Cucumber is a testing approach which supports Behavior Driven Development ( BDD ). It’s written in Ruby. Cucumber makes it easy to read and understand the application flow. It acts as a bridge between :

* SDE and Analyst
* Manual Tester and Automation Tester
* Manual Test and Developers

Cucumber uses Gherkin language which is in plain text, anyone can understand it. Gherkin is a business, readable, domain specific language created to describe behavior without defining how to implement it.

## Advantages of using Cucumber

* Writing test cases is easy and understandable
* Provides end-to-end testing framework
* Supports almost all popular languages
* Works as a bridge between business and technical personnel.
* Test setup and execution is simple

TDD ( Test Driven Development )

Process where developers first write the unit tests for the feature based on the requirements and then implement the feature itself.

Red -> Green -> Refactor

## BDD ( Behavior Driven Development )

Extends out of TDD. Main idea is to enable anyone to be able to define tests, not just programmers. BDD includes test cases development in the form of simple english statements inside a feature file. It

Benefits of BDD

1. Bridges gap between business stakeholders and technical team. Transparent communication
2. Scenarios can be written by anyone.
3. Developers will write the code conforming to the BDD framework
4. Sharper testing
5. Code, documentation relating to BDD are understandable and maintainable
6. Modularity is easily achievable
7. Simplicity and clarity
8. It helps validating the scenarios but it also helps in unit-level test cases

[Note : Selenium is an automation tool for functional testing of web-based application]

## Terms

**Feature File** : File that stores features, scenarios and feature description to be bested. It's an entry point to write cucumber tests and used as a live document for testing. Extension is ‘.feature’. Note that each functionality should have a separate feature file.

**Feature** : Functionality of the app.

**Tags** : Tags are used to associate a test with a particular scenario. ‘@’ is used to declare a tag in Cucumber. In order to manage the execution of such large feature files, we use tags with scenarios in the feature file. It allows the tester to use OR / AND operators while choosing scenarios during testing.

OR - tags = {“@FirstTest, @SecondTest”}

AND - tags = {“@FirstTest”,”@SecondTest”}

Ignore - tags = {“@IncludeTest”, “~@IgnoreTest”}

**Scenario** : In Cucumber, each test case is named as scenario. Follow GWAT

**Scenario Outlines :** These are used when the same test is performed multiple times with different test values. These values are mentioned within <>

Example :

Scenario:

Given

When

And using <username> as “username1”

And <password> as “password1”

Then

**Datatables** : These are used when we need to test numerous input parameters of a web application.

Example:

Given

When user enter invalid data

|Fields| |Value|

|FirstName | Malcolm |

|LastName | Murrey |

|Age | 33 |

Then

**Hook** : Block of code which can be defined with each scenario using @Before and @After. Hooks facilitate the code workflow better and help reduce redundancy. Tagged hooks are also possible. @Before ( @RegressionTest )

Example:

@Before setup( )

{

Test Suite Set up

}

Scenario

Given

When

And

Then

@After teardown( )

{

Test case cleanup

}

Gherkin

This language offers a set of common keywords in English plain text which can be used by members of different communities.

Keywords include :

**Feature :** standalone unit/ functionality of the app

**Scenario:** Test case

**Given:** refers to a precondition of the test

**When:** Action of the user that is to be executed

**Then:** outcome of ‘When’

**But:** Add negative condition

**And:** Add more condition into your steps

**Background:** defines test steps that are common to all tests in feature file

Resources

1. [Cucumber.io](https://cucumber.io/)
2. [Behave](https://behave.readthedocs.io/en/stable/) ( Python based Cucumber )
3. [Automation Rhapsody](https://automationrhapsody.com/introduction-to-cucumber-and-bdd-with-examples/)
4. [Difference between Selenium and Cucumber](https://www.javatpoint.com/cucumber-vs-selenium)