

Run your Feature Files in Parallel Mode using Maven FailSafe Plugin

Cucumber can be executed in parallel using **JUnit** and **Maven test execution plugins**.

In JUnit the **feature files are run in parallel rather than scenarios**, which means **all the scenarios in a feature file will be executed by the same thread**.

You can use either Maven Surefire or Failsafe plugin to execute the runners.

JUnit has the above limitation, in junit - feature files run in parallel and not scenarios.

Second problem is cross browser testing. We may have to maintain different packages for testing same feature on different browsers.

Add the compiler plugin to achieve maven lifecycle commands-

```

104
105     <plugin>
106         <groupId>org.apache.maven.plugins</groupId>
107         <artifactId>maven-compiler-plugin</artifactId>
108         <version>${maven.compiler.version}</version>
109         <configuration>
110             <encoding>UTF-8</encoding>
111             <source>${java.version}</source>
112             <target>${java.version}</target>
113         </configuration>
114     </plugin>
115
116     <plugin>
117         <groupId>org.apache.maven.plugins</groupId>
118         <artifactId>maven-surefire-plugin</artifactId>
119         <version>${maven.surefire.version}</version>
120         <configuration>

```

Third is maven fail safe plugin-

We can write any value for the goal field as per our convenience.

Jumbo plugin which needs to be added-

```

128
129     <plugin>
130         <groupId>org.apache.maven.plugins</groupId>
131         <artifactId>maven-failsafe-plugin</artifactId>
132         <version>3.0.0-M3</version>
133     </plugin>
134     <execution>
135         <goals>
136             <goal>integration-test</goal>
137         </goals>
138     </execution>
139     <configuration>
140         <!-- UNCOMMENT - To add any exclusions if required -->
141         <!-- <excludes> <exclude>*/IT*.java</exclude> </excludes> -->
142         <!-- UNCOMMENT BELOW LINE - To execute feature files with a single runner -->
143         <!--give path of runner in the below step -->
144         <include>*/MyTestRunner.java</include>
145         <!-- UNCOMMENT BELOW LINE - To execute feature files with multiple runners -->
146         <!-- <include>*/Runner.java</include> -->
147     </includes>
148     <!-- UNCOMMENT BELOW 3 LINES - To execute using parallel or combination
149         option -->
150     <!-- we can write parallel with classes also.-->
151     <parallel>methods</parallel>
152     <threadCount>4</threadCount>
153     <perCoreThreadCount>true</perCoreThreadCount>
154     <!-- UNCOMMENT BELOW 3 LINES - To execute using forking or combination option -->
155     <!-- <forkCount>2</forkCount> <reuseForks>true</reuseForks>
156     <reportsDirectory>${project.build.directory}/failsafe-reports_${surefire.forkNumber}</reportsDirectory>-->
157 </configuration>
158 </execution>
159 </executions>
160 </plugin>
161

```

Open cmd and go to the project location. use the below code and hit enter.

```
E:\Naveen Java Training\Cucumber\CucumberPomSeriesByKaranJulySevenA>mvn verify|
```

Build success-

```

Command Prompt
? https://reports.cucumber.io/reports/e6b1851d-3999-4d6d-98a0-ec4d63b11bf8 ?
?
? This report will self-destruct in 24h.
? Keep reports forever: https://reports.cucumber.io/profile
????????????????????????????????????????????????????????????????????????????????????????[INFO] Tests
Skipped: 0, Time elapsed: 62.234 s - in com.myTestRunner.MyTestRunner
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 0, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 01:11 min
[INFO] Finished at: 2023-07-07T22:54:24+02:00
[INFO]
[WARNING]
[WARNING] Plugin validation issues were detected in 4 plugin(s)

```

Open report-

The screenshot shows a web browser displaying a Cucumber Reports page. The URL is <https://reports.cucumber.io/reports/e6b1851d-3999-4d6d-98a0-ec4d63b11bf8>. The page has a dark blue header with the Cucumber Reports logo and a 'Log in with GitHub' button. Below the header, a yellow warning banner states: 'This report will self-destruct in a day. Keep your future reports forever.' The main content area features a summary table with three columns: '80% passed' (5 executed), '2 minutes ago' (Last Run), and '55.34 seconds' (Duration). Below this, there are three rows of details: 'Windows 10', 'Java HotSpot(TM) 64-Bit Server VM 25.202-b08', and 'cucumber-jvm 6.9.0'. A red 'Delete Report' button is located at the bottom right.

