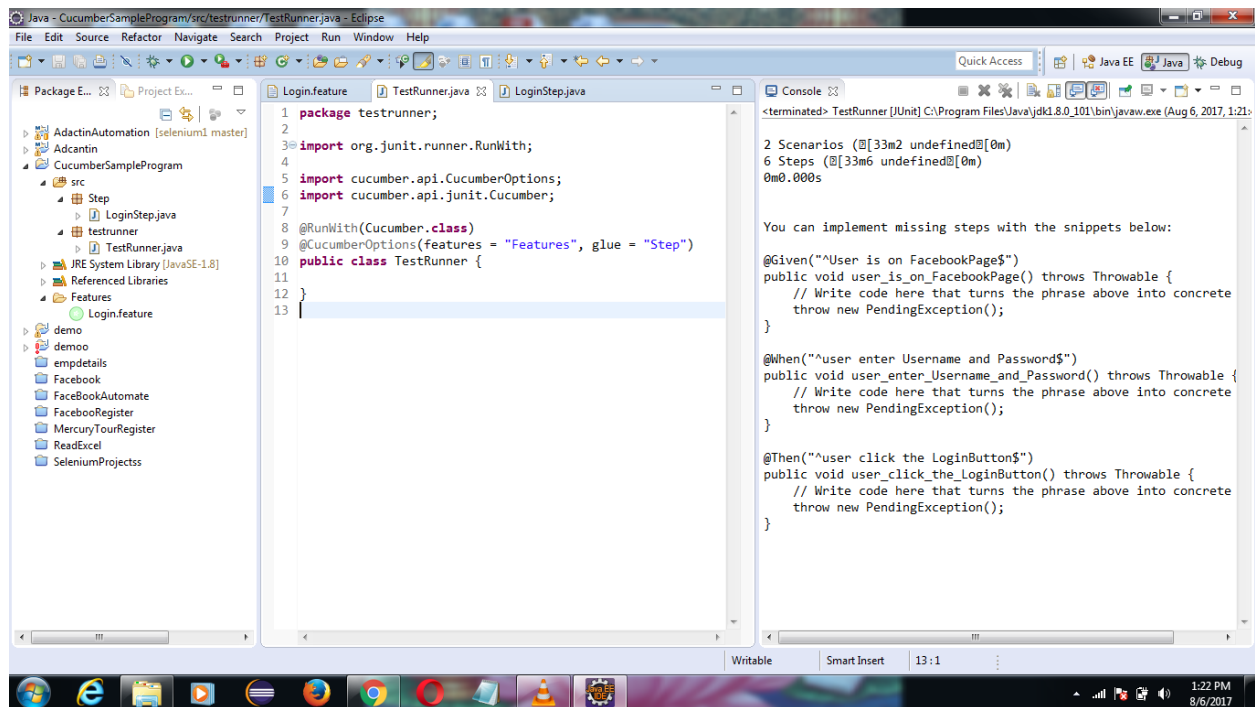
Package: testrunner

features:It contains Feature files.

Glue: It consists of steps of test runner class which obtained on console.

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Features", glue = "Step")
public class TestRunner {

}
```

After, we run the test case, we get console output use that steps for step package.

We create LoginSteps under the steps package and use that console output codes

Program of LoginStep class:

```
public class LoginStep {
```

```
@Given(\"^User is on FacebookPage$\")
public void user_is_on_FacebookPage() throws Throwable {
    System.out.println(\"User is on FacebookPage\");
}
```

```
@When(\"^user enter Username and Password$\")
public void user_enter_Username_and_Password() {
    System.out.println(\"user enter Username and Password\");
}
```

```
@Then(\"^user click the LoginButton$\")
public void user_click_the_LoginButton() {
    System.out.println(\"user click the LoginButton\");
}
```

```
@When(\"^user enter Details$\")
public void user_enter_Details() {
```

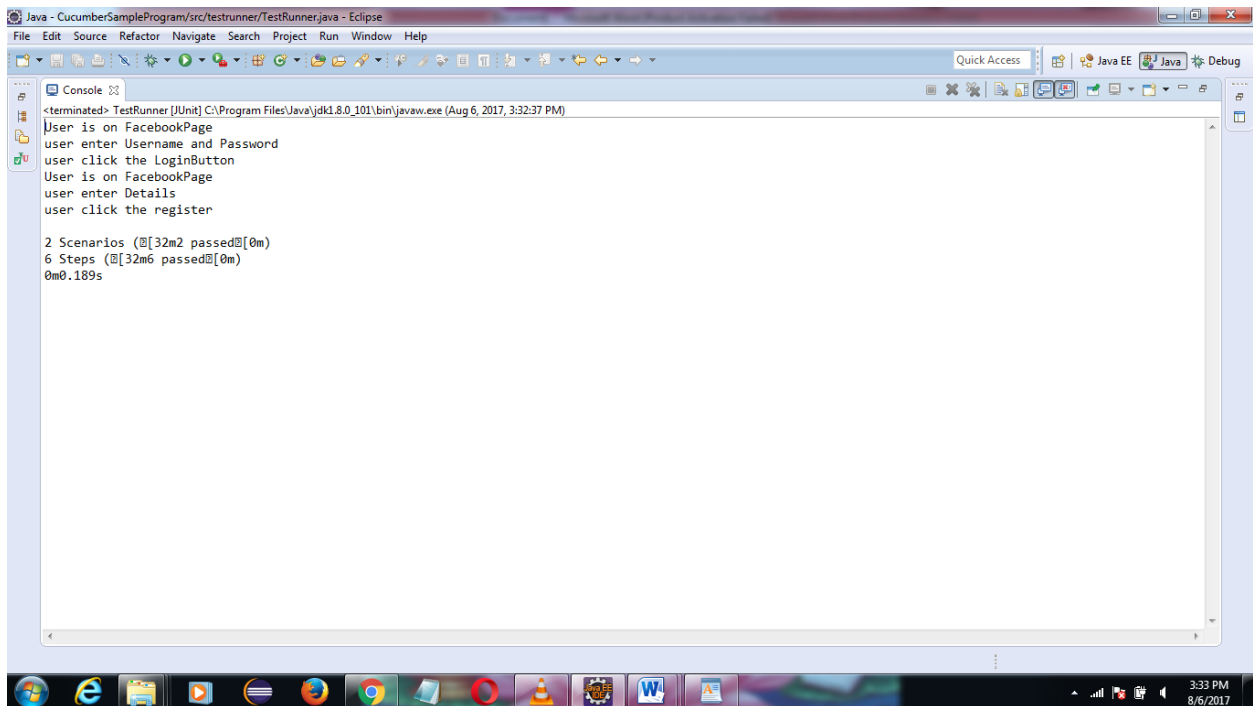
```

        System.out.println("user enter Details");
    }

    @Then("^user click the register$")
    public void user_click_the_register() {
        System.out.println("user click the register");
    }
}

```

Output:

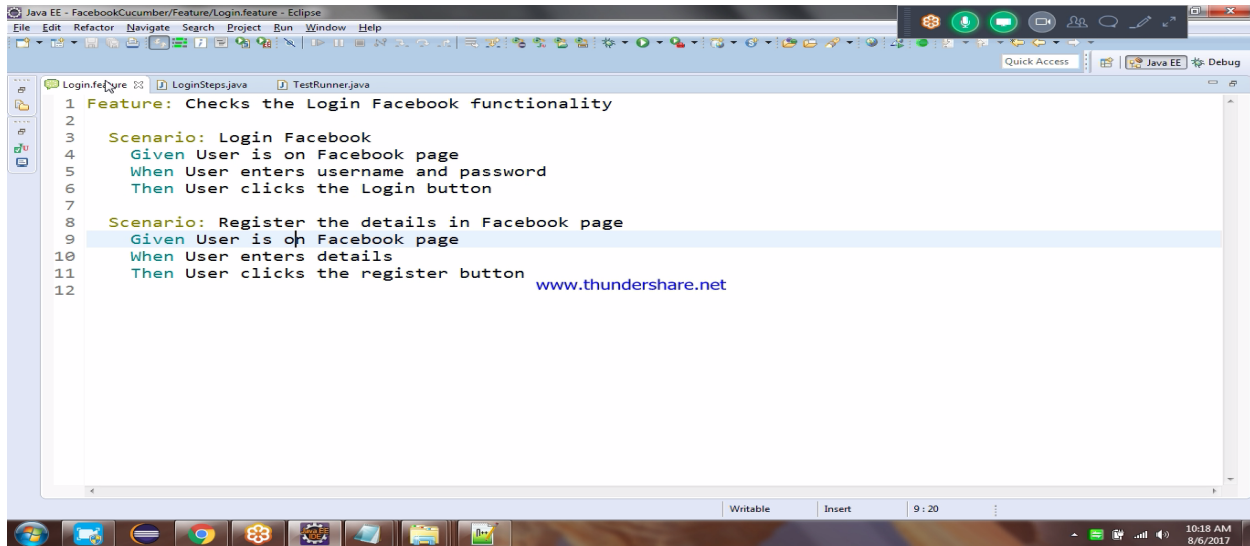


Formats of Report Using cucumber:

Cucumber supports various report formats. They are

1. HTML REPORT FORMAT:

Feature file:



Package: Test runner

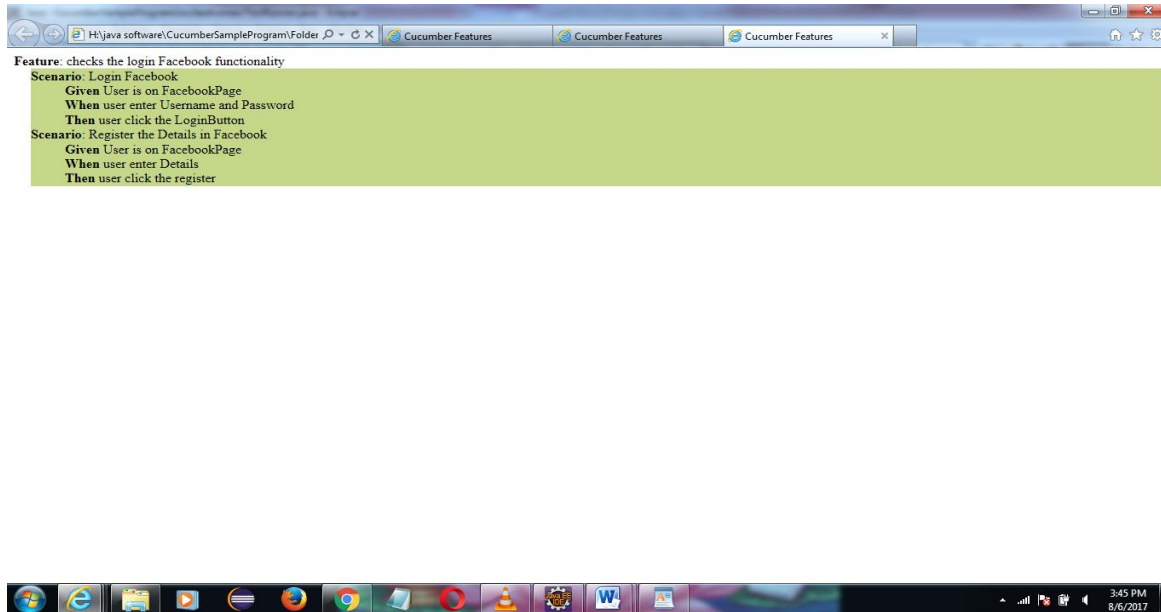
@RunWith(Cucumber.class)

@CucumberOptions(features = "Features", glue = "Step", plugin= {"pretty", "html:Folder
name/report/cucumber"})

public class TestRunner {

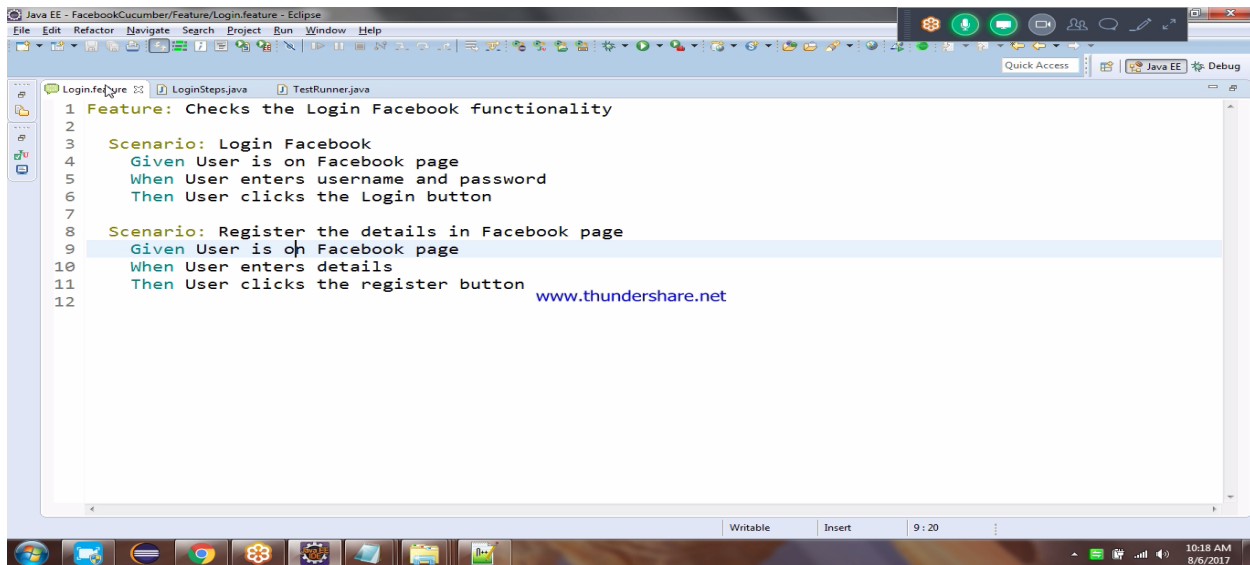
}

Output:



2. JUNIT REPORT FORMAT:

Feature file:



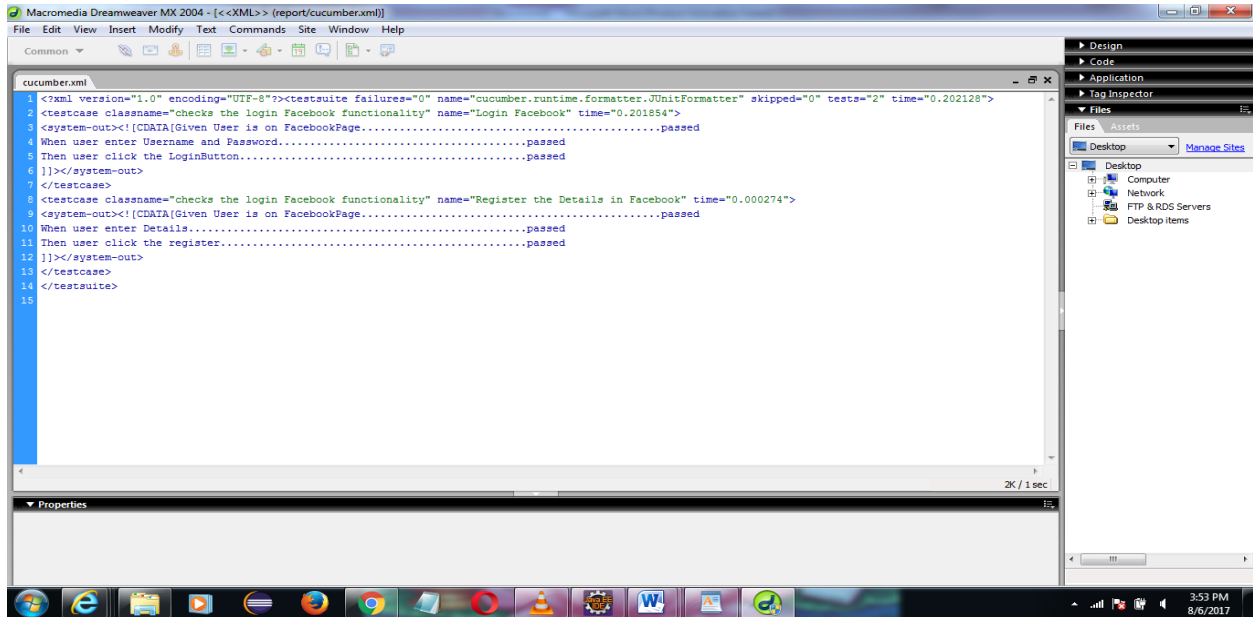
Package: Test runner

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Features", glue = "Step", plugin= {"pretty", "junit:Folder
name/report/cucumber.xml"})
```

```
public class TestRunner {

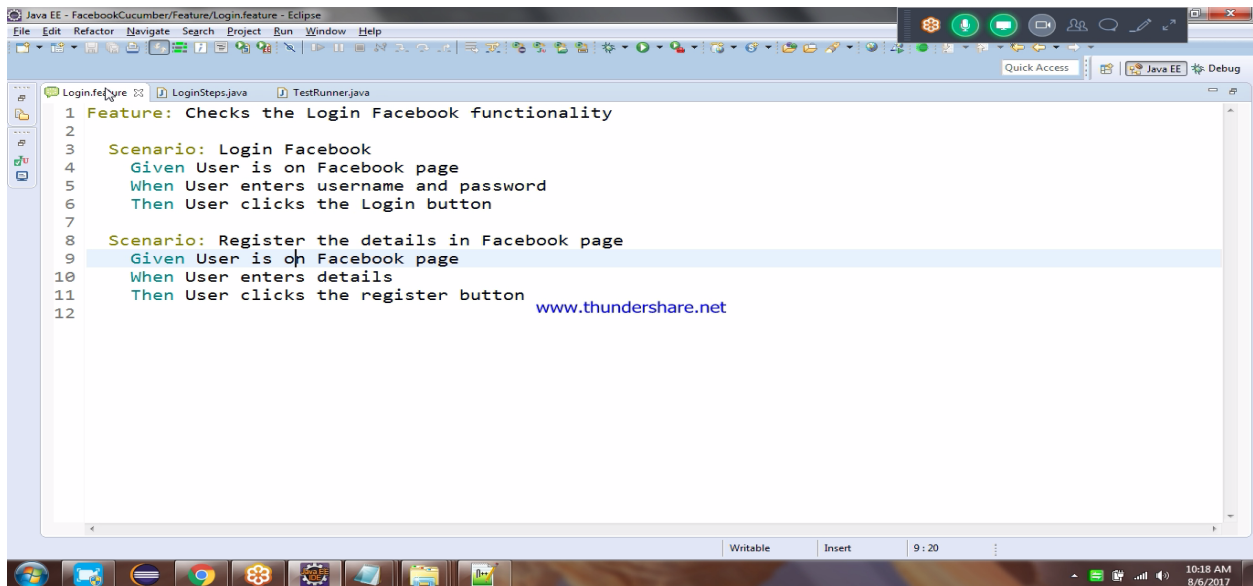
}
```

