BDD, Cucumber, Karate & Gherkin Keywords – Complete Guide

1. What is BDD?

BDD (Behavior Driven Development) is an approach that focuses on testing application behavior from a user or business perspective using simple language.

Real-life Example (ATM):
- Correct PIN → Cash dispensed - Wrong PIN → Error message

BDD is written using Gherkin language:
Given ATM machine is ready When user enters correct PIN Then cash should be dispensed

2. Gherkin Keywords (IMPORTANT)

- Feature – High-level functionality under test
- Scenario – One test case
- Scenario Outline – Same scenario with multiple test data
- Given – Pre-condition
- When – Action performed
- Then – Expected result
- And / But – Additional steps

Example using Gherkin keywords:
Scenario: Successful login Given user is on login page When user enters valid credentials Then user should see dashboard

3. BDD with Cucumber

Cucumber is a tool that implements BDD using Gherkin. It requires step definition files where actual automation code is written.

Cucumber Feature File Example:
Feature: User API Scenario: Get user Given user API is available When user sends GET request Then response status should be 200

Cucumber Step Definition Example (Java):
@When("user sends GET request") public void sendRequest() { // API call code }

4. BDD with Karate

Karate also follows BDD and uses the same Gherkin keywords, but it does not require step definitions. Behavior and automation are written in the same feature file.

Karate Feature File Example:
Feature: User API Scenario: Get user Given url 'https://reqres.in/api/users/2' When method get Then status 200

5. Scenario Outline (Data-driven BDD in Karate)

Scenario Outline: Get user by id Given url 'https://reqres.in/api/users/' When method get Then status Examples: | id | status | | 1 | 200 | | 2 | 200 | | 23 | 404 |

6. Final Summary (Interview Ready)

BDD is the approach. Gherkin is the language. Scenario, Given, When, Then are Gherkin keywords. Cucumber and Karate are tools that execute Gherkin-based BDD tests.