4 PASSED 1 FAILED		
80% passed 5 executed	2 minutes ago Last Run	55.34 seconds Duration
Windows 10	Java HotSpot(TM) 64-Bit Server VM 25.202-b08	cucumber-jvm 6.9.0

[Delete Report](#)

For failed case we get screenshot-

The screenshot shows a failed Cucumber test case. The error message is: 'at org.openqa.selenium.By\$ByLinkText.findElement(By.java:220) at org.openqa.selenium.remote.RemoteWebDriver.findElement(RemoteWebDriver.java:315) at com.pages.LoginPageObject.isForgotPasswordLinkPresent(LoginPageObject.java:35) at stepDefinitions.LoginPageSteps.forgot_your_password_link_should_be_displayed(LoginPageSteps.java:42) at ?.forgot your password link should be displayed(file:///E:/Naveen%20Java%20Training/Cucumber/CucumberPomSeriesByKaranJulySevenA/src/test/resources/appFeatures/LoginPage.feature:10)'. Below the error message, there is a section titled 'Attached Image' which displays a screenshot of a web page. The web page has a black header with 'SALE 70% OFF ALL PRODUCTS' and 'GET SAVINGS NOW'. Below the header, there is a search bar, a cart icon, and a navigation menu with 'WOMEN', 'DRESSES', 'T-SHIRTS', and 'BLOG'. The main content area is titled 'AUTHENTICATION' and contains two forms: 'CREATE AN ACCOUNT' and 'ALREADY REGISTERED?'. The 'CREATE AN ACCOUNT' form has a text input for 'Email address'. The 'ALREADY REGISTERED?' form has text inputs for 'Email address' and 'Password'. At the bottom of the page, there is a dark blue footer with the text: 'By using to browse, you consent to our use of cookies. To know more, please refer to our Privacy Policy.' and an 'OK' button.

at org.openqa.selenium.By\$ByLinkText.findElement(By.java:220)
at org.openqa.selenium.remote.RemoteWebDriver.findElement(RemoteWebDriver.java:315)
at com.pages.LoginPageObject.isForgotPasswordLinkPresent(LoginPageObject.java:35)
at stepDefinitions.LoginPageSteps.forgot_your_password_link_should_be_displayed(LoginPageSteps.java:42)
at ?.forgot your password link should be displayed(file:///E:/Naveen%20Java%20Training/Cucumber/CucumberPomSeriesByKaranJulySevenA/src/test/resources/appFeatures/LoginPage.feature:10)

▼ Attached Image

SALE 70% OFF ALL PRODUCTS GET SAVINGS NOW

Call us now: 0123-456-789 Contact us Sign in

Your Logo a new experience

Search

Cart (empty)

WOMEN DRESSES T-SHIRTS BLOG

Authentication

AUTHENTICATION

CREATE AN ACCOUNT

Please enter your email address to create an account.