Output:



3. JSON TYPE REPORT:

Feature file:

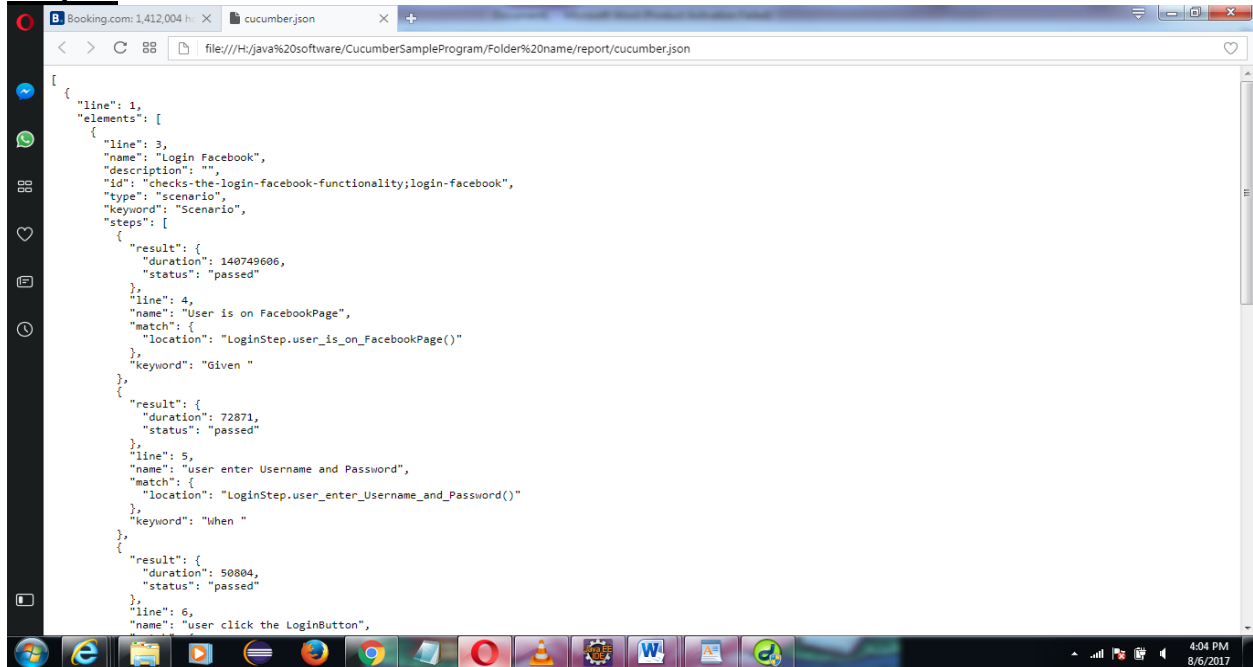


Package: Test runner

```
@RunWith(Cucumber.class)
@cucumberOptions(features = "Features", glue = "Step", plugin= {"pretty", "json:Folder
name/report/cucumber.json"})
public class TestRunner {

}
```

Output:



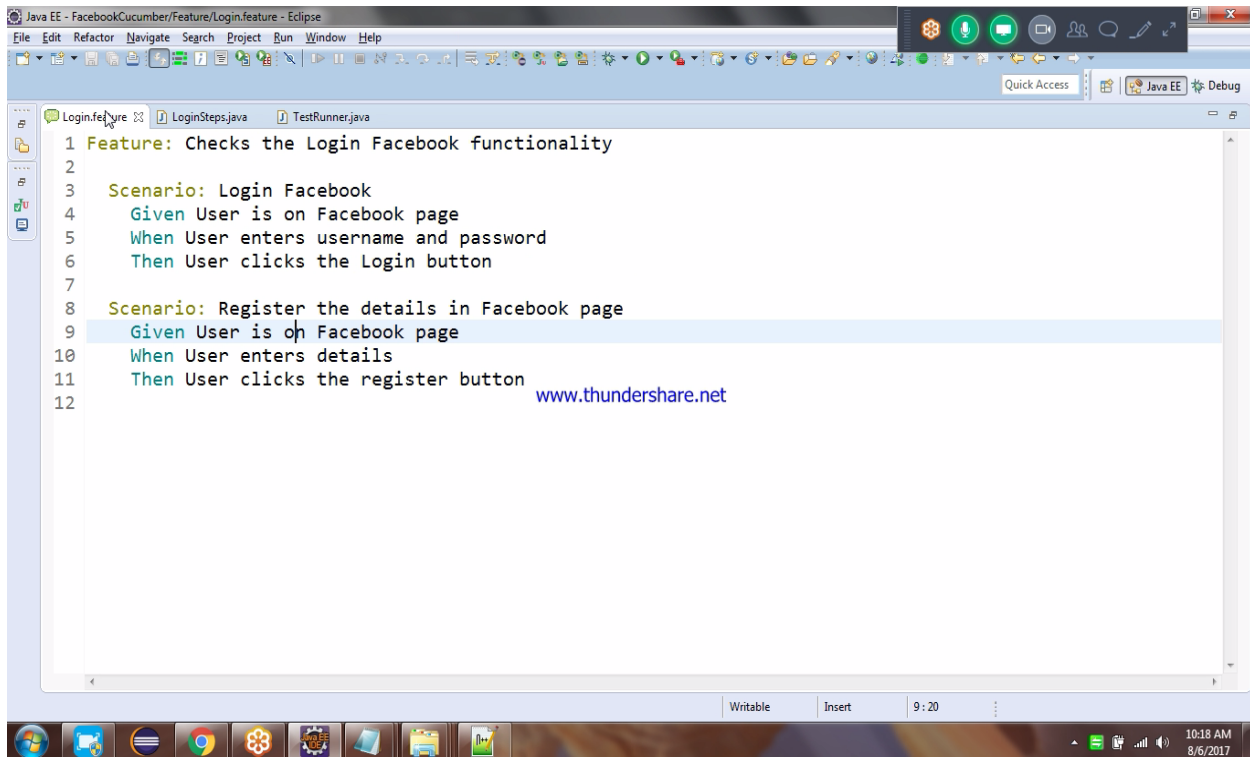
DRY RUN:

- This is used to check our formats on the Featured file.

dryRun=true → Validate our Featured file.

dryRun=false → Not Validate our featured file

Feature file:



Package: Test runner

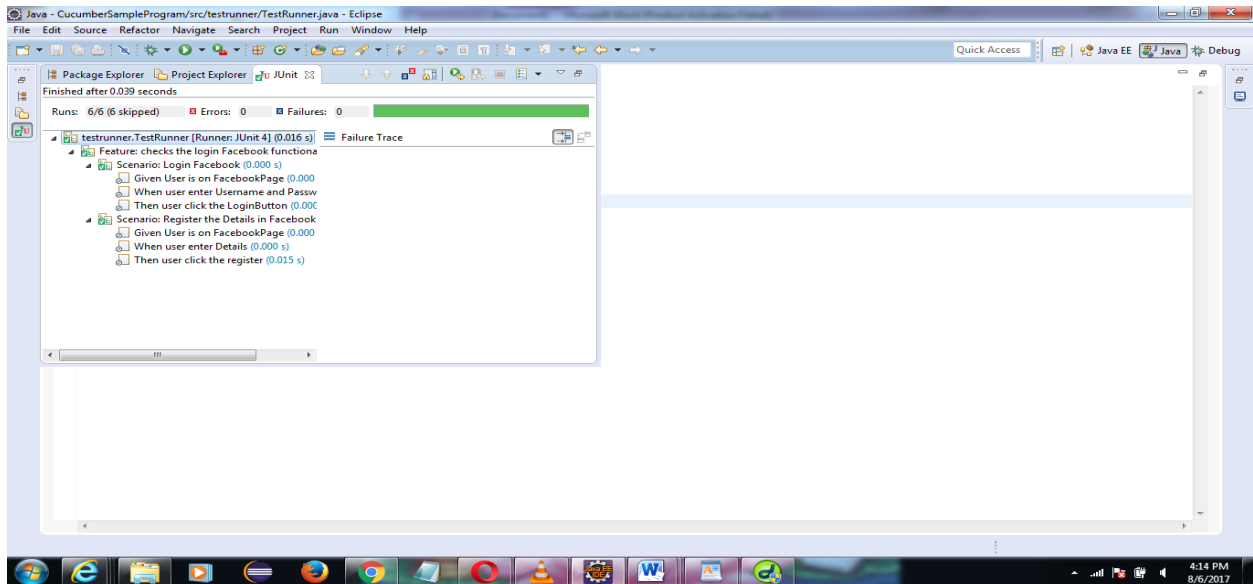
@RunWith(Cucumber.class)

@CucumberOptions(features = "Features", glue = "Step", dryRun=**True**)

public class TestRunner {

}

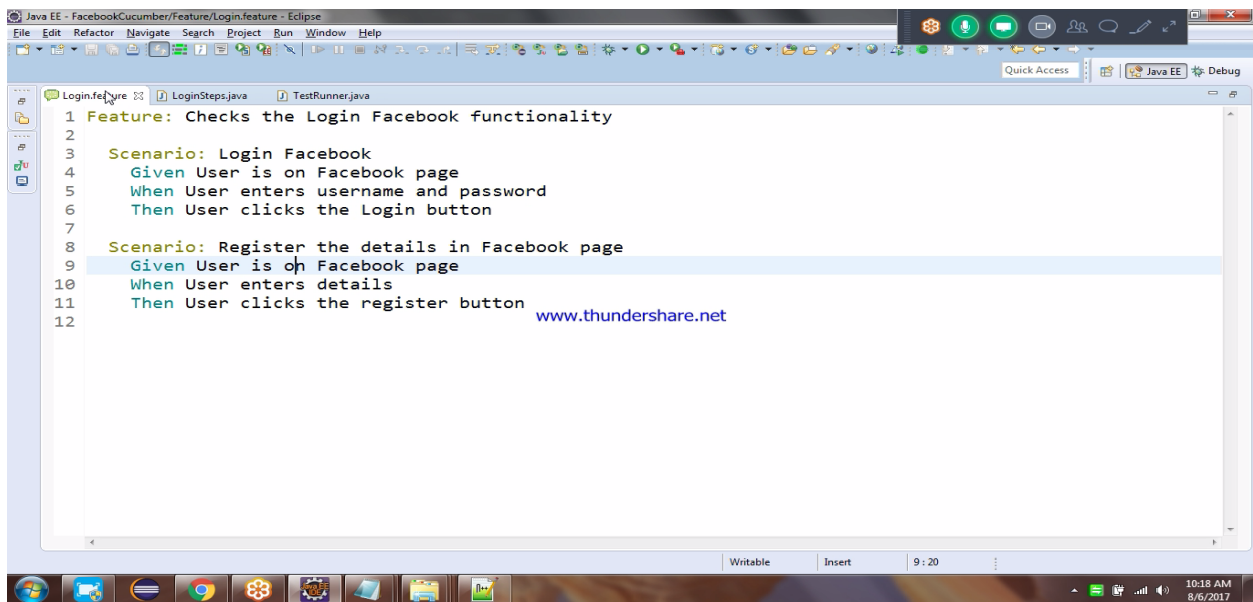
Output:



MONOCHROME:

- It gives report on console.
monochrome = true → It a report.
monochrome = false → It not display a report on console.

Feature file:

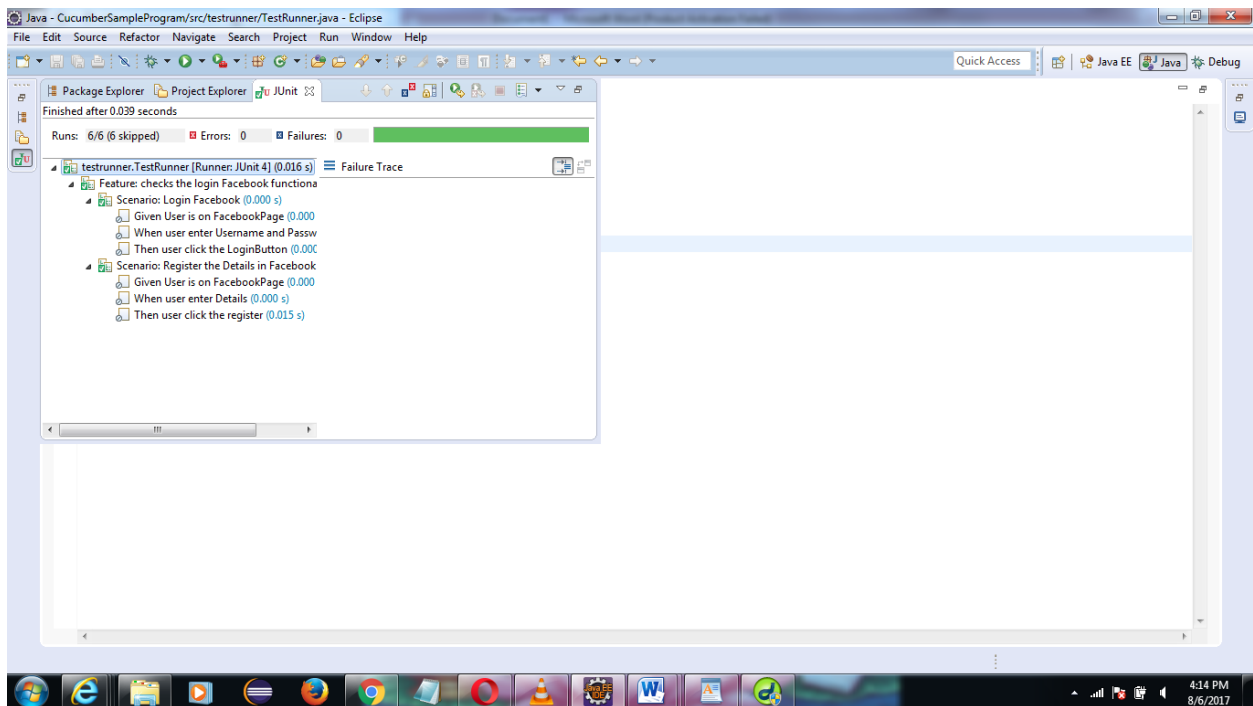


Package: Test runner

```
@RunWith(Cucumber.class)
@cucumberOptions(features = "Features", glue = "Step", dryRun=True)
public class TestRunner {

}
```

