

BDD

Lesson – 8 : Selenium – Business readable UI
automation with cucumber



Lesson Objectives

In this lesson, you will learn:

Business readable UI automation with cucumber



Introduction

- Cucumber does not communicate directly with the applications, it needs to be used in conjunction with tools such as Selenium WebDriver
- Cucumber acts more like an execution framework.
- Cucumber's use of English-like language (Gherkin) for its programming function, test case execution is supported with features and scenarios executed based on their definitions.

Business readable UI automation with cucumber



There are 3 steps for writing automated tests that deliver high value while requiring only low maintenance using Cucumber:

Step 1 : *Define scenarios:*

- The acceptance tests are written in English-like language called Gherkin.
- The scenarios defined are based on the user stories and features defined by the BA team.
- Sometimes, the BA also creates the Feature files for use by the testing team.

Step 2: *Create step definitions:*

- Once the scenarios are defined, the steps have to be implemented for execution.
- This can be done in a variety of different languages supported by Cucumber.
- For instance, if a language like Java is selected for implementation, the necessary classes and methods are defined by creating a project structure.
- The project can have references added to the Selenium jars, so that the packages can be imported and used to implement the steps to drive browsers using Selenium API.

Step 3: *Define UI Element descriptions:*

- One of the best ways to define UI element descriptions is using the PageObject design pattern.
- PageObject pattern makes automated test maintenance easier.
- This is because any changes made to the page elements are abstracted into the PageObjects itself, without the need to update feature files and step definitions.



Write a test in a Feature File

Test to Automate

Ritika visits ToolsQA Demo Website for the first time and SEARCH for Dress. She selects the first product and goes to product page. She successfully adds it to the bag. She continues to Cart Page from mini cart icon at the top right corner. Then she moves forward to Checkout page. She choose to be an ANONYMOUS USER (Not Registering) completes email and address details. She selects FREE delivery, and places the order using CHECK payment method with Billing & Delivery address as same.

Cucumber BDD Style Test

Given user is on Home Page

When he search for "dress"

And choose to buy the first item

And moves to checkout from mini cart

And enter personal details on checkout page

And select same delivery address

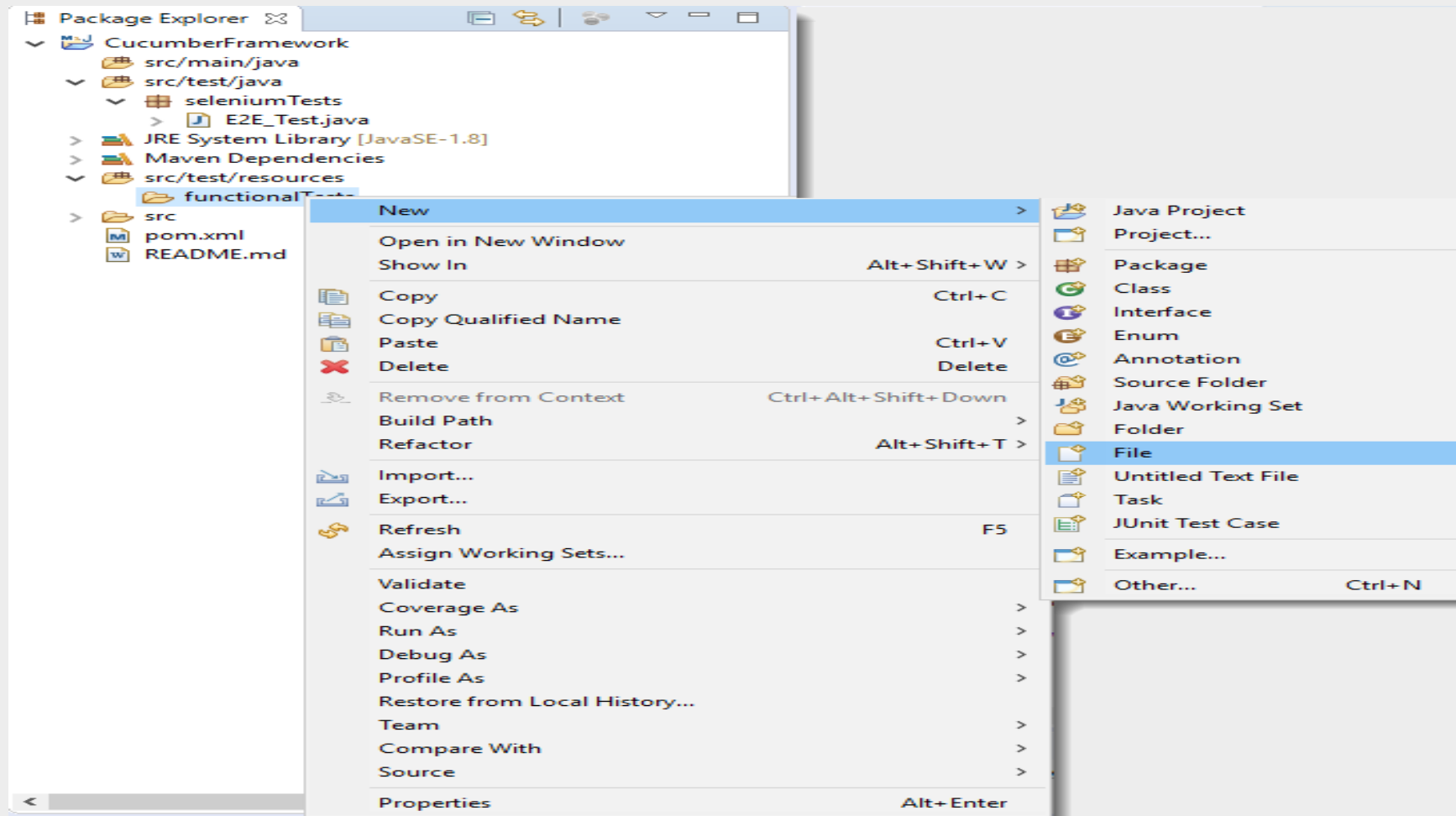
And select payment method as "check" payment