Email address

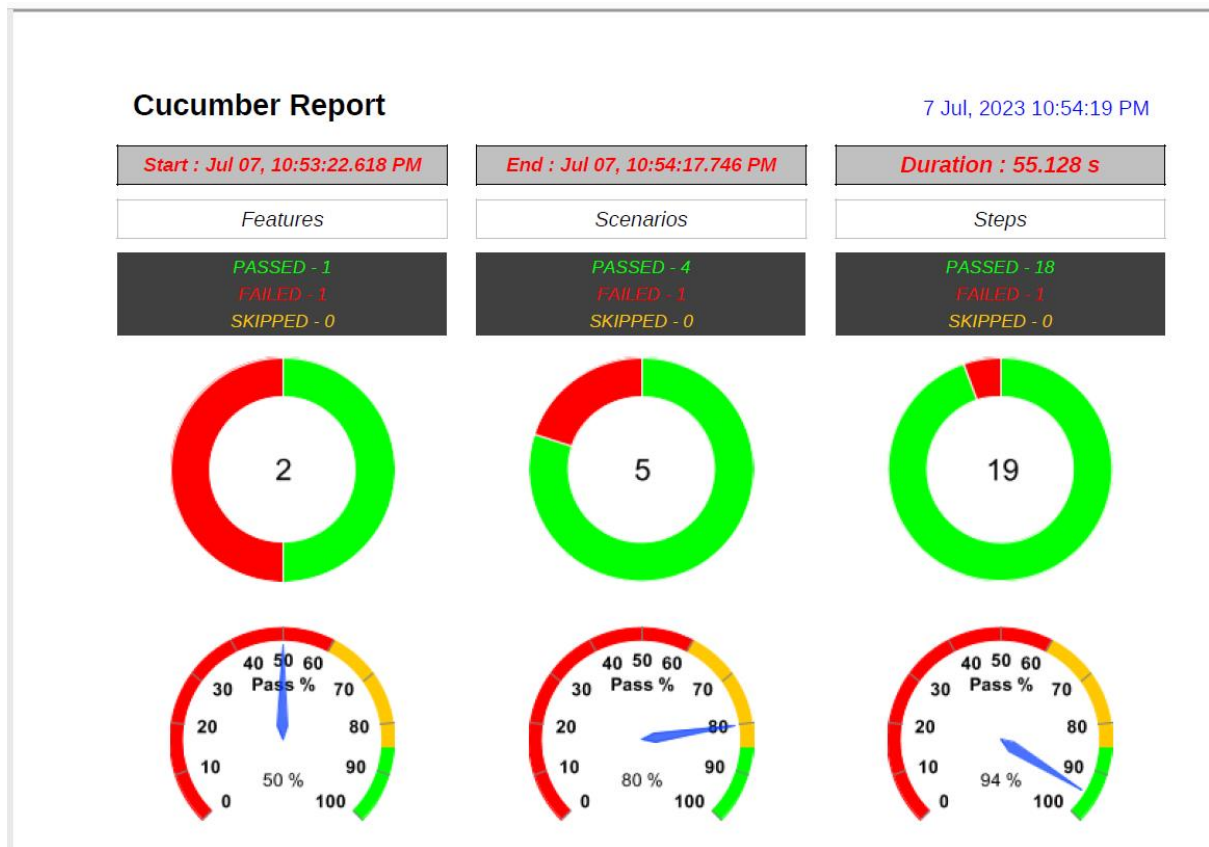
ALREADY REGISTERED?

Email address

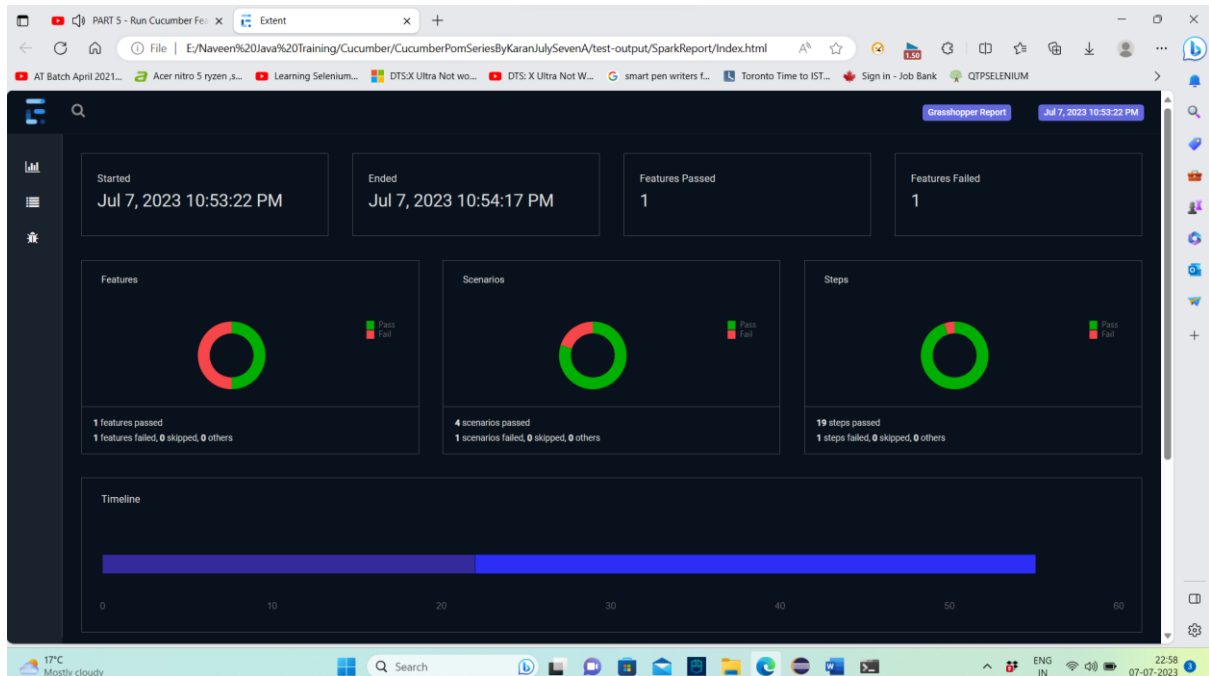
Password

By using to browse, you consent to our use of cookies. To know more, please refer to our Privacy Policy. OK

