Work Integrated Learning Programmes

BITS Pilani
Pilani | Dubai | Goa | Hyderabad

Software Testing Methodologies
(SE ZG552/SS ZG552)

Assignment

Last Date for Submission: 31st October 2025 (23:55)
Weightage: 20 Marks

Note: The given assignment shall be done in groups

- This is a group assignment.
- All members of the group will work on the same problem statement.
- Each group should zip the deliverables and upload at Taxila (elearn) in respective locations under ASSIGNMENT Tab.
- Assignment submitted via means other than through Taxila will not be graded.

Part I - 10 Marks

1. Objective:

   The aim of this assignment is to develop the capabilities of the students to apply various software testing techniques (including Boundary Value Analysis and Equivalence Class Technique) to test a given software system, and verify the designed test cases using Automated Testing.

   Another important aim of this lab is to make students familiar with Automation testing using Selenium WebDriver and Apache POI (for interfacing Excel files with Java).

2. Problem Description:

   Choose a website of your choice from one of the following domains:

   - Online Retail System
   - Online Flight Ticket Booking
   - Hotel Management System
   - Online Movie Ticket Booking
   