Output:

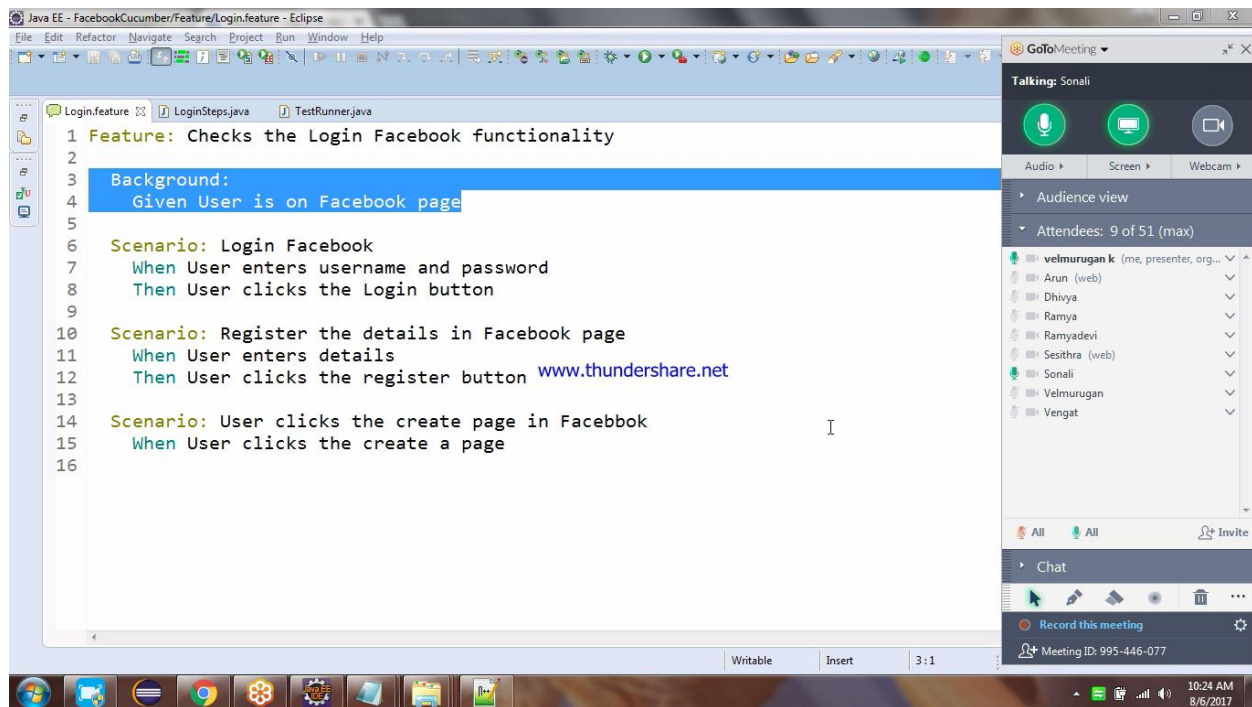


BACKGROUND:

- It's a keyword used in featured class for declare the common step as once.

Output:

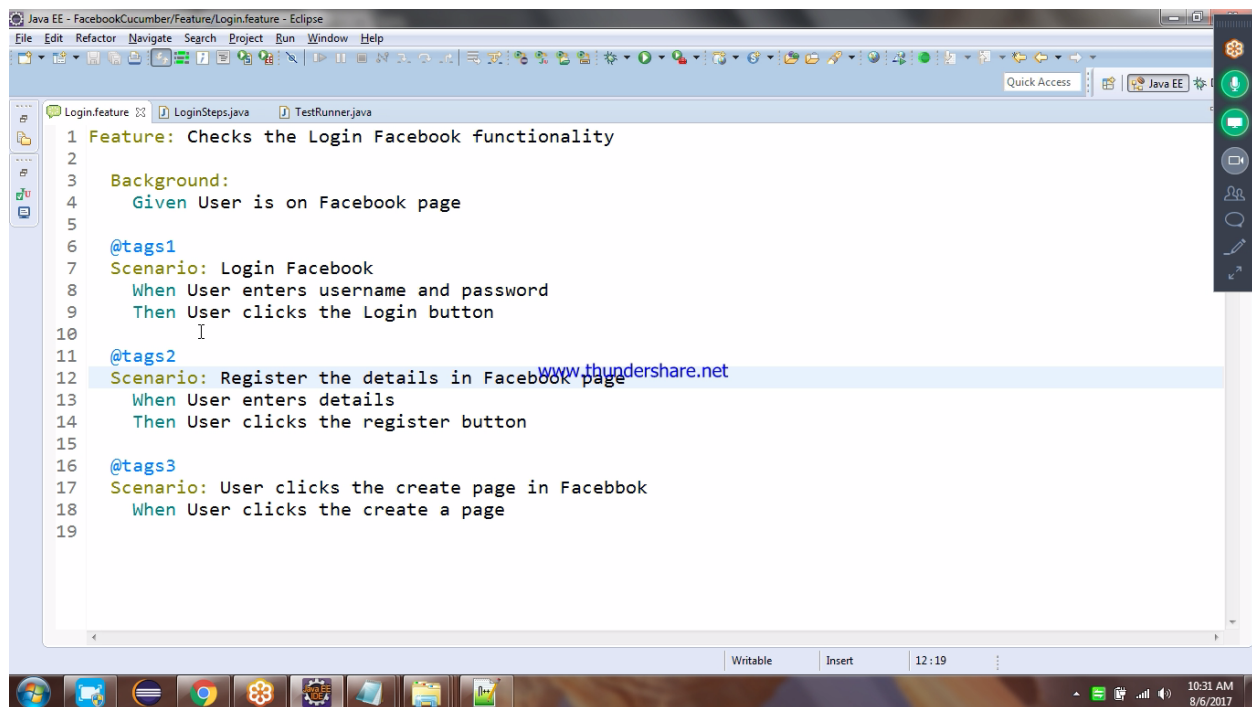
Here “Given” is common for all scenarios ...so we declare under the background keyword.



TAGS:

- It's a command which is used to execute a particular scenario.

Feature file:

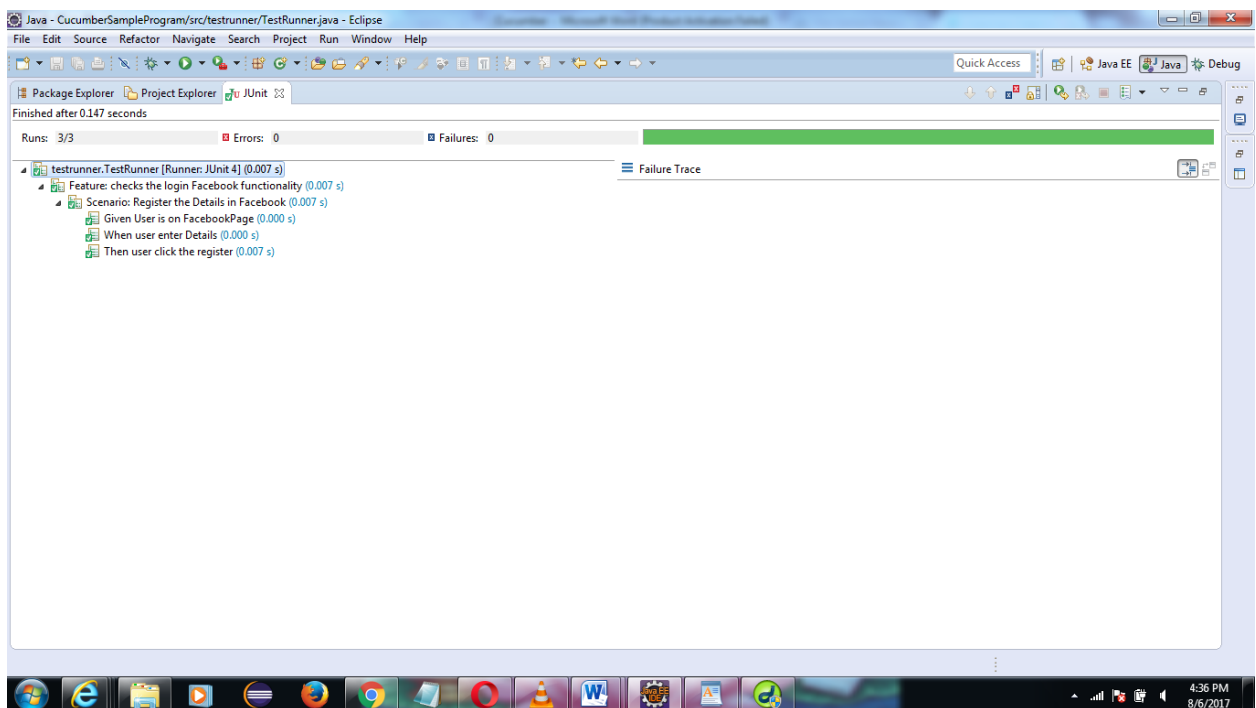


Package: Test runner

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Features", glue = "Step", dryRun=True,
tags={"@tags1"})
public class TestRunner {

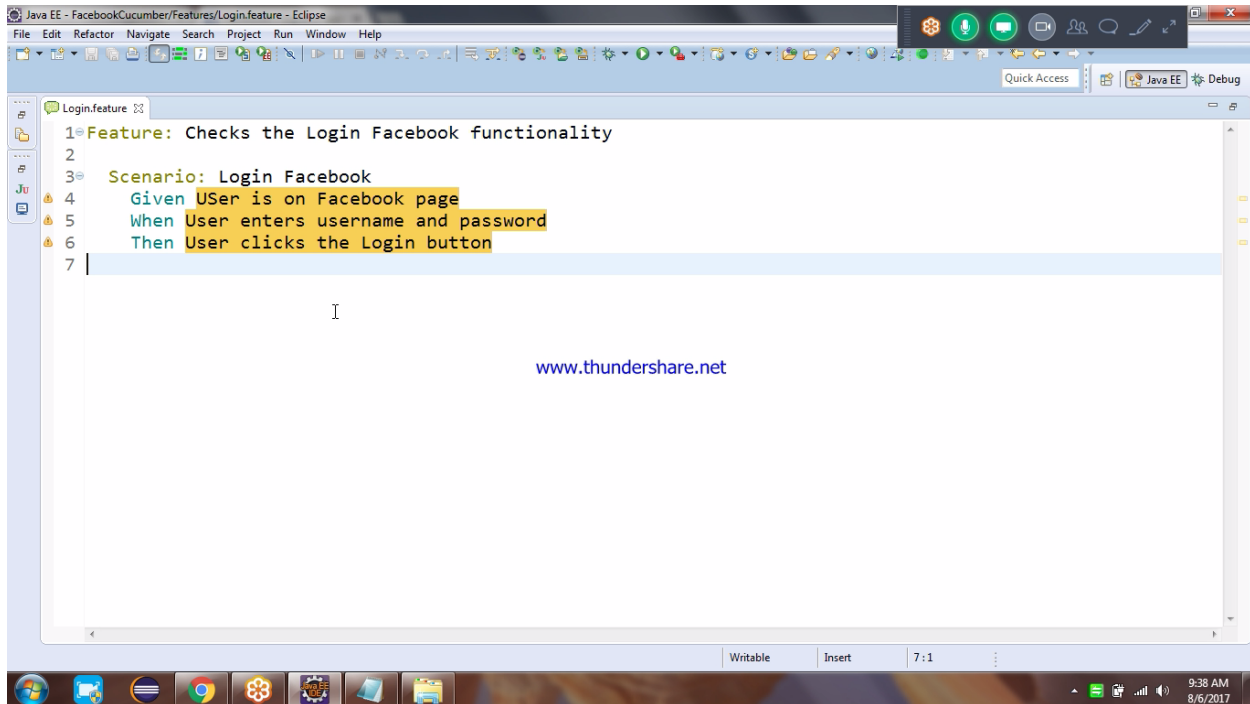
}
```

Output:



FB LOGIN USING CUCUMBER:

Feature file:



Package: testrunner

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Feature", glue = "steps")
public class TestRunner {

}
```

Package: steps

```
public class LoginSteps {
    WebDriver driver;
    @Given("^User is on Facebook page$")
    public void user_is_on_Facebook_page() {
        System.setProperty("webdriver.gecko.driver", "C:/Users/mohan
pc/Desktop/CucumberProgram/driver/geckodriver.exe");
        driver = new FirefoxDriver();
    }
}
```

```

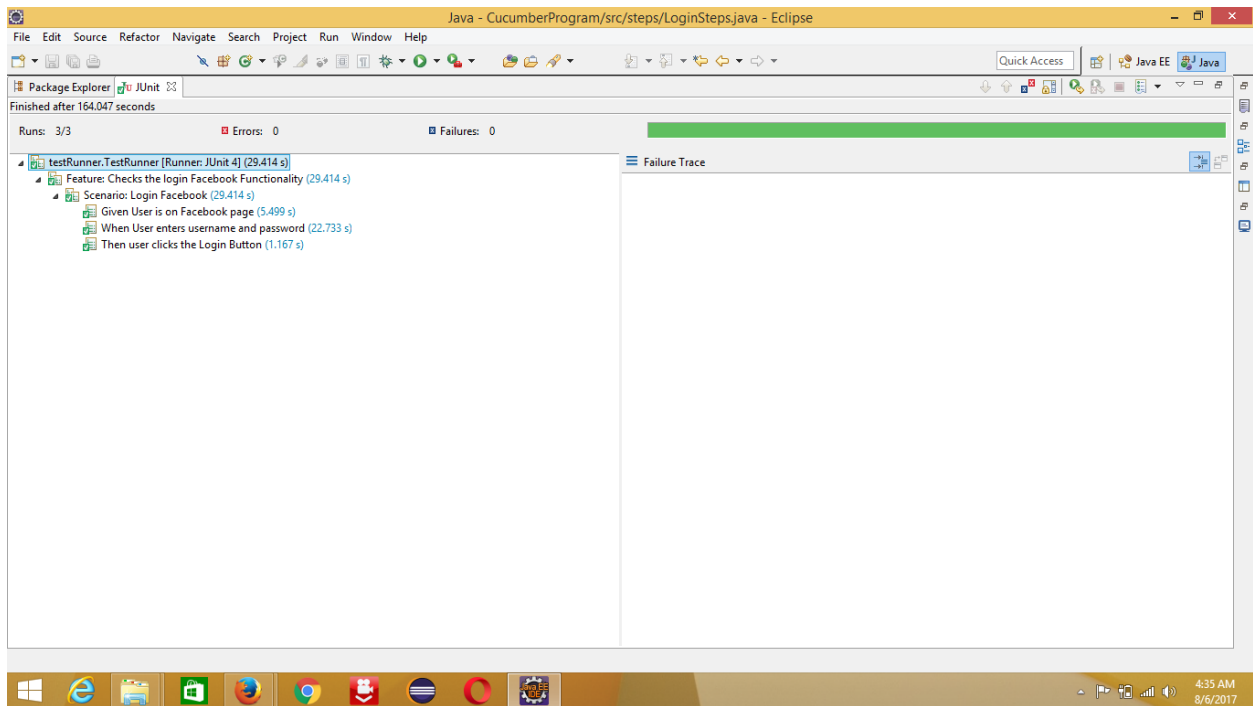
        driver.get("https://www.facebook.com/");
    }

    @When("^User enters username and password$")
    public void user_enters_username_and_password() {
        driver.findElement(By.id("email")).sendKeys("mohanraje6@gmail.com");
        driver.findElement(By.id("pass")).sendKeys("mohanraje6@gmail.com");
    }

    @Then("^user clicks the Login Button$")
    public void user_clicks_the_Login_Button() {
        driver.findElement(By.id("u_0_r")).click();
    }
}

```

Output:



ENTERING VALUE IN FEATURE FILE:

Feature file:

Feature: check the login adactin functionality

Scenario: Login Adactin

Given User is an adactin page

When User enter "vengat16" and "Karthick" and click login button

Then Message displayed Login Successfully

Step definition:

```
public class LoginTest {
    WebDriver driver;

    @Given("^User is an adactin page$")
    public void user_is_an_adactin_page() {
        System.setProperty("webdriver.gecko.driver",
            "H:\\java software\\CucumberSample1\\driver\\geckodriver.exe");
        driver = new FirefoxDriver();
        driver.get("http://www.adactin.com/HotelApp/");
    }

    @When("^User enter \"([^\"]*)\" and \"([^\"]*)\" and click login button$")
    public void user_enter_UserName_and_Password(String Username,
        String Password) {
        driver.findElement(By.id("username")).sendKeys(Username);
        ;
        driver.findElement(By.id("password")).sendKeys>Password);
        ;
        driver.findElement(By.id("login")).click();
    }

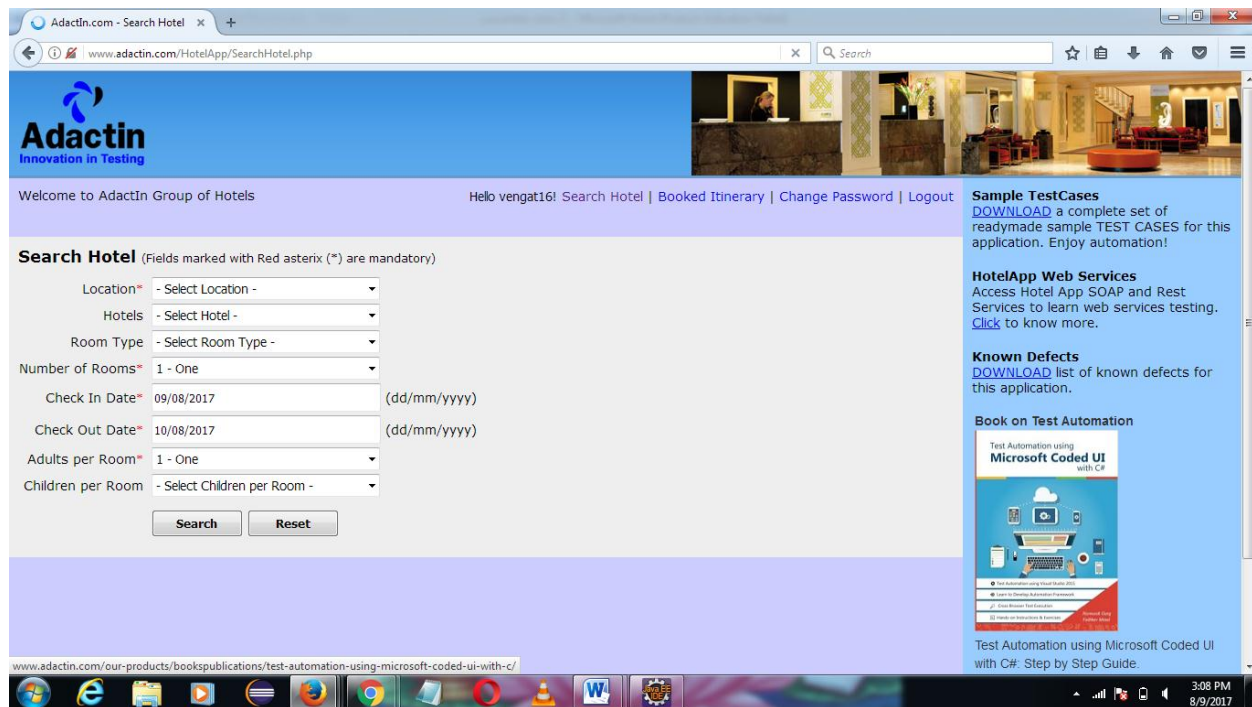
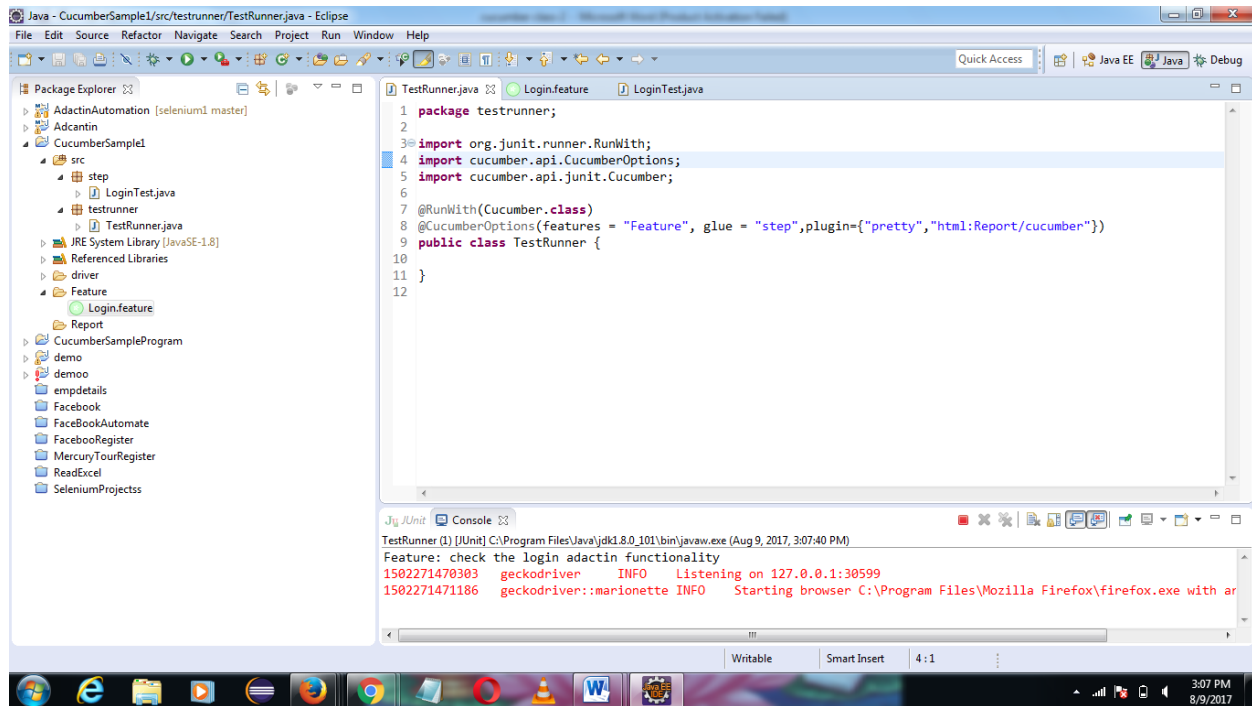
    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {
        driver.quit();
    }
}
```

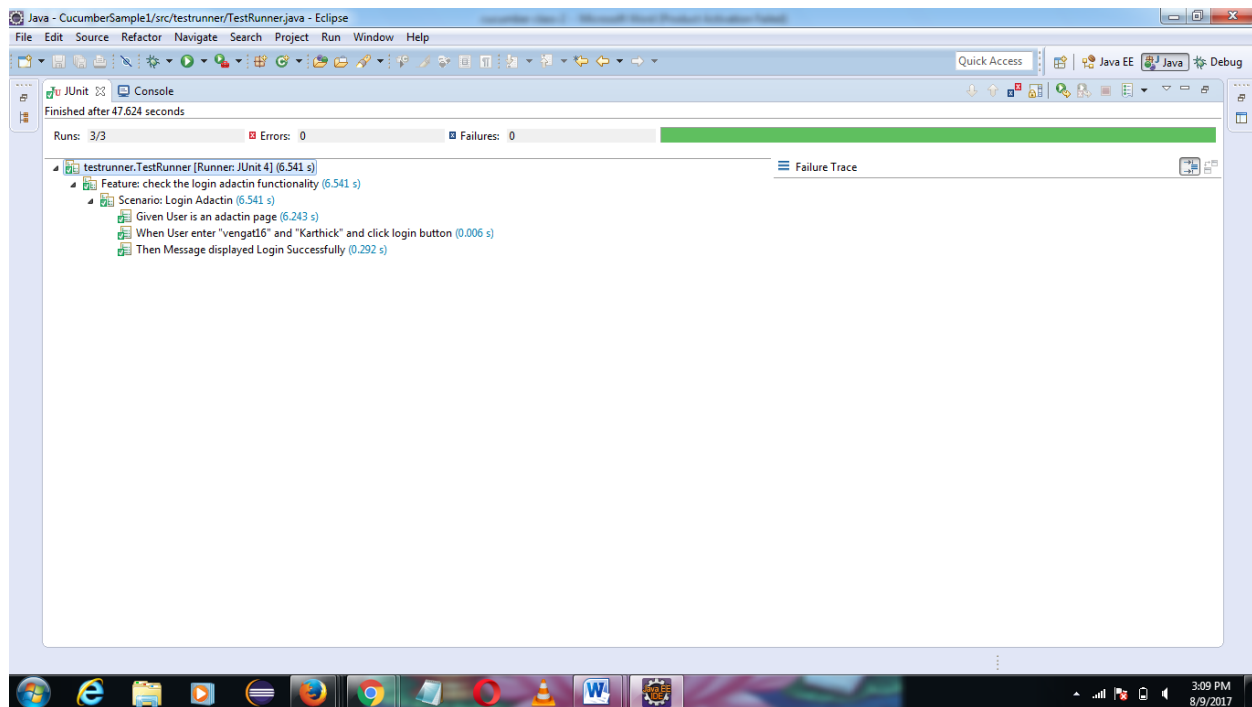
Test runner class:

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Feature", glue =
    "step",plugin={"pretty","html:Report/cucumber"})
public class TestRunner {

}
```

Output:





To check multiple values:

- Using this method we can check the login function with multiple values without using iteration
- This is the easy way to check multiple values
In this method we use “Examples” one keyword in feature file.
- If we use “Examples” , we must give “Scenario Outline” instead of “Scenario”

Feature file:

Feature: check the login adactin functionality

Scenario Outline: Login Adactin

Given User is an adactin page

When User enter "*<UserName>*" and "*<Password>*" and click login button

Then Message displayed Login Successfully

Examples:

UserName	Password
vengat16	Karthick
ezhilarasan	12345

Step definition :

```
public class LoginTest {
    WebDriver driver;

    @Given("^User is an adactin page$")
    public void user_is_an_adactin_page() {
        System.setProperty("webdriver.gecko.driver",
            "H:\\java
software\\CucumberSample1\\driver\\geckodriver.exe");
        driver = new FirefoxDriver();
        driver.get("http://www.adactin.com/HotelApp/");
    }

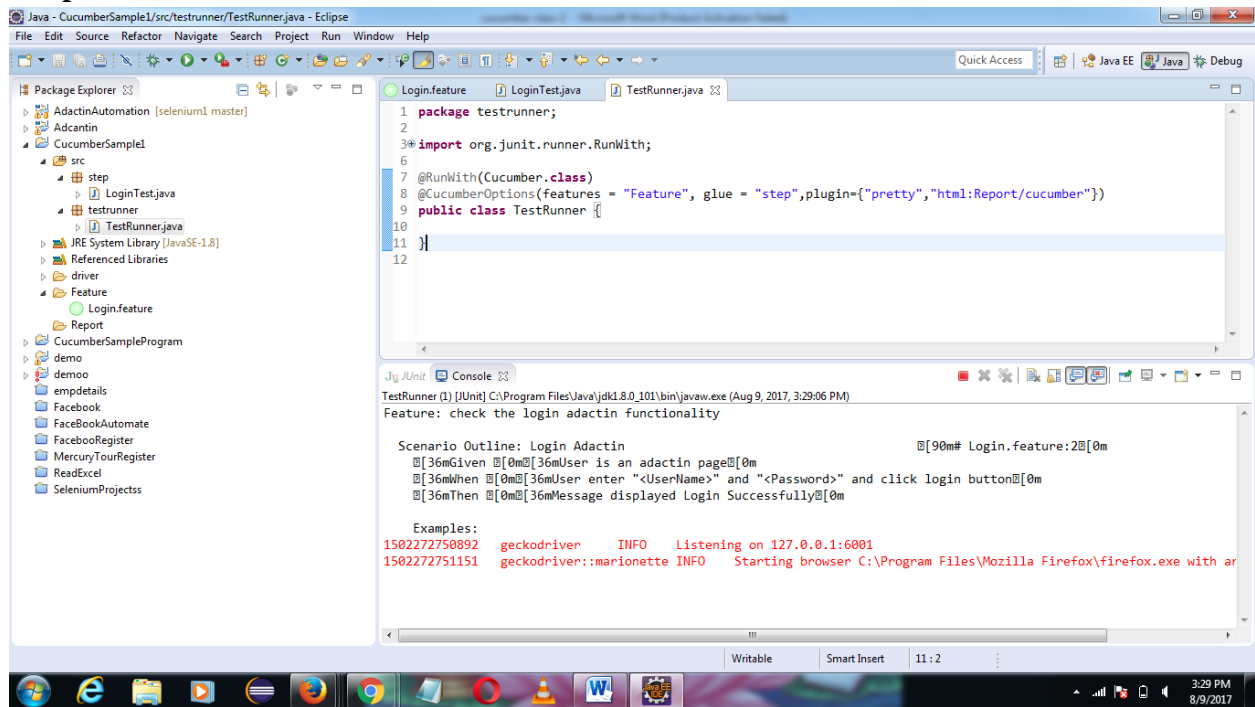
    @When("^User enter \"([^\"]*)\" and \"([^\"]*)\" and click login
button$")
    public void user_enter_UserName_and_Password(String Username,
        String Password) {
        driver.findElement(By.id("username")).sendKeys(Username);

        driver.findElement(By.id("password")).sendKeys(Password);

        driver.findElement(By.id("login")).click();
    }

    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {
        driver.quit();
    }
}
```

Output:



Adactin.com - Hotel Reservation x

www.adactin.com/HotelApp/

Search

Adactin
Innovation in Testing

Welcome to AdactIn Group of Hotels



Existing User Login - Build 1

Username

Password

[Forgot Password?](#)

[New User Register Here](#)

Important Note:

Hotel Application has 2 builds:

- **Build 1** - Has been developed with known defects. Thus, functional test cases and automation scripts will fail on this build.
- **Build 2** - Known defects have been fixed. Thus, functional test cases and automation test scripts should pass when executed on this build.
[Go to Build 2](#)

3:37 PM
8/9/2017

Adactin.com - Hotel Reserva x

www.adactin.com/HotelApp/

Search

Adactin
Innovation in Testing

Welcome to AdactIn Group of Hotels



Existing User Login - Build 1

Username

Password

[Forgot Password?](#)

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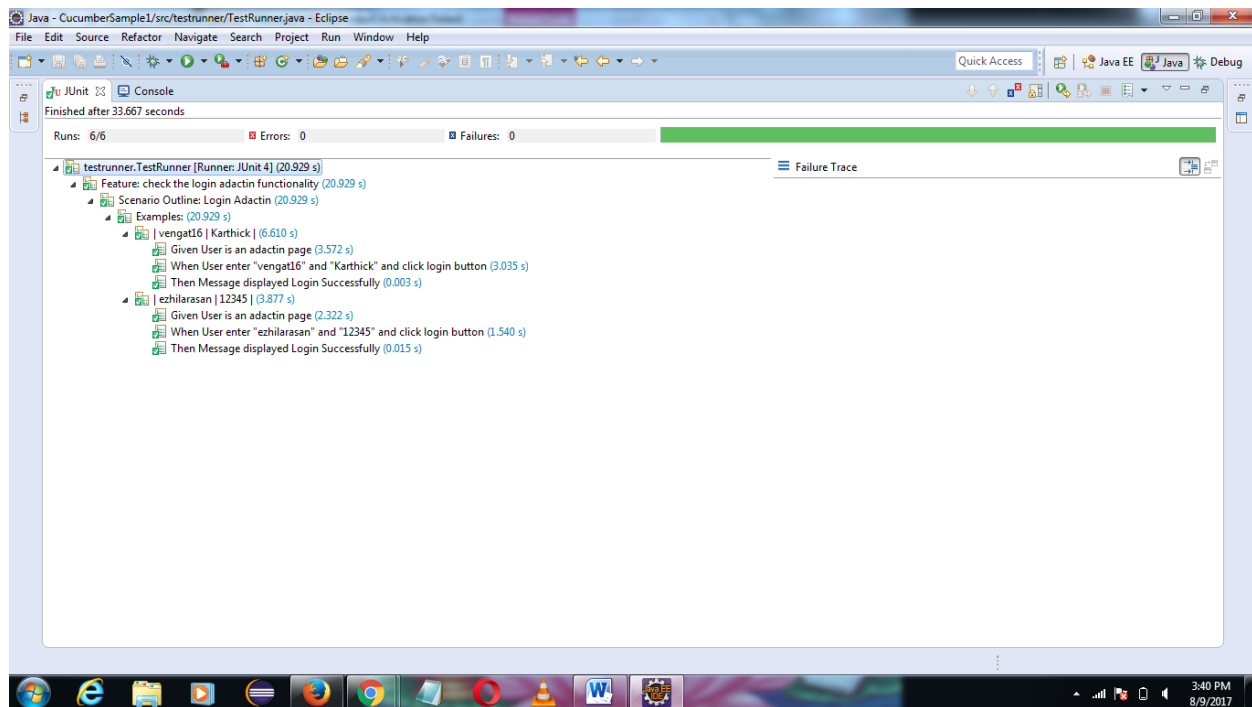
Important Note:

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[Go to Build 2](#)

Transferring data from www.adactin.com...

3:37 PM
8/9/2017



- If we enter more than one value it will automatically execute one by one.

Entering value in future file (another method):

By using List:

Feature file:

Feature: check the login adactin functionality

Scenario: Login Adactin

Given User is an adactin page

When User enters credentials and click login button

|vengat16|Karthick|

|ezhilarasan|12345|

Then Message displayed Login Successfully

Step definition:

```
public class LoginTest {
    WebDriver driver;

    @Given("^User is an adactin page$")
    public void user_is_an_adactin_page() {
        System.setProperty("webdriver.gecko.driver",
```

```

        "H:\\java
software\\CucumberSample1\\driver\\geckodriver.exe");
        driver = new FirefoxDriver();
        driver.get("http://www.adactin.com/HotelApp/");
    }
    @When("^User enters credentials and click login button$")
    public void user_enters_credentials_and_click_login_button(DataTable
data) {
        List<List<String>> dataList = data.raw();
        driver.findElement(By.id("username")).sendKeys(dataList.get(1).get(0));

        driver.findElement(By.id("password")).sendKeys(dataList.get(1).get(1));

        driver.findElement(By.id("login")).click();
    }

    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {
        driver.quit();
    }
}

```

- This is the data table concept
- Here we input the data based on index

Test runner class:

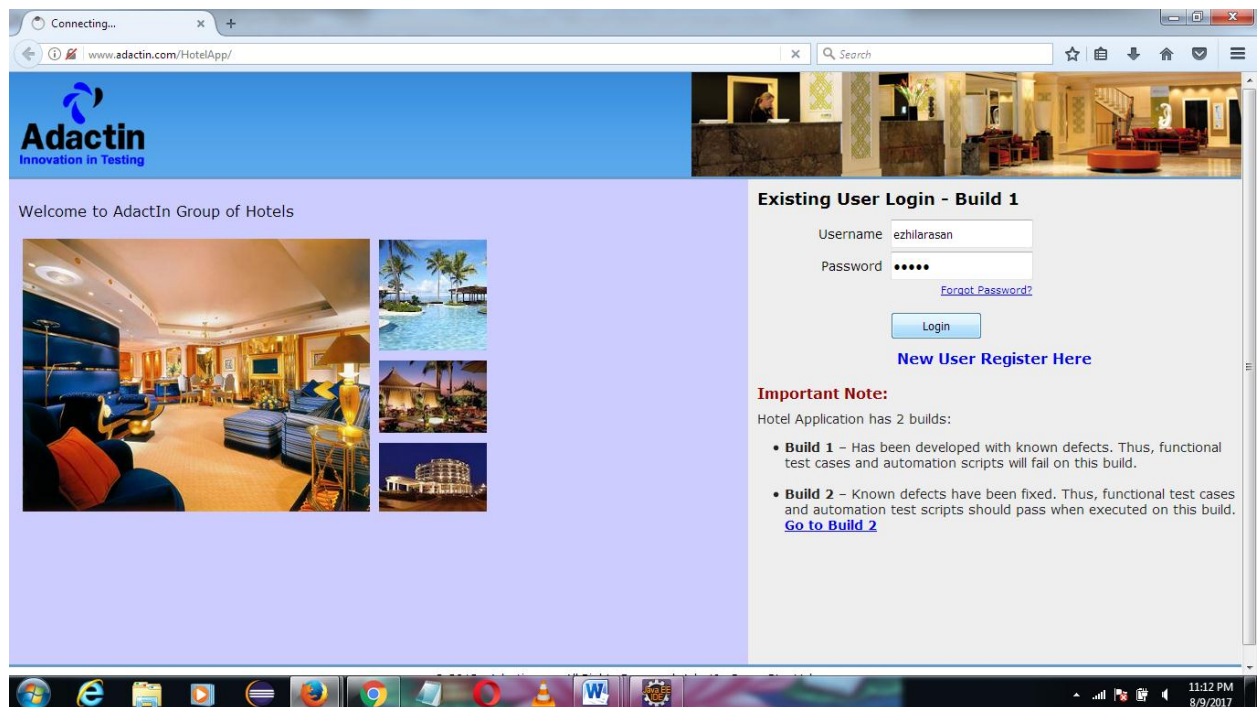
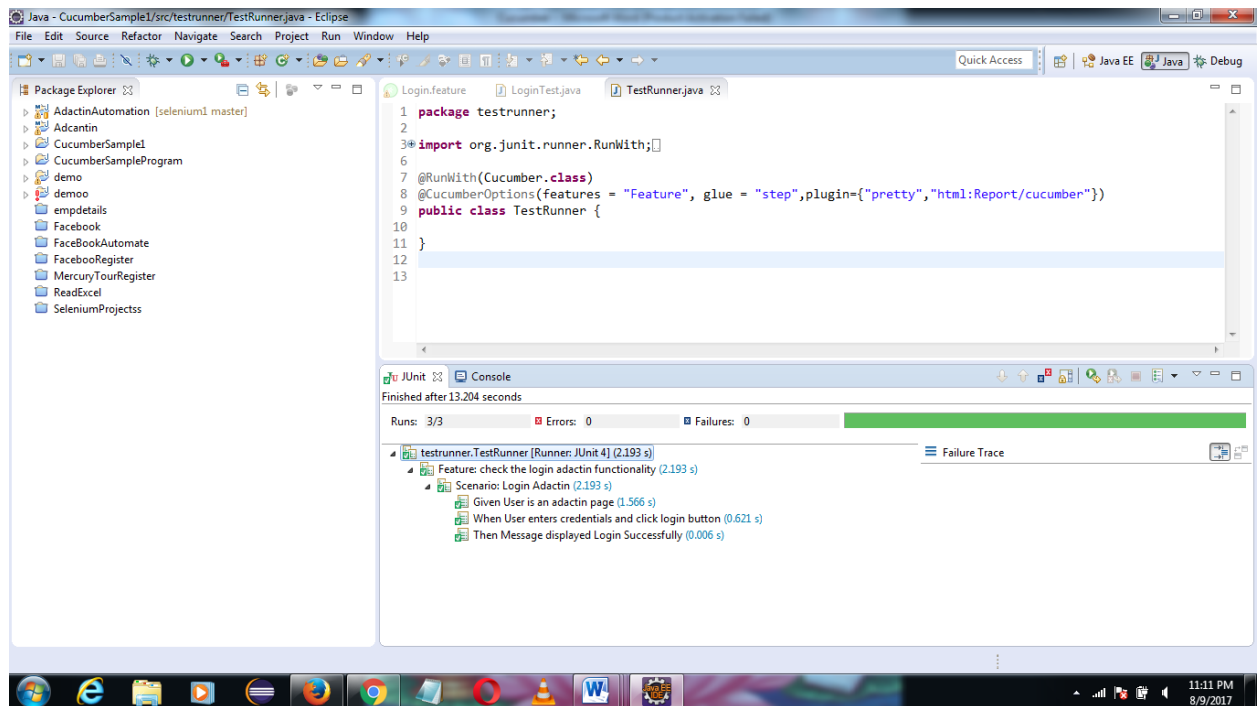
```

@RunWith(Cucumber.class)
@CucumberOptions(features = "Feature", glue =
"step",plugin={"pretty","html:Report/cucumber"})
public class TestRunner {

}

```

Output:



- Here we given first index, so it takes first index value.
- If we give 0th index, it will take 0th value

By using map:

Feature file:

Feature: check the login adactin functionality

Scenario: Login Adactin

Given User is an adactin page

When User enters credentials and click login button

|userName|Password|

|vengat16|Karthick|

|ezhilarasan|12345|

Then Message displayed Login Successfully

Step definition :

```
public class LoginTest {
    WebDriver driver;

    @Given("^User is an adactin page$")
    public void user_is_an_adactin_page() {
        System.setProperty("webdriver.gecko.driver",
            "H:\\java
software\\CucumberSample1\\driver\\geckodriver.exe");
        driver = new FirefoxDriver();
        driver.get("http://www.adactin.com/HotelApp/");
    }
    @When("^User enters credentials and click login button$")
    public void user_enters_credentials_and_click_login_button(DataTable
data) {
        List<Map<String, String>> dataMap = data.asMaps(String.class,
String.class);
        driver.findElement(By.id("username")).sendKeys(dataMap.get(0).get("userName")
);

        driver.findElement(By.id("password")).sendKeys(dataMap.get(0).get("Pass
word"));

        driver.findElement(By.id("login")).click();
    }

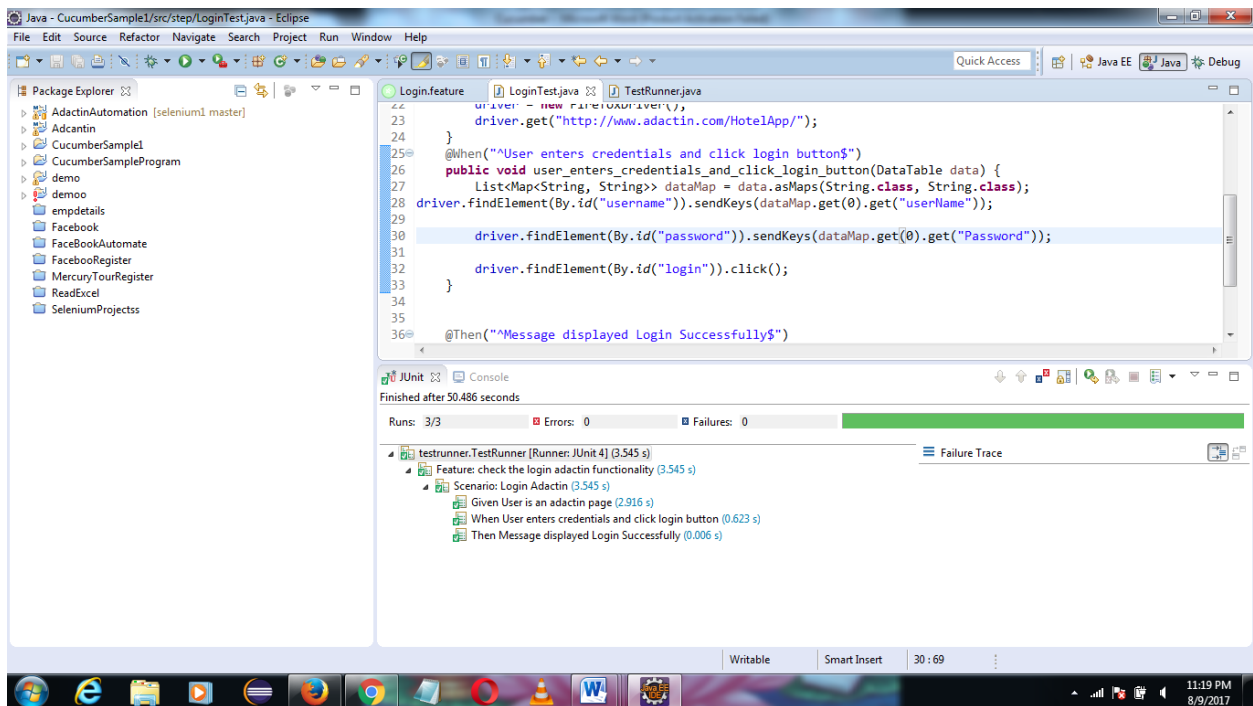
    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {
        driver.quit();
    }
}
```

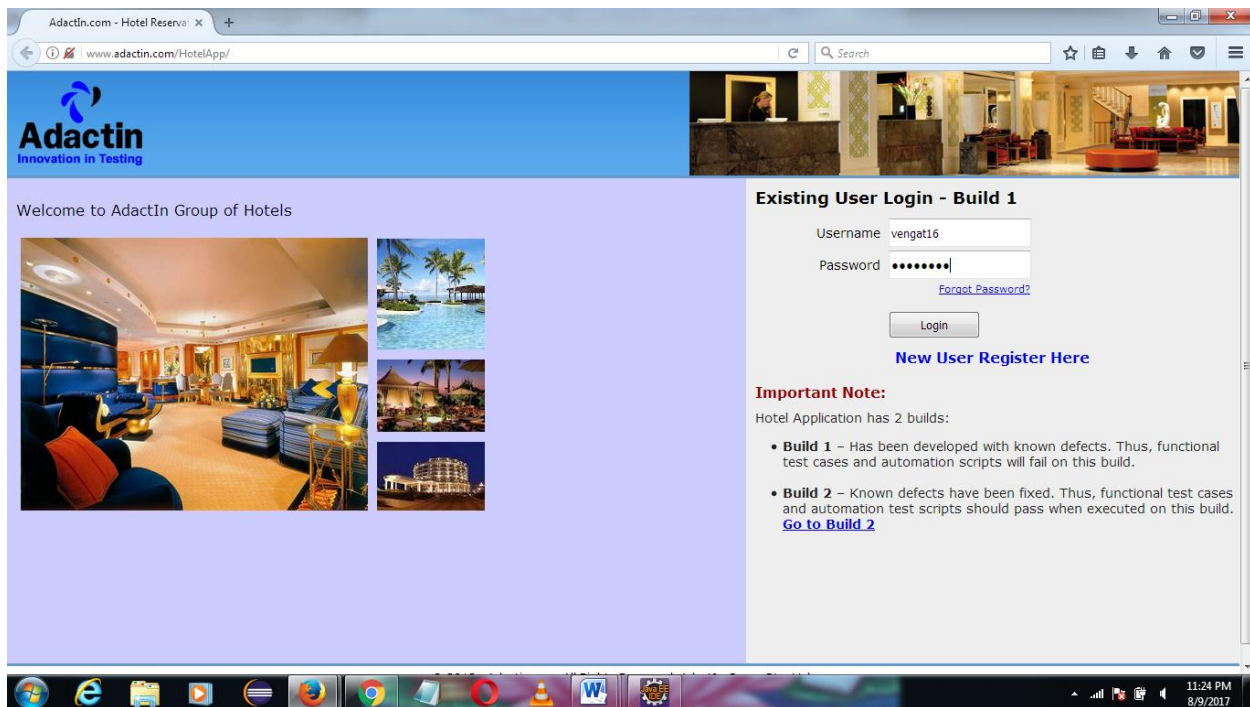
Test runner class:

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Feature", glue =
"step",plugin={"pretty","html:Report/cucumber"})
public class TestRunner {

}
```

Output :





- Here we using map, so we pass the key and it will enter relevant values of the particular index

To check random input values

- Here for example , one unique username is there, using this user name we need to check multiple times. That time we get error(i.e) “user name already registered”, these kind of error will show.
- To avoid these, we use **RandomStringUtils** class and append the value in the user name
- So we get the random input
- Syntax :
 - To append alphabet value
`String s = RandomStringUtils.randomAlphabetic(4);`
 Here, 4 means 4 alphabet letters will add randomly
 - To append alphanumeric value
`String s = RandomStringUtils.randomAlphanumeric (4);`
 Here, 4 means 4 alphanumeric letters will add randomly

- To append alphabet value
String s = RandomStringUtils.randomNumeric (4);
Here, 4 means 4 numeric values will add randomly

Feature file:

Feature: check the login adactin functionality

Scenario: Login Adactin

Given User is an adactin page

When User enters credentials and click login button

|userName|Password|

|vengat16|Karthick|

|ezhilarasan|12345|

Then Message displayed Login Successfully

Step definition :

```
public class LoginTest {
    WebDriver driver;

    @Given("^User is an adactin page$")
    public void user_is_an_adactin_page() {
        System.setProperty("webdriver.gecko.driver",
            "H:\\java
software\\CucumberSample1\\driver\\geckodriver.exe");
        driver = new FirefoxDriver();
        driver.get("http://www.adactin.com/HotelApp/");
    }
    @When("^User enters credentials and click login button$")
    public void user_enters_credentials_and_click_login_button(DataTable
data) {
        String s = RandomStringUtils.randomAlphanumeric(4);
        List<Map<String, String>> dataMap = data.asMaps(String.class,
String.class);
        driver.findElement(By.id("username")).sendKeys(dataMap.get(0).get("userName")
+s);

        driver.findElement(By.id("password")).sendKeys(dataMap.get(0).get("Pass
word"));

        driver.findElement(By.id("login")).click();
    }

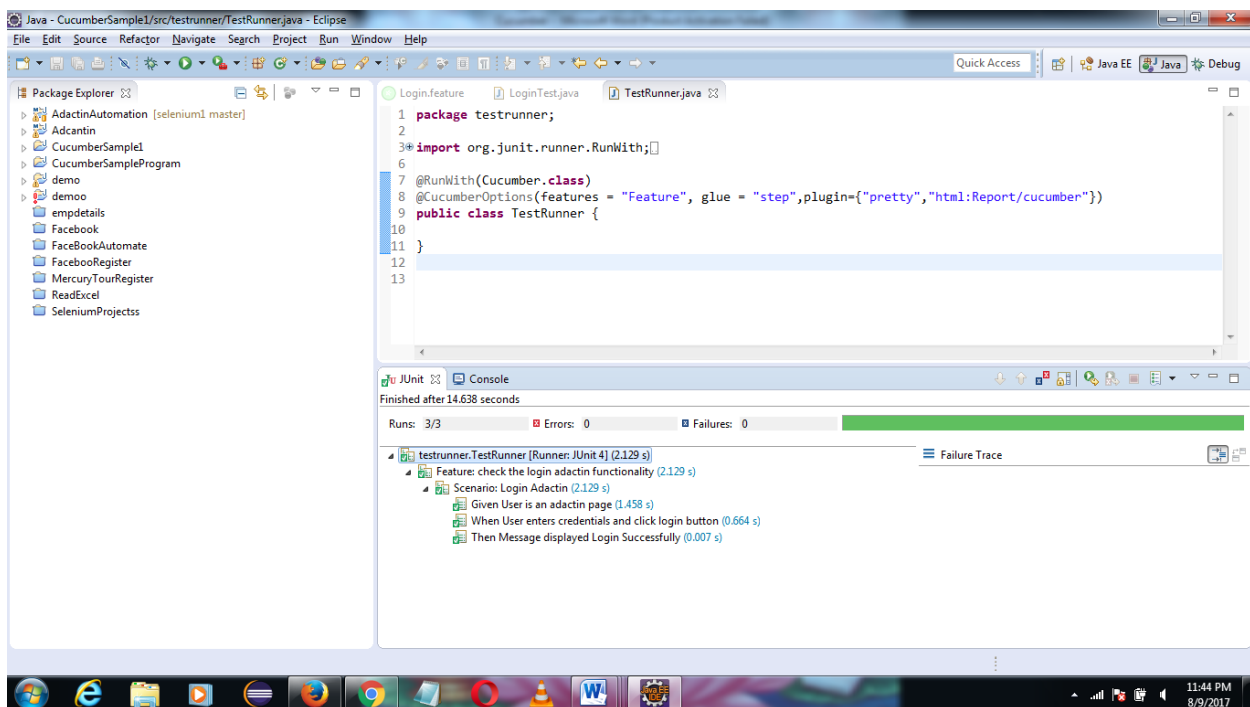
    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {
        driver.quit();
    }
}
```

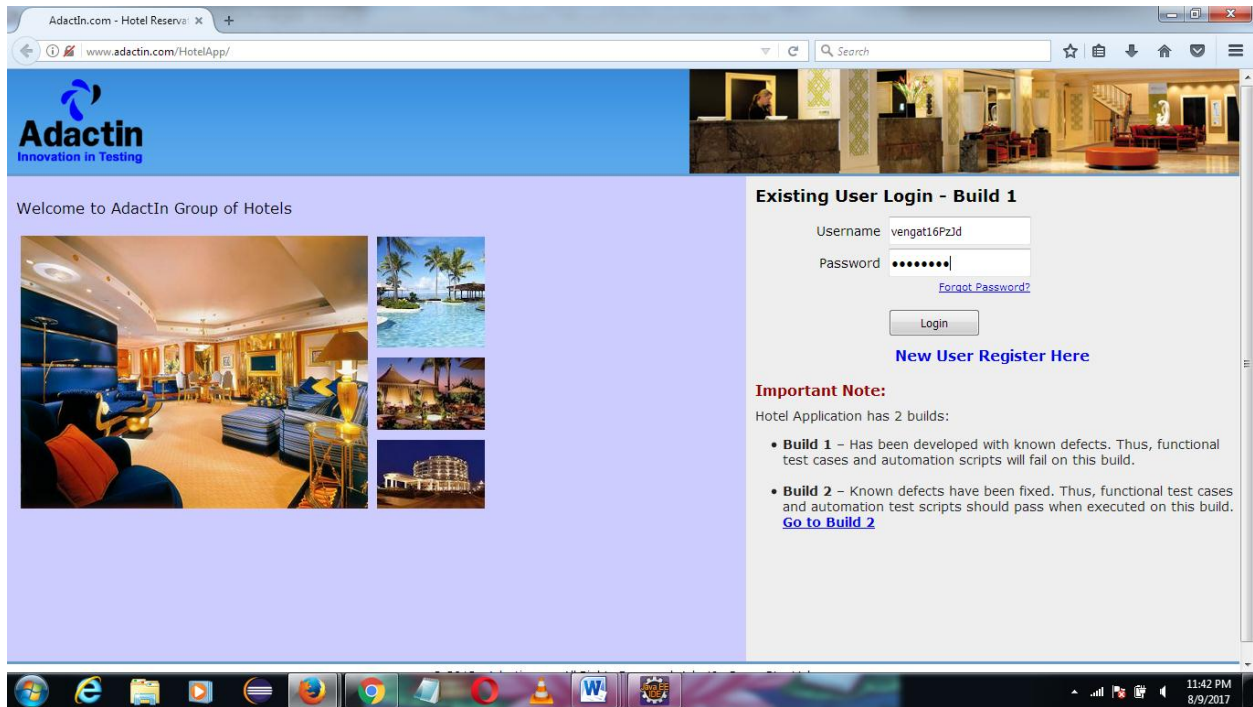
Test runner class:

```
@RunWith(Cucumber.class)
@cucumberOptions(features = "Feature", glue =
"step",plugin={"pretty", "html:Report/cucumber"})
public class TestRunner {

}
```

Output :



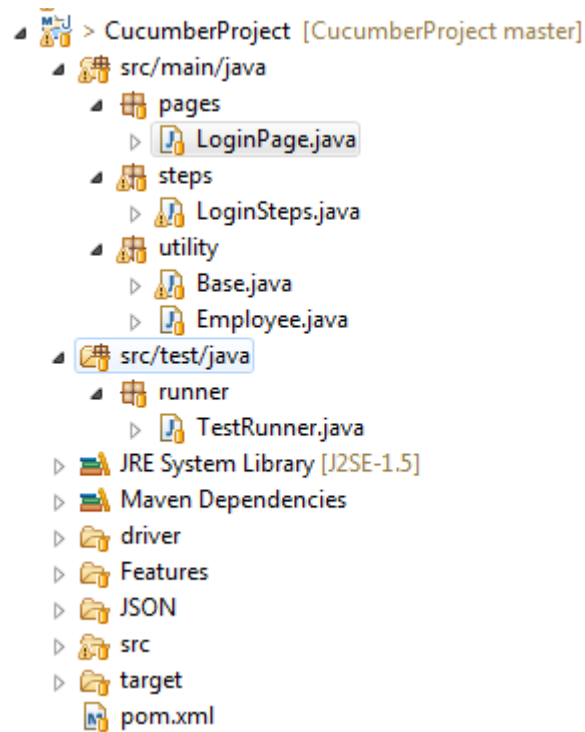


- Here 4 alphanumeric letters added in the user name
- It will randomly change for the next iteration

Cucumber with maven and POM:

- Here we use maven, POM and cucumber combination

Framework structure:



POM class:

```
public class LoginPage extends Base {

    @FindBy(id = "email")
    private WebElement txtUserName;

    @FindBy(id = "pass")
    private WebElement txtPassword;

    @FindBy(xpath = "//*[@text()='Log In']")
    private WebElement btnLogin;

    @FindBy(xpath = "//a[@title='Go to Facebook home']")
    private WebElement imgFbLogo;

    public WebElement getImgFbLogo() {
        return imgFbLogo;
    }
}
```

```

    public void setImgFbLogo(WebElement imgFbLogo) {
        this.imgFbLogo = imgFbLogo;
    }

    public void setTxtUserName(WebElement txtUserName) {
        this.txtUserName = txtUserName;
    }

    public void setTxtPassword(WebElement txtPassword) {
        this.txtPassword = txtPassword;
    }

    public LoginPage() {
        PageFactory.initElements(driver, this);
    }

    public WebElement getTxtUserName() {
        return txtUserName;
    }

    public WebElement getTxtPassword() {
        return txtPassword;
    }

    public void setTxtPassword(String txtPassword) {
        this.txtPassword.sendKeys(txtPassword);
    }

    public WebElement getBtnLogin() {
        return btnLogin;
    }

    public void setBtnLogin(WebElement btnLogin) {
        this.btnLogin = btnLogin;
    }

}

```

Step definition:

```

public class LoginSteps extends Base {
    WebDriver driver;
    LoginPage loginPage;
}

```

```

    @Given("^User is on facebook Page$")
    public void user_is_on_Home_Page() {
        driver = getDriver();
    }

    @When("^User enters \"([^\"]*)\", \"([^\"]*)\" and click the login button$")
    public void user_enters_and_click_the_login_button(String userName,
        String Password) {
        LoginPage = new LoginPage();

        setText(loginPage.getTxtUserName(), userName);
        setText(loginPage.getTxtPassword(), Password);
        clickBtn(loginPage.getBtnLogin());
    }

    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {

        driver.quit();
    }
}

```

Feature file:

Feature: check the login adactin functionality

Scenario: Login Adactin

Given User is an adactin page

When User enter "vengat16" and "Karthick" and click login button

Then Message displayed Login Successfully

Utility package:

Base:

```

public class Base {
    public static WebDriver driver;
    static WebDriverWait wait;
    static File f1 = new File("./JSON/Configuration.json");

    public static WebDriver getDriver() {
        JSONObject jsonObject = JSONReadFromFile();
        String browser = (String) jsonObject.get("browser");
    }
}

```

```

        File f = new File("./driver");
        if (browser.equals("chrome")) {
            System.setProperty("webdriver.chrome.driver",
f.getAbsolutePath()
                + "/chromedriver.exe");
            driver = new ChromeDriver();

        } else if (browser.equals("firefox")) {
            System.setProperty("webdriver.gecko.driver",
f.getAbsolutePath()
                + "/geckodriver.exe");
            driver = new FirefoxDriver();

        } else if (browser.equals("ie")) {
            System.setProperty("webdriver.ie.driver",
f.getAbsolutePath()
                + "/IEDriverServer.exe");
            driver = new InternetExplorerDriver();

        }

        driver.manage().window().maximize();
        driver.get((String) jsonObject.get("url"));
        return driver;
    }

    public static boolean elementToBeVisible(WebDriver driver, int time,
        WebElement element) {
        boolean flag = false;
        try {
            wait = new WebDriverWait(driver, time);
            wait.until(ExpectedConditions.visibilityOf(element));
            flag = true;
        } catch (Exception e) {
            e.printStackTrace();
        }
        return flag;
    }

    public static boolean alertIsPresent(WebDriver driver, int time) {
        boolean flag = false;
        try {
            wait = new WebDriverWait(driver, time);
            wait.until(ExpectedConditions.alertIsPresent());
            flag = true;
        } catch (Exception e) {
            e.printStackTrace();
        }
        return flag;
    }
}

```



```

    public static boolean elementToBeClickable(WebDriver driver, int time,
        WebElement element) {
        boolean flag = false;
        try {
            wait = new WebDriverWait(driver, time);

            wait.until(ExpectedConditions.elementToBeClickable(element));
            flag = true;
        } catch (Exception e) {
            e.printStackTrace();
        }
        return flag;
    }

    public static boolean elementFound(WebDriver driver, int time,
        WebElement element) {
        boolean res = false;
        driver.manage().timeouts().implicitlyWait(time,
TimeUnit.SECONDS);
        try {

            res = element.isDisplayed();
        } catch (Exception e) {
            e.printStackTrace();

        }
        return res;
    }

    public static boolean elementFound(WebElement element) {
        boolean res = false;
        try {
            res = element.isDisplayed();
        } catch (Exception e) {
            e.printStackTrace();

        }
        return res;
    }

    public static void setText(WebElement element, String name) {
        if (name != null && elementFound(element)) {
            element.clear();
            element.sendKeys(name);
        }
    }

```

```

    public static String getText(WebElement element) {
        String name = null;
        if (elementFound(element)) {
            name = element.getAttribute("value");
        }
        return name;
    }

    public static void clickBtn(WebElement element) {
        if (elementFound(element)) {
            element.click();
        }
    }

    public static JSONObject JSONReadFromFile() {
        JSONParser parser = new JSONParser();
        JSONObject jsonObject = null;
        try {

            Object obj = parser.parse(new
FileReader(f1.getAbsolutePath()));

            jsonObject = (JSONObject) obj;

        } catch (Exception e) {
            e.printStackTrace();
        }
        return jsonObject;
    }

    public static void getScreenShot(String screenShotFileName) {
        File screenShotLocation = new File("./screenshot/" +
screenShotFileName
            + ".png");
        TakesScreenshot screenshot = (TakesScreenshot) driver;
        File file = screenshot.getScreenshotAs(OutputType.FILE);
        try {
            FileUtils.copyFile(file, screenShotLocation);
        } catch (IOException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
    }

    public static void uploadFiles(File path) {
        try {
            Robot robot = new Robot();
            robot.setAutoDelay(3000);
            StringSelection selection = new StringSelection(
                path.getAbsolutePath());

```

```

Toolkit.getDefaultToolkit().getSystemClipboard()
    .setContents(selection, null);
// press control+v
robot.keyPress(KeyEvent.VK_CONTROL);
robot.keyPress(KeyEvent.VK_V);
robot.setAutoDelay(3000);
// release control+v
robot.keyRelease(KeyEvent.VK_CONTROL);
robot.keyRelease(KeyEvent.VK_V);
// press enter
robot.setAutoDelay(3000);
robot.keyPress(KeyEvent.VK_ENTER);
robot.keyRelease(KeyEvent.VK_ENTER);

} catch (AWTException e) {
    // TODO Auto-generated catch block
    e.printStackTrace();
}

}

public static List<HashMap<String, String>> readValueFromExcelSheet() {
    List<HashMap<String, String>> mapDatasList = new ArrayList();
    try {
        File excelLocaltion = new File("./Excel/Facebook.xlsx");

        String sheetName = "Datas";

        FileInputStream f = new FileInputStream(
            excelLocaltion.getAbsolutePath());
        Workbook w = new XSSFWorkbook(f);
        Sheet sheet = w.getSheet(sheetName);
        Row headerRow = sheet.getRow(0);
        for (int i = 0; i < sheet.getPhysicalNumberOfRows(); i++) {
            Row currentRow = sheet.getRow(i);
            HashMap<String, String> mapDatas = new
HashMap<String, String>();
            for (int j = 0; j <
headerRow.getPhysicalNumberOfCells(); j++) {
                Cell currentCell = currentRow.getCell(j);

                switch (currentCell.getCellType()) {
                    case Cell.CELL_TYPE_STRING:

mapDatas.put(headerRow.getCell(j).getStringCellValue(),

currentCell.getStringCellValue());
                    break;
                    case Cell.CELL_TYPE_NUMERIC:

```

```

        mapDatas.put(headerRow.getCell(j).getStringCellValue(),
                        String.valueOf(currentCell
                                .getNumericCellValue()));

                                break;
                        }
                }

                mapDatasList.add(mapDatas);
        }

        } catch (Throwable e) {
            e.printStackTrace();
        }
        return mapDatasList;
    }

    public static List<Employee> retrieveValueFromDataBase() {
        ResultSet rs = null;
        List<Employee> emp = new ArrayList<Employee>();
        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection con = DriverManager.getConnection(
                "jdbc:mysql://127.0.0.1:3306/selenium_schema",
                "root", "");
            PreparedStatement ps = con
                .prepareStatement("SELECT * FROM
selenium_schema.emp_table where roll=3;");

            rs = ps.executeQuery();

            while (rs.next()) {
                Employee e = new Employee();
                e.setName(rs.getString("name"));
                e.setPassword(rs.getString("password"));
                emp.add(e);
            }
        } catch (ClassNotFoundException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        } catch (SQLException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
        return emp;
    }
}

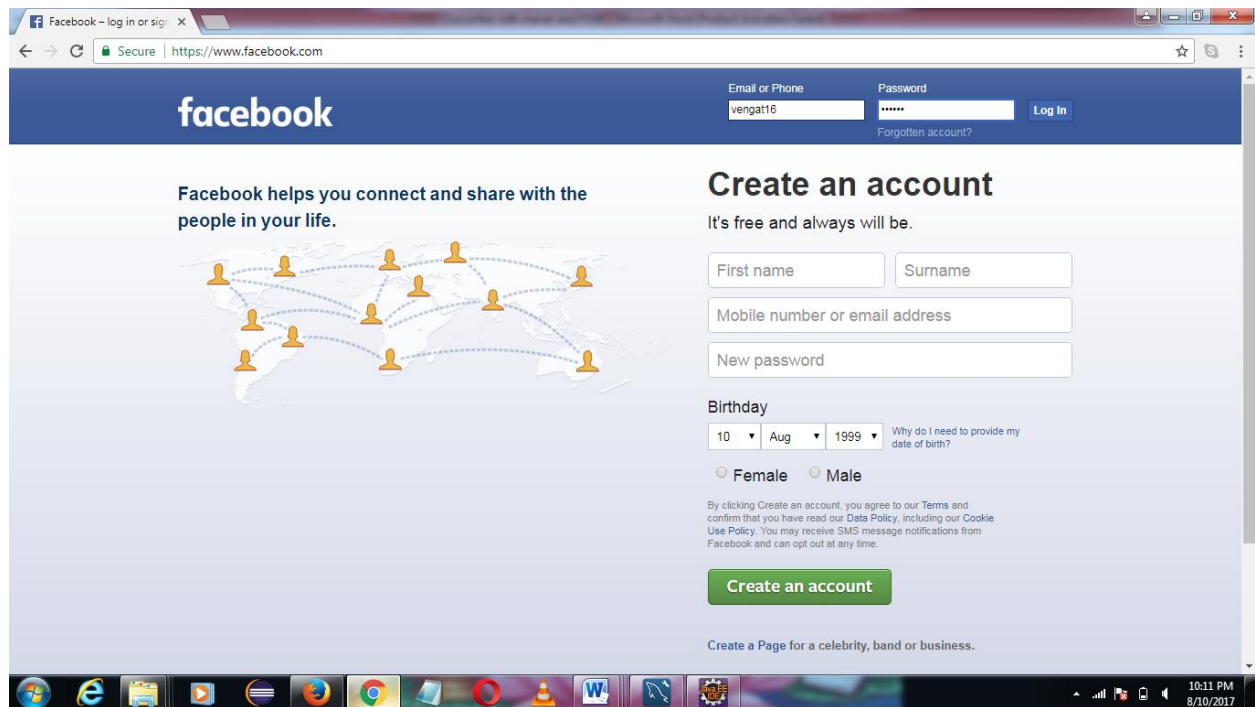
```

Test runner class:

```
@RunWith(Cucumber.class)
@CucumberOptions(features = "Features", glue = "steps")
public class TestRunner {

}
```

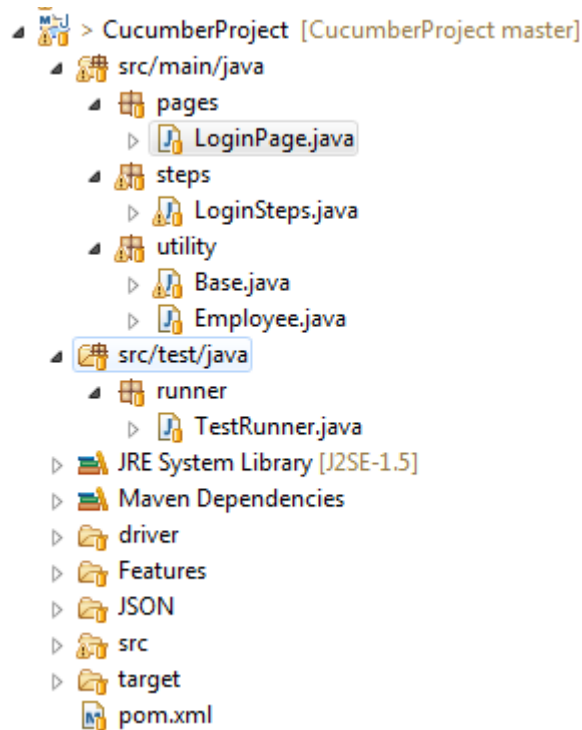
Output:



Cucumber with POM and data base:

- In this method, we taken all the input data's from data base

Framework structure:



Step definition:

```
public class LoginSteps extends Base {
    WebDriver driver;
    LoginPage loginPage;

    @Given("^User is on facebook Page$")
    public void user_is_on_Home_Page() {
        driver = getDriver();
    }

    @When("^User enters \"([^\"]*)\", \"([^\"]*)\" and click the login button$")
    public void user_enters_and_click_the_login_button(String userName,
        String Password) throws SQLException {
        loginPage = new LoginPage();
        List<Employee> emp = retrieveValueFromDataBase();

        setText(loginPage.getTxtUserName(), emp.get(0).getName());
        setText(loginPage.getTxtPassword(), emp.get(0).getPassword());
        clickBtn(loginPage.getBtnLogin());
    }
}
```

```

    }

    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {

        driver.quit();

    }

}

```

POM class:

```

public class LoginPage extends Base {

    @FindBy(id = "email")
    private WebElement txtUserName;

    @FindBy(id = "pass")
    private WebElement txtPassword;

    @FindBy(xpath = "//*[text()='Log In']")
    private WebElement btnLogin;

    @FindBy(xpath = "//a[@title='Go to Facebook home']")
    private WebElement imgFbLogo;

    public WebElement getImgFbLogo() {
        return imgFbLogo;
    }

    public void setImgFbLogo(WebElement imgFbLogo) {
        this.imgFbLogo = imgFbLogo;
    }

    public void setTxtUserName(WebElement txtUserName) {
        this.txtUserName = txtUserName;
    }

    public void setTxtPassword(WebElement txtPassword) {
        this.txtPassword = txtPassword;
    }

    public LoginPage() {
        PageFactory.initElements(driver, this);
    }

}

```

```

public WebElement getTxtUserName() {
    return txtUserName;
}

public WebElement getTxtPassword() {
    return txtPassword;
}

public void setTxtPassword(String txtPassword) {
    this.txtPassword.sendKeys(txtPassword);
}

public WebElement getBtnLogin() {
    return btnLogin;
}

public void setBtnLogin(WebElement btnLogin) {
    this.btnLogin = btnLogin;
}
}

```

Utility package:

Base:

```

public class Base {
    public static WebDriver driver;
    static WebDriverWait wait;
    static File f1 = new File("./JSON/Configuration.json");

    public static WebDriver getDriver() {
        JSONObject jsonObject = JSONReadFromFile();
        String browser = (String) jsonObject.get("browser");

        File f = new File("./driver");
        if (browser.equals("chrome")) {
            System.setProperty("webdriver.chrome.driver",
f.getAbsolutePath()
                                + "/chromedriver.exe");
            driver = new ChromeDriver();

        } else if (browser.equals("firefox")) {
            System.setProperty("webdriver.gecko.driver",
f.getAbsolutePath()
                                + "/geckodriver.exe");
            driver = new FirefoxDriver();

        } else if (browser.equals("ie")) {

```



```

        System.setProperty("webdriver.ie.driver",
f.getAbsolutePath()
            + "/IEDriverServer.exe");
        driver = new InternetExplorerDriver();

    }

    driver.manage().window().maximize();
    driver.get((String) jsonObject.get("url"));
    return driver;
}

public static boolean elementToBeVisible(WebDriver driver, int time,
    WebElement element) {
    boolean flag = false;
    try {
        wait = new WebDriverWait(driver, time);
        wait.until(ExpectedConditions.visibilityOf(element));
        flag = true;
    } catch (Exception e) {
        e.printStackTrace();
    }
    return flag;
}

public static boolean alertIsPresent(WebDriver driver, int time) {
    boolean flag = false;
    try {
        wait = new WebDriverWait(driver, time);
        wait.until(ExpectedConditions.alertIsPresent());
        flag = true;
    } catch (Exception e) {
        e.printStackTrace();
    }
    return flag;
}

public static boolean elementToBeClickable(WebDriver driver, int time,
    WebElement element) {
    boolean flag = false;
    try {
        wait = new WebDriverWait(driver, time);

wait.until(ExpectedConditions.elementToBeClickable(element));
        flag = true;
    } catch (Exception e) {
        e.printStackTrace();
    }
    return flag;
}

```

```

    public static boolean elementFound(WebDriver driver, int time,
        WebElement element) {
        boolean res = false;
        driver.manage().timeouts().implicitlyWait(time,
TimeUnit.SECONDS);
        try {

            res = element.isDisplayed();
        } catch (Exception e) {
            e.printStackTrace();

        }
        return res;
    }

    public static boolean elementFound(WebElement element) {
        boolean res = false;
        try {
            res = element.isDisplayed();
        } catch (Exception e) {
            e.printStackTrace();

        }
        return res;
    }

    public static void setText(WebElement element, String name) {
        if (name != null && elementFound(element)) {
            element.clear();
            element.sendKeys(name);
        }
    }

    public static String getText(WebElement element) {
        String name = null;
        if (elementFound(element)) {
            name = element.getAttribute("value");
        }
        return name;
    }

    public static void clickBtn(WebElement element) {
        if (elementFound(element)) {
            element.click();
        }
    }
}

```

```

    public static JSONObject JSONReadFromFile() {
        JSONParser parser = new JSONParser();
        JSONObject jsonObject = null;
        try {

            Object obj = parser.parse(new
FileReader(f1.getAbsolutePath()));

            jsonObject = (JSONObject) obj;

        } catch (Exception e) {
            e.printStackTrace();
        }
        return jsonObject;
    }

    public static void getScreenShot(String screenShotFileName) {
        File screenShotLocation = new File("./screenshot/" +
screenShotFileName
            + ".png");
        TakesScreenshot screenshot = (TakesScreenshot) driver;
        File file = screenshot.getScreenshotAs(OutputType.FILE);
        try {
            FileUtils.copyFile(file, screenShotLocation);
        } catch (IOException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
    }

    public static void uploadFiles(File path) {
        try {
            Robot robot = new Robot();
            robot.setAutoDelay(3000);
            StringSelection selection = new StringSelection(
                path.getAbsolutePath());
            Toolkit.getDefaultToolkit().getSystemClipboard().
                setContents(selection, null);
            // press control+v
            robot.keyPress(KeyEvent.VK_CONTROL);
            robot.keyPress(KeyEvent.VK_V);
            robot.setAutoDelay(3000);
            // release control+v
            robot.keyRelease(KeyEvent.VK_CONTROL);
            robot.keyRelease(KeyEvent.VK_V);
            // press enter
            robot.setAutoDelay(3000);
            robot.keyPress(KeyEvent.VK_ENTER);
            robot.keyRelease(KeyEvent.VK_ENTER);
        }
    }

```

```

    } catch (AWTException e) {
        // TODO Auto-generated catch block
        e.printStackTrace();
    }
}

public static List<HashMap<String, String>> readValueFromExcelSheet() {
    List<HashMap<String, String>> mapDatasList = new ArrayList();
    try {
        File excelLocaltion = new File("./Excel/Facebook.xlsx");

        String sheetName = "Datas";

        FileInputStream f = new FileInputStream(
            excelLocaltion.getAbsolutePath());
        Workbook w = new XSSFWorkbook(f);
        Sheet sheet = w.getSheet(sheetName);
        Row headerRow = sheet.getRow(0);
        for (int i = 0; i < sheet.getPhysicalNumberOfRows(); i++) {
            Row currentRow = sheet.getRow(i);
            HashMap<String, String> mapDatas = new
HashMap<String, String>();
            for (int j = 0; j <
headerRow.getPhysicalNumberOfCells(); j++) {
                Cell currentCell = currentRow.getCell(j);

                switch (currentCell.getCellType()) {
                    case Cell.CELL_TYPE_STRING:

mapDatas.put(headerRow.getCell(j).getStringCellValue(),

currentCell.getStringCellValue());
                    break;
                    case Cell.CELL_TYPE_NUMERIC:

mapDatas.put(headerRow.getCell(j).getStringCellValue(),
                    String.valueOf(currentCell

.getNumericCellValue()));

                    break;

                }
            }

            mapDatasList.add(mapDatas);
        }
    } catch (Throwable e) {

```

```

        e.printStackTrace();
    }
    return mapDatasList;
}

public static List<Employee> retrieveValueFromDataBase() {
    ResultSet rs = null;
    List<Employee> emp = new ArrayList<Employee>();
    try {
        Class.forName("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection(
            "jdbc:mysql://127.0.0.1:3306/selenium_schema",
            "root", "");
        PreparedStatement ps = con
            .prepareStatement("SELECT * FROM
selenium_schema.emp_table where roll=3;");

        rs = ps.executeQuery();

        while (rs.next()) {
            Employee e = new Employee();
            e.setName(rs.getString("name"));
            e.setPassword(rs.getString("password"));
            emp.add(e);
        }
    } catch (ClassNotFoundException e) {
        // TODO Auto-generated catch block
        e.printStackTrace();
    } catch (SQLException e) {
        // TODO Auto-generated catch block
        e.printStackTrace();
    }
    return emp;
}
}

```

Employee:

```

public class Employee {
    private String name;
    private String password;

    public String getName() {
        return name;
    }
}

```

```

    public void setName(String name) {
        this.name = name;
    }

    public String getPassword() {
        return password;
    }

    public void setPassword(String password) {
        this.password = password;
    }
}

```

Test runner class:

```

@RunWith(Cucumber.class)
@CucumberOptions(features = "Features", glue = "steps")
public class TestRunner {

}

```

Feature file:

Scenario Outline: Successful Login with Valid Credentials

Given User is on facebook Page

When User enters "<userName>","<password>" and click the login button

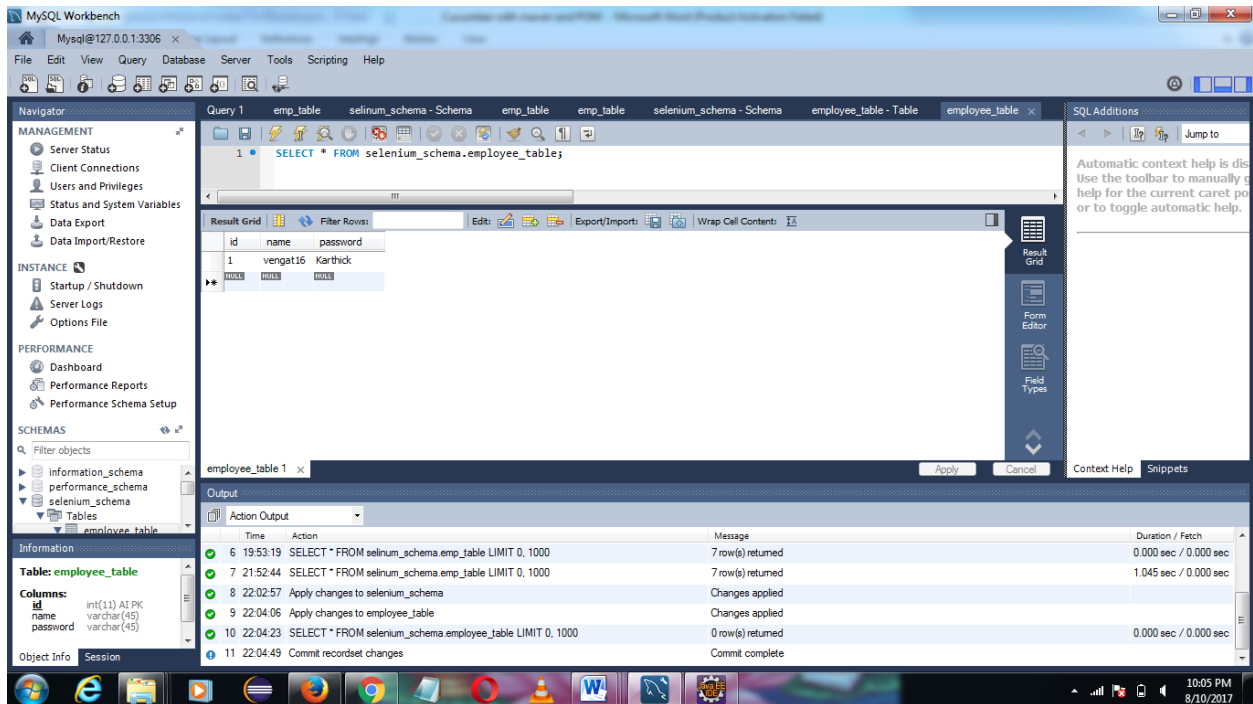
Then Message displayed Login Successfully

Examples:

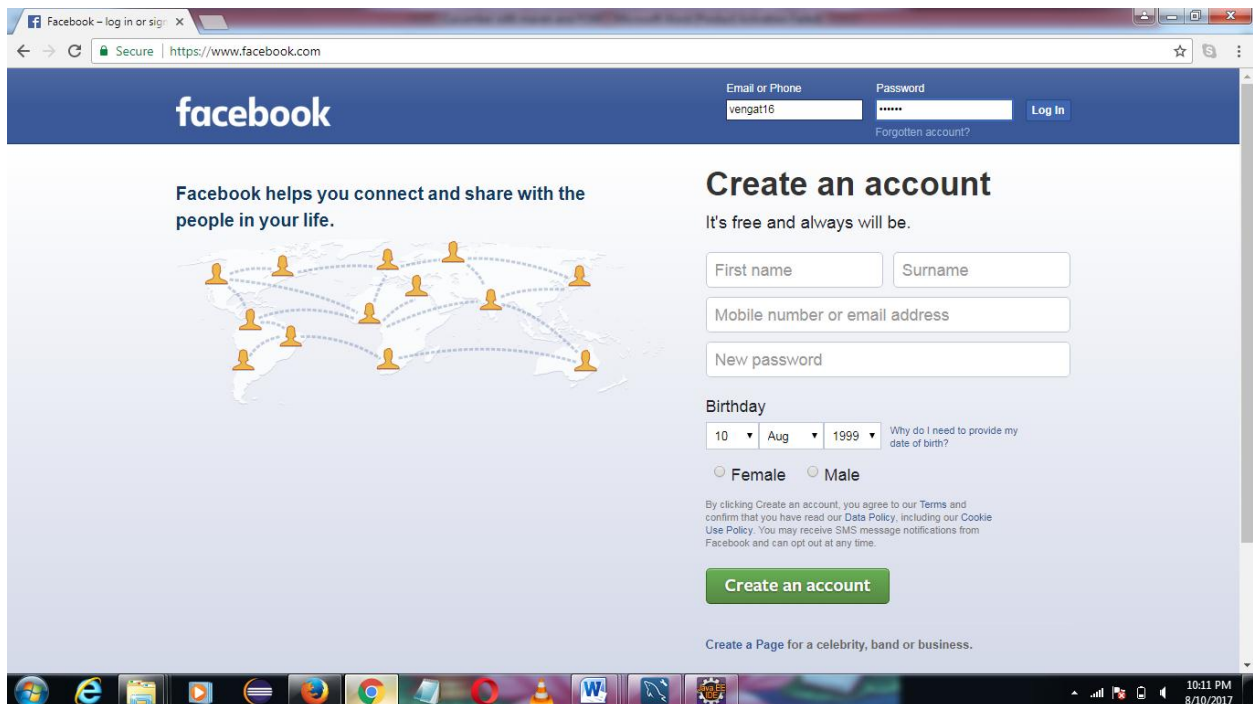
	userName		password	
	ganesh		Java65	

Input data:

- This is a input data from data base



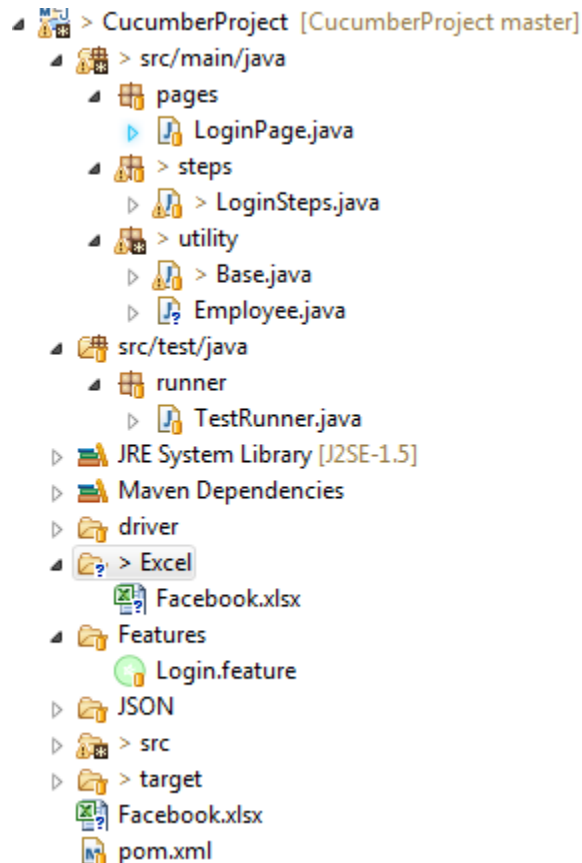
Output :



Cucumber with POM and Data driven:

- Here we use data driven to read the input data's from excel sheet

Framework structure:



- Here one excel folder will added and in this folder have one excel sheet contains all the input datas

POM class:

```
public class LoginPage extends Base {

    @FindBy(id = "email")
    private WebElement txtUserName;

    @FindBy(id = "pass")
    private WebElement txtPassword;

    @FindBy(xpath = "//*[@text()='Log In']")
    private WebElement btnLogin;
```



```
@FindBy(xpath = "//a[@title='Go to Facebook home']")
private WebElement imgFbLogo;

public WebElement getImgFbLogo() {
    return imgFbLogo;
}

public void setImgFbLogo(WebElement imgFbLogo) {
    this.imgFbLogo = imgFbLogo;
}

public void setTxtUserName(WebElement txtUserName) {
    this.txtUserName = txtUserName;
}

public void setTxtPassword(WebElement txtPassword) {
    this.txtPassword = txtPassword;
}

public LoginPage() {
    PageFactory.initElements(driver, this);
}

public WebElement getTxtUserName() {
    return txtUserName;
}

public WebElement getTxtPassword() {
    return txtPassword;
}

public void setTxtPassword(String txtPassword) {
    this.txtPassword.sendKeys(txtPassword);
}

public WebElement getBtnLogin() {
    return btnLogin;
}

public void setBtnLogin(WebElement btnLogin) {
    this.btnLogin = btnLogin;
}
}
```

Utility package:

Base class:

```
public class Base {
    public static WebDriver driver;
    static WebDriverWait wait;
    static File f1 = new File("./JSON/Configuration.json");

    public static WebDriver getDriver() {
        JSONObject jsonObject = JSONReadFromFile();
        String browser = (String) jsonObject.get("browser");

        File f = new File("./driver");
        if (browser.equals("chrome")) {
            System.setProperty("webdriver.chrome.driver",
f.getAbsolutePath()
                + "/chromedriver.exe");
            driver = new ChromeDriver();

        } else if (browser.equals("firefox")) {
            System.setProperty("webdriver.gecko.driver",
f.getAbsolutePath()
                + "/geckodriver.exe");
            driver = new FirefoxDriver();

        } else if (browser.equals("ie")) {
            System.setProperty("webdriver.ie.driver",
f.getAbsolutePath()
                + "/IEDriverServer.exe");
            driver = new InternetExplorerDriver();

        }

        driver.manage().window().maximize();
        driver.get((String) jsonObject.get("url"));
        return driver;
    }

    public static boolean elementToBeVisible(WebDriver driver, int time,
        WebElement element) {
        boolean flag = false;
        try {
            wait = new WebDriverWait(driver, time);
            wait.until(ExpectedConditions.visibilityOf(element));
            flag = true;
        } catch (Exception e) {
            e.printStackTrace();
        }
        return flag;
    }
}
```

```

    }

    public static boolean alertIsPresent(WebDriver driver, int time) {
        boolean flag = false;
        try {
            wait = new WebDriverWait(driver, time);
            wait.until(ExpectedConditions.alertIsPresent());
            flag = true;
        } catch (Exception e) {
            e.printStackTrace();
        }
        return flag;
    }

    public static boolean elementToBeClickable(WebDriver driver, int time,
        WebElement element) {
        boolean flag = false;
        try {
            wait = new WebDriverWait(driver, time);

            wait.until(ExpectedConditions.elementToBeClickable(element));
            flag = true;
        } catch (Exception e) {
            e.printStackTrace();
        }
        return flag;
    }

    public static boolean elementFound(WebDriver driver, int time,
        WebElement element) {
        boolean res = false;
        driver.manage().timeouts().implicitlyWait(time,
TimeUnit.SECONDS);
        try {

            res = element.isDisplayed();
        } catch (Exception e) {
            e.printStackTrace();

        }
        return res;
    }

    public static boolean elementFound(WebElement element) {
        boolean res = false;
        try {
            res = element.isDisplayed();
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

```

```

    }
    return res;
}

public static void setText(WebElement element, String name) {
    if (name != null && elementFound(element)) {
        element.clear();
        element.sendKeys(name);
    }
}

public static String getText(WebElement element) {
    String name = null;
    if (elementFound(element)) {
        name = element.getAttribute("value");
    }
    return name;
}

public static void clickBtn(WebElement element) {
    if (elementFound(element)) {
        element.click();
    }
}

public static JSONObject JSONReadFromFile() {
    JSONParser parser = new JSONParser();
    JSONObject jsonObject = null;
    try {
        Object obj = parser.parse(new
FileReader(f1.getAbsolutePath()));

        jsonObject = (JSONObject) obj;

    } catch (Exception e) {
        e.printStackTrace();
    }
    return jsonObject;
}

public static void getScreenShot(String screenShotFileName) {
    File screenShotLocation = new File("./screenshot/" +
screenShotFileName
        + ".png");
    TakesScreenshot screenshot = (TakesScreenshot) driver;
    File file = screenshot.getScreenshotAs(OutputType.FILE);
    try {

```

```

        FileUtils.copyFile(file, screenshotLocation);
    } catch (IOException e) {
        // TODO Auto-generated catch block
        e.printStackTrace();
    }
}

public static void uploadFiles(File path) {
    try {
        Robot robot = new Robot();
        robot.setAutoDelay(3000);
        StringSelection selection = new StringSelection(
            path.getAbsolutePath());
        Toolkit.getDefaultToolkit().getSystemClipboard()
            .setContents(selection, null);
        // press control+v
        robot.keyPress(KeyEvent.VK_CONTROL);
        robot.keyPress(KeyEvent.VK_V);
        robot.setAutoDelay(3000);
        // release control+v
        robot.keyRelease(KeyEvent.VK_CONTROL);
        robot.keyRelease(KeyEvent.VK_V);
        // press enter
        robot.setAutoDelay(3000);
        robot.keyPress(KeyEvent.VK_ENTER);
        robot.keyRelease(KeyEvent.VK_ENTER);

    } catch (AWTException e) {
        // TODO Auto-generated catch block
        e.printStackTrace();
    }
}

public static List<HashMap<String, String>> readValueFromExcelSheet() {
    List<HashMap<String, String>> mapDatasList = new ArrayList();
    try {
        File excelLocation = new File("./Excel/Facebook.xlsx");

        String sheetName = "Face";

        FileInputStream f = new FileInputStream(
            excelLocation.getAbsolutePath());
        Workbook w = new XSSFWorkbook(f);
        Sheet sheet = w.getSheet(sheetName);
        Row headerRow = sheet.getRow(0);
        for (int i = 0; i < sheet.getPhysicalNumberOfRows(); i++) {
            Row currentRow = sheet.getRow(i);
            HashMap<String, String> mapDatas = new
HashMap<String, String>();

```

```

        for (int j = 0; j <
headerRow.getPhysicalNumberOfCells(); j++) {
            Cell currentCell = currentRow.getCell(j);

            switch (currentCell.getCellType()) {
                case Cell.CELL_TYPE_STRING:

mapDatas.put(headerRow.getCell(j).getStringCellValue(),

currentCell.getStringCellValue());
                    break;
                case Cell.CELL_TYPE_NUMERIC:

mapDatas.put(headerRow.getCell(j).getStringCellValue(),
                    String.valueOf(currentCell

.getNumericCellValue()));

                    break;
            }
        }

        mapDatasList.add(mapDatas);
    }

} catch (Throwable e) {
    e.printStackTrace();
}
return mapDatasList;
}

public static List<Employee> retrieveValueFromDataBase() {
    ResultSet rs = null;
    List<Employee> emp = new ArrayList<Employee>();
    try {
        Class.forName("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection(
            "jdbc:mysql://127.0.0.1:3306/selenium_schema",
"root", "");
        PreparedStatement ps = con
            .prepareStatement("SELECT * FROM
selenium_schema.emp_table where roll=3;");

        rs = ps.executeQuery();

        while (rs.next()) {
            Employee e = new Employee();
            e.setName(rs.getString("name"));

```

```

        e.setPassword(rs.getString("password"));
        emp.add(e);
    }
} catch (ClassNotFoundException e) {
    // TODO Auto-generated catch block
    e.printStackTrace();
} catch (SQLException e) {
    // TODO Auto-generated catch block
    e.printStackTrace();
}
return emp;
}
}

```

Test runner class:

```

@RunWith(Cucumber.class)
@CucumberOptions(features = "Features", glue = "steps")
public class TestRunner {

}

```

Feature file:

Scenario Outline: Successful Login with Valid Credentials

Given User is on facebook Page

When User enters "<userName>","<password>" and click the login button

Then Message displayed Login Successfully

Examples:

userName	password
ganesh	Java65

Step definition file:

```

public class LoginSteps extends Base {
    WebDriver driver;
    LoginPage loginPage;

    @Given("^User is on facebook Page$")
    public void user_is_on_Home_Page() {
        driver = getDriver();
    }
}

```

```
@When("^User enters \"([^\"]*)\", \"([^\"]*)\" and click the login button$")
    public void user_enters_and_click_the_login_button(String userName,
        String Password) {
        LoginPage = new LoginPage();

        setText(loginPage.getTxtUserName(), readValueFromExcelSheet().get(1)
            .get("Username"));

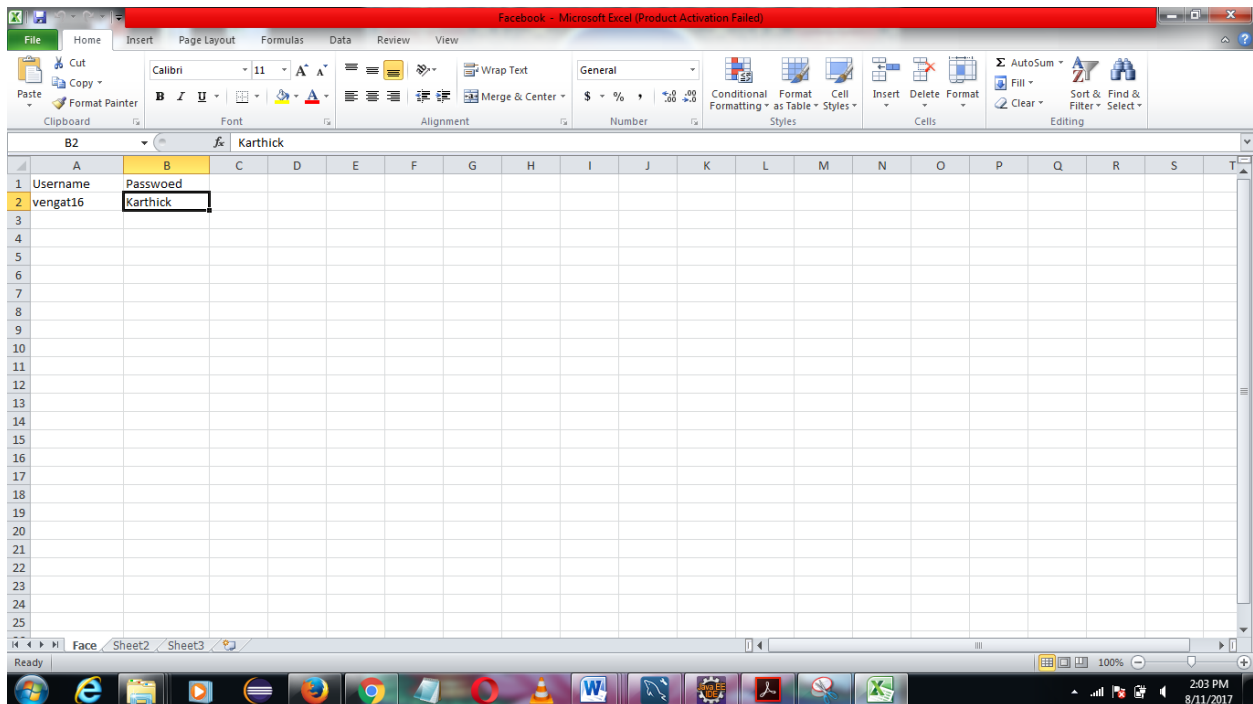
        setText(loginPage.getTxtPassword(), readValueFromExcelSheet().get(1)
            .get("Password"));

        clickBtn(loginPage.getBtnLogin());
    }

    @Then("^Message displayed Login Successfully$")
    public void message_displayed_Login_Successfully() {

        driver.quit();
    }
}
```

Excel input:



Output :