Pdf report-



Index file also fine-



Lets see the run with thread –

```

MyTestRunner.java x
1 package com.myTestRunner;
2
3 import org.junit.runner.RunWith;
4
5
6
7 @RunWith(Cucumber.class)
8 @CucumberOptions(
9     features = { "src/test/resources/appFeatures/" },
10    glue = { "stepDefinitions", "appHooks" },
11    //this adapter needed for the new extent reports.
12    //we can generate timeline html reports for threads using timeline plugin. we can know how many threads participated.
13    //we can see what threads present in a pool, which threads executed which scenario.
14    //we can give name for timeline .. this is the folder which will be created once test runs.
15    plugin = { "pretty",
16              "com.aventstack.extentreports.cucumber.adapter.ExtentCucumberAdapter:",
17              "timeline:test-output-thread/" }
18 )
19
20
21
22 public class MyTestRunner {
23
24 }

```

Run using mvn verify-

Don't use mvn clean install.

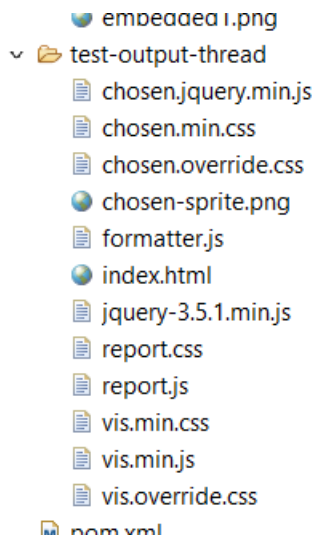
```

https://reports.cucumber.io/reports/04d12439-8c9d-4cc2-8463-9dc77e20c442
?
? This report will self-destruct in 24h.
? Keep reports forever: https://reports.cucumber.io/profile
?
????????????????????????????????????????????????????????????????????????????????????[INFO] Tests
- in com.myTestRunner.MyTestRunner
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 0, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 01:04 min
[INFO] Finished at: 2023-07-08T07:37:39+02:00
[INFO]
[WARNING]
[WARNING] Plugin validation issues were detected in 4 plugin(s)
[WARNING]
[WARNING] * org.apache.maven.plugins:maven-compiler-plugin:3.8.1
[WARNING]

```

Refresh project.

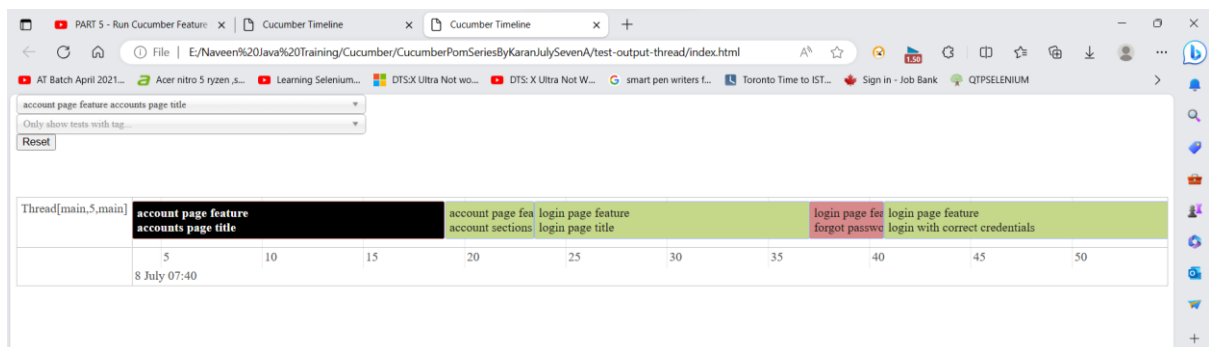
We get new folder here.