And place the order



Create Feature File

1. Create a New *Package* and name it as **functionalTests**, by *right click* on the **src/test/resources** and select **New >> Package**. **Note:** It is always recommended to put all the feature files in the **resources** folder.
2. Create a *Feature* file and name it as **End2End_Test.feature** by right click on the above created package and select **New >> File**.

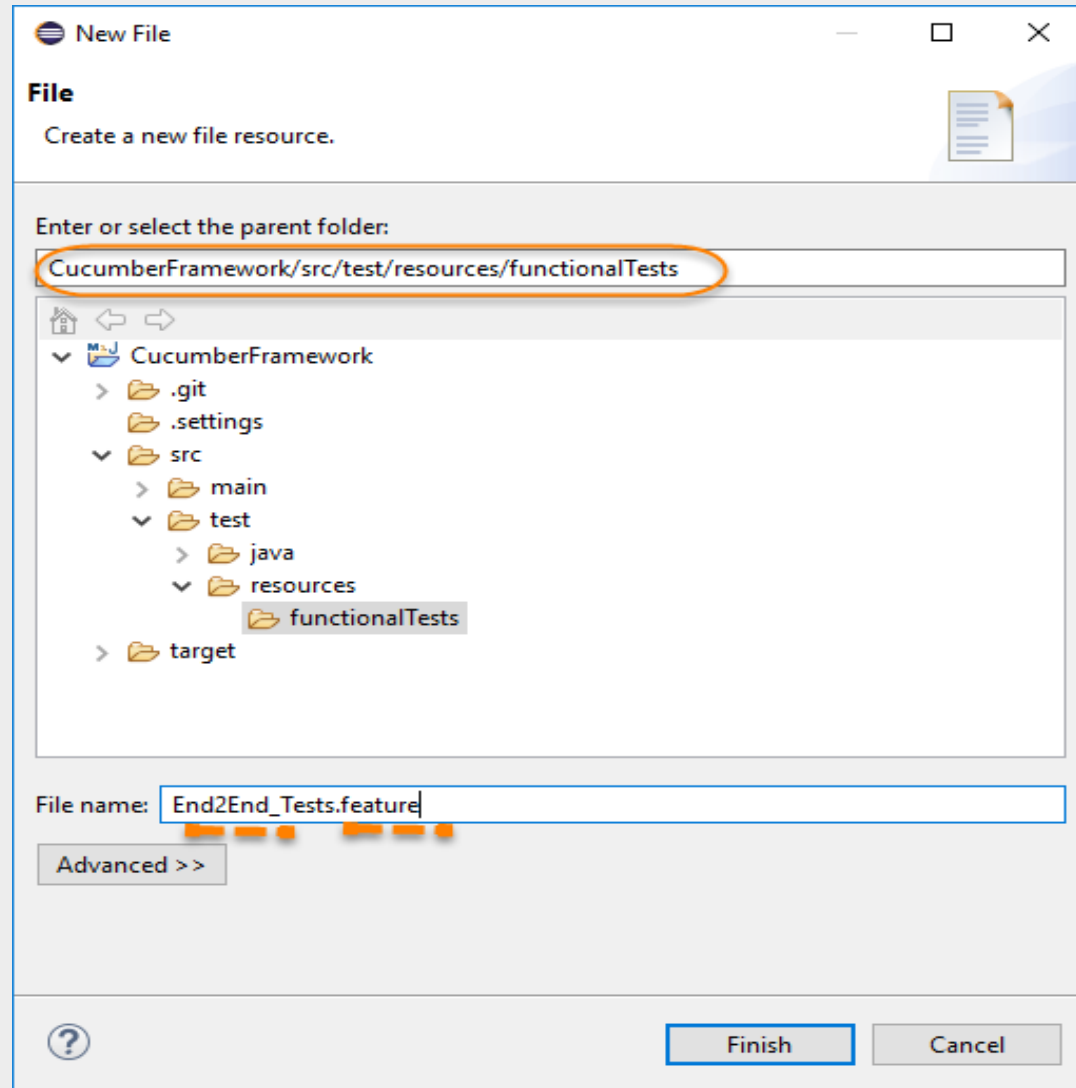


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Create Feature File

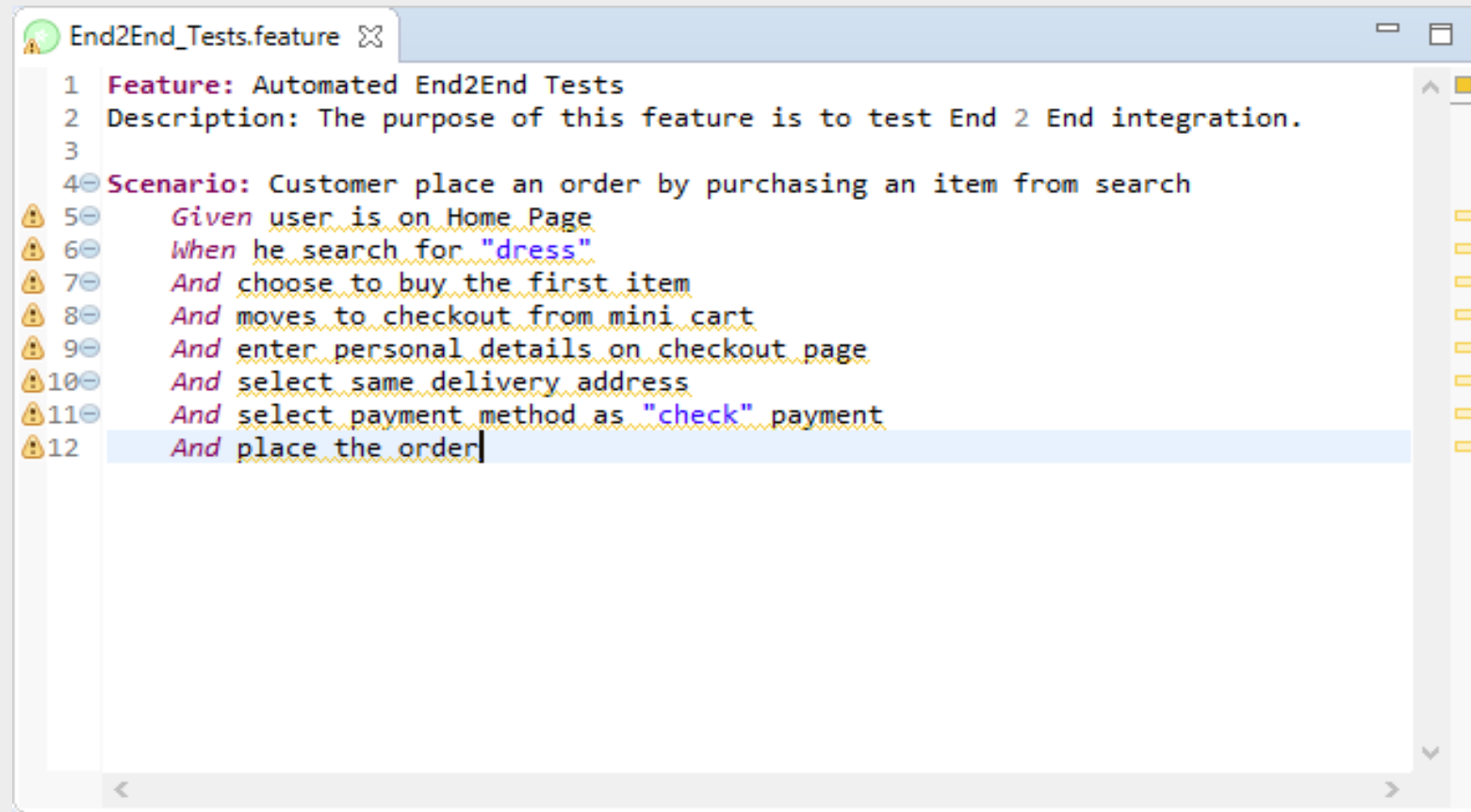
Make sure to add **.feature** extension to the file.





