Writeup:

The above Cucumber feature and corresponding Java step definitions are designed to automate the process of searching for "physics books" on an e-commerce website (in this case, "https://amazon.in") and adding the first search result to the cart. The scenario is then extended to verify that the product is successfully added to the cart and proceed to the checkout page.

Here's a breakdown of the Cucumber feature and its step definitions:

Feature: The feature specifies the high-level functionality to be tested, which is "Search and Add Product to Cart."

Scenario: The scenario "Add product to cart" outlines the specific steps to be executed to achieve the desired functionality.

Step Definitions: The step definitions in the Java code correspond to each step in the scenario. Each step is implemented using Selenium WebDriver to interact with the website and perform the required actions.

Given, When, Then Clauses:

Given: This clause sets up the preconditions for the test, such as opening the browser and navigating to the application URL.

When: This clause defines the actions to be performed, such as typing "physics books" in the search box, selecting the third option from the dropdown, clicking on the first search result, etc.

Then: This clause verifies the expected outcomes, such as checking if the text "Added to Cart" is displayed and if the user is on the Sign in page.

@Before and @After Hooks: These hooks are used to set up and tear down the test environment. The @Before hook initializes the WebDriver, wait, and actions objects before executing any scenario, ensuring the browser is ready for testing. The @After hook quits the WebDriver after the test completes.

Please note that the implementation of specific actions and validations is left empty in the code provided, as it depends on the website's HTML structure and user interactions. For a complete and functional test, you need to fill in the appropriate locators and interactions based on the elements present on the website being tested.

With this automation framework in place, you can now execute the Cucumber feature, and it will run through the steps defined in the scenario using Selenium WebDriver to interact with the website. The test will then provide feedback on whether the expected functionality is working as intended, ensuring a smooth and automated testing process for "Search and Add Product to Cart" functionality.