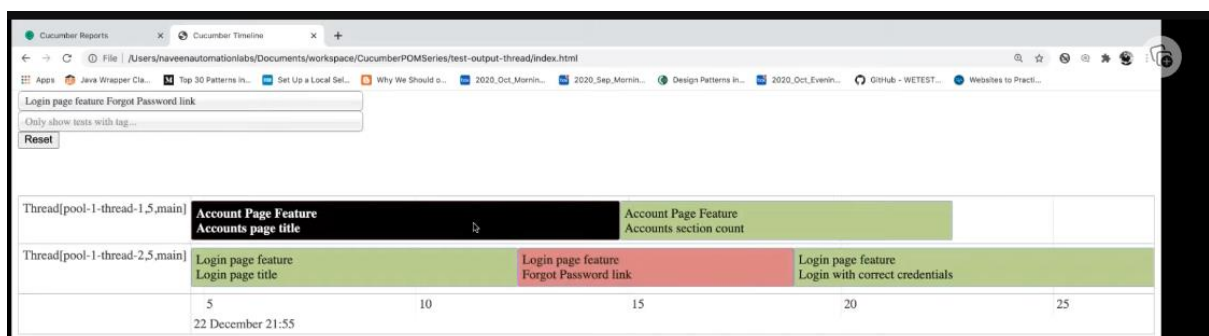
Open index.html.

We get such type of output.

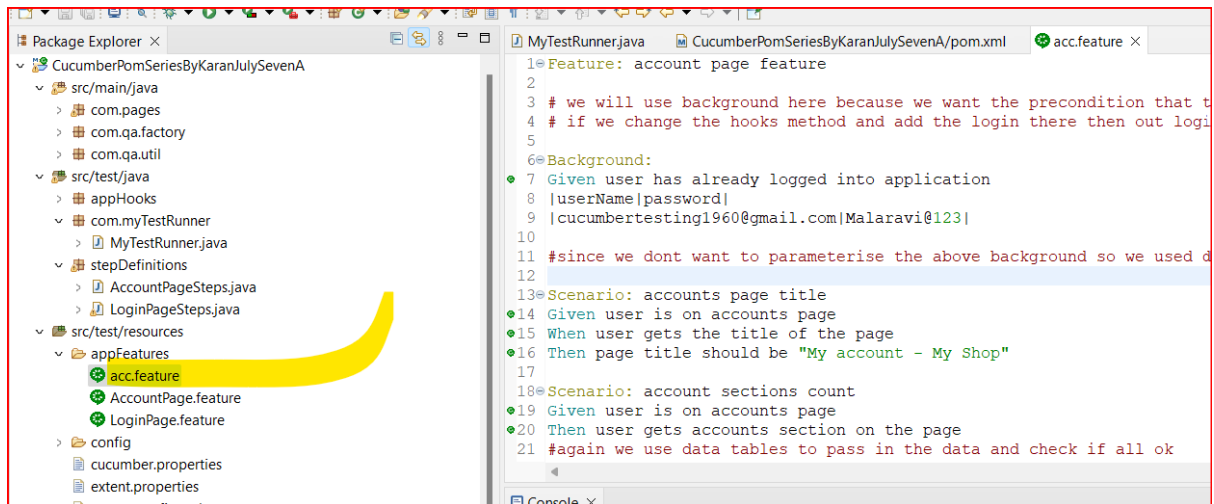
Mine is not coming properly, for Naveen it works.



See naveens output-



Lets increase one more feature file and see if thread count increases-



Output-

Thread	Scenario	Time	Date
main_5_main	account page feature accounts page title	20	8 July 07:51
	account page feature account sections count	25	
	account page feature accounts page title	30	
	account page feature account sections count	35	
	login page feature login page title	40	
	login page feature forgot password link	45	
	login page feature login with correct credentials	50	
	login page feature forgot password link	55	
	login page feature login with correct credentials	0	8 July 07:52
	account page feature accounts page title	5	
	account page feature account sections count	10	
	account page feature accounts page title	15	
	account page feature account sections count	20	
	account page feature accounts page title	25	

Cucumber report-

Cucumber Reports

Log in with GitHub

This report will self-destruct in a day. Keep your future reports forever.