Create Feature File

Add the test steps to the feature file.



```
End2End_Tests.feature
1 Feature: Automated End2End Tests
2 Description: The purpose of this feature is to test End 2 End integration.
3
4 Scenario: Customer place an order by purchasing an item from search
5   Given user is on Home Page
6   When he search for "dress"
7   And choose to buy the first item
8   And moves to checkout from mini cart
9   And enter personal details on checkout page
10  And select same delivery address
11  And select payment method as "check" payment
12  And place the order
```




Create a JUnit Test Runner

1. Create a *New Package* and name it as **runners** by *right click* on the *src/test/java* and select **New >> Package**.
2. Create a *New Java Class* file and name it as **TestRunner** by *right click* on the above created package and select **New >> Class**.

```
package runners;
import org.junit.runner.RunWith;
import cucumber.api.CucumberOptions;
import cucumber.api.junit.Cucumber;

@RunWith(Cucumber.class)
@CucumberOptions(
    features = "src/test/resources/functionalTests"
)
public class TestRunner {
}
```



Write test code to Step file

1) To get the steps automatically generated, we need to execute **TestRunner** class. *Right click* on the *TestRunner* file and select **Run As >> JUnit Test**. You would get the below result in the Eclipse Console.

```
<terminated> TestRunner (4) [JUnit] C:\Program Files\Java\jre1.8.0_144\bin\javaw.exe (Dec 30, 2017, 3:35:05 PM)

1 Scenarios (@[33m1 undefined@[0m)
8 Steps (@[33m8 undefined@[0m)
0m0.000s

You can implement missing steps with the snippets below:

@Given("^user is on Home Page$")
public void user_is_on_Home_Page() throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@When("^he search for \"([^\"]*)\"$")
public void he_search_for(String arg1) throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@When("^choose to buy the first item$")
public void choose_to_buy_the_first_item() throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@When("^moves to checkout from mini cart$")
public void moves_to_checkout_from_mini_cart() throws Throwable {
    // Write code here that turns the phrase above into concrete actions
```



Write test code to Step file

- 2) Create a **New Package** and name it as **stepDefinitions** by *right click* on the *src/test/java* and select **New >> Package**.
- 3) Create a **New Java Class** and name it is as **Steps** by *right click* on the above created package and select **New >> Class**.
- 4) Now copy all the steps created by Eclipse to this *Steps* file and start filling up these steps with Selenium Code. Take all the code from our Selenium Test file created in the **End2End Test**. *Steps* test file will look like this:



Microsoft Word
Document



Write test code to Step file

5) We also need to make sure that the ***TestRunner*** file would also be able to find the step files. To achieve that we need to mention the path of the package, where we have kept all of our step definitions in *CucumberOptions*.

```
package runners;

import org.junit.runner.RunWith;

import cucumber.api.CucumberOptions;
import cucumber.api.junit.Cucumber;

@RunWith(Cucumber.class)
@CucumberOptions(
    features = "src/test/resources/functionalTests",
    glue= {"stepDefinitions"}
)

public class TestRunner {

}
```

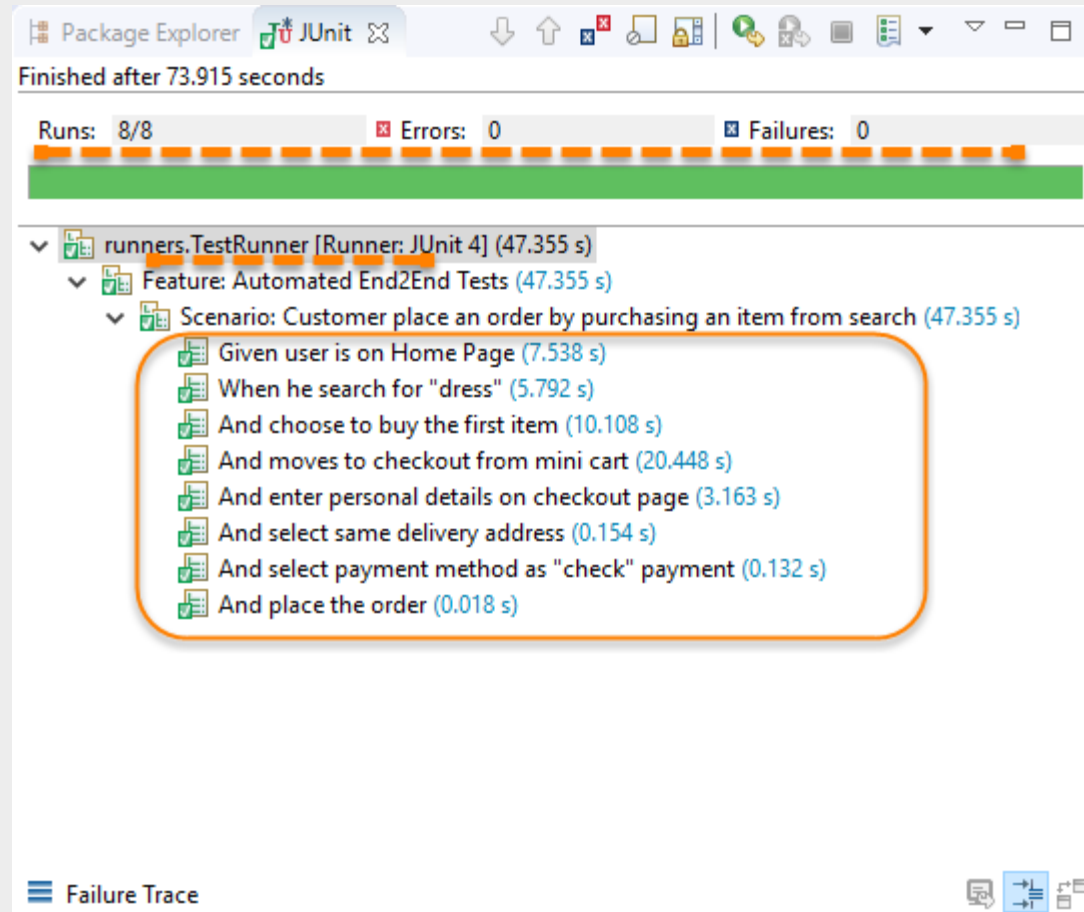


Run the Cucumber Test

Run as JUnit

Now we are all set to run the first Cucumber test. *Right Click* on **TestRunner** class and Click **Run As >> JUnit Test**.

Cucumber will run the script the same way it runs in *Selenium WebDriver* and the result will be shown in the left hand side *project explorer window* in *JUnit* tab.



Summary



In this lesson, you have learnt :

- Business readable UI automation with cucumber

