**Capstone Project: Automated Testing of Travel Booking Website (Booking.com)**

**Project Overview:**

This project aims to automate the testing of various functionalities of the Booking.com website using Selenium for UI testing, manual testing techniques, Cucumber for Behavior-Driven Development (BDD). The goal is to ensure that the website functions smoothly, providing users with a reliable and efficient travel booking experience.

**Assignment Tasks:**

**1. Automated UI Testing with Selenium**

* **Task:** Develop an automated test suite to verify key functionalities on Booking.com using Selenium.
* **Test Environment Setup:**
  + Set up Selenium WebDriver with a test framework like TestNG.
  + Integrate the project with Maven for dependency management.
  + Configure browser drivers (e.g., ChromeDriver, GeckoDriver) to support cross-browser testing.
  + Set up a Continuous Integration (CI) pipeline using Jenkins to automate test execution.
* **Automated Test Cases:**
  + **Home Page:**
    - Validate the search functionality for destinations, check-in/out dates, and number of guests.
    - Ensure proper loading and display of promotional banners and offers.
  + **Search Results:**
    - Automate the process of filtering results by price, star rating, property type, and more.
    - Validate the sorting of results by various criteria like price, rating, and distance from landmarks.
  + **Hotel Details Page:**
    - Verify that hotel details such as name, description, amenities, room options, and pricing are displayed correctly.
    - Automate the selection of rooms and proceed to the booking page.
  + **Booking Process:**
    - Test the entire flow from selecting a hotel room to entering guest details and completing the booking.
  + **User Account Management:**
    - Automate user registration, login, profile updates, and viewing past bookings.
  + **Cross-Browser Testing:** Run tests on multiple browsers to ensure compatibility.
* **Reporting:**
  + Generate detailed test execution reports using tools ExtentReports.

**2. Manual Testing**

* **Task:** Perform manual testing to validate the user interface, core functionalities, and explore edge cases.
* **Test Plan and Test Cases:**
  + **Home Page:** Test navigation, search functionality, and the accuracy of displayed promotions.
  + **Search Functionality:** Validate the accuracy of search results, including sorting and filtering options.
  + **Hotel Details:** Check the accuracy of hotel descriptions, amenities, room availability, and pricing.
  + **Booking Process:** Manually test each step of the booking process, from room selection to payment.
  + **User Account Management:** Verify account creation, login/logout, and profile management manually.

Document test cases, expected results, and actual outcomes in a test management tool like Jira or TestRail.

* + Log any defects or issues discovered during testing and track their resolution.

**3. Behavior-Driven Development (BDD) with Cucumber**

* **Task:** Implement BDD using Cucumber to define and automate test scenarios in Gherkin syntax.
* **Gherkin Syntax:** Write feature files to describe the expected behavior of the Booking.com website.
* **Test Scenarios:**
  + **Search and Filter Hotels:** Define scenarios for searching for hotels and applying various filters.
  + **Booking a Hotel Room:** Write scenarios for the entire booking process, from room selection to payment.
  + **User Account Management:** Define scenarios for user registration, login, and managing bookings.
  + **Booking Management:** Describe scenarios for viewing and canceling bookings.
* **Execution and Reporting:** Run Cucumber tests and generate detailed reports.

**Tools and Technologies:**

* **UI Testing:** Selenium WebDriver, TestNG, Maven, Jenkins, ExtentReports.
* **Manual Testing:** Jira, Zephyr , or similar tools for test management.
* **BDD:** Cucumber, Gherkin syntax, Jenkins for CI.
* **CI/CD:** Jenkins

**Expected Deliverables:**

* **Automated Test Scripts:** Selenium scripts for key functionalities.
* **Manual Test Cases:** Documented manual test cases with testing results.
* **Test Reports:** Comprehensive reports from both automated and manual testing.
* **CI/CD Pipeline:** A fully integrated CI/CD pipeline with automated tests.
* **BDD Feature Files:** Gherkin feature files detailing expected behavior.
* **Project Presentation:** A summary presentation covering the testing strategy, tools used, and results.