6 PASSED			1 FAILED
86% passed 7 executed	4 minutes ago Last Run	1 minute, 10.13 seconds Duration	
 Windows 10	 Java HotSpot(TM) 64-Bit Server VM 25.202-b08	 cucumber-jvm 6.9.0	

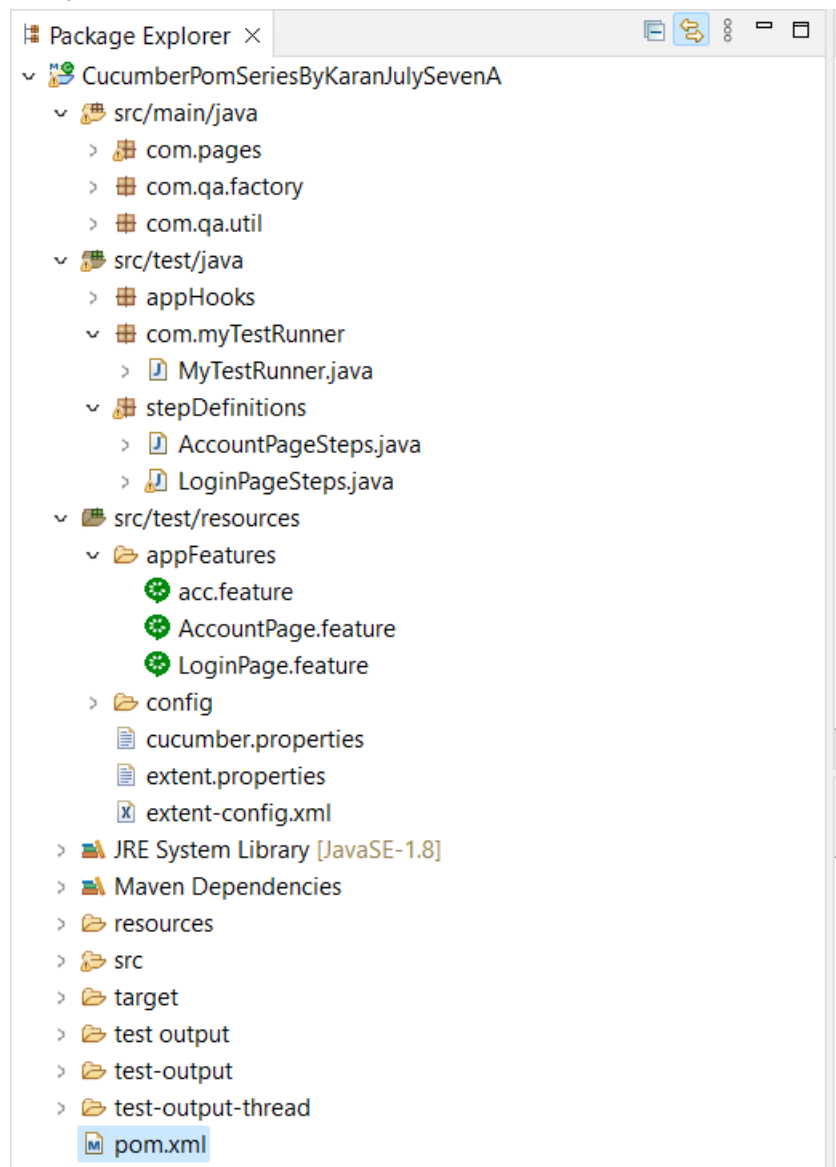
Delete Report

- > file:///E:/Naveen%20Java%20Training/Cucumber/CucumberPomSeriesByKaranJulySevenA/src/test/resources/appFeatures/AccountPage.feature
- > file:///E:/Naveen%20Java%20Training/Cucumber/CucumberPomSeriesByKaranJulySevenA/src/test/resources/appFeatures/LoginPage.feature
- > file:///E:/Naveen%20Java%20Training/Cucumber/CucumberPomSeriesByKaranJulySevenA/src/test/resources/appFeatures/acc.feature

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17°C Mostly sunny Search ENG IN 08:04 08-07-2023

Project structure-



Codes from this chapter-

Runner file-

```
package com.myTestRunner;
```

```
import org.junit.runner.RunWith;
```

```
import io.cucumber.junit.Cucumber;
```

```
import io.cucumber.junit.CucumberOptions;
```

```
@RunWith(Cucumber.class)
```

```
@CucumberOptions(
```

```
    features = { "src/test/resources/appFeatures/" },
```

```
    glue = { "stepDefinitions", "appHooks" },
```

```
    //this adapter needed for the new extent reports.
```

```
    //we can generate timeline html reports for threads using timeline plugin. we can know how many threads participated.
```

```
//we can see what threads present in a pool, which threads executed which scenario.  
//we can give name for timeline .. this is the folder which will be created once test runs.  
plugin = { "pretty",  
           "com.aventstack.extentreports.cucumber.adapter.ExtentCucumberAdapter:",  
           "timeline:test-output-thread/" }  
  
)  
public class MyTestRunner {  
  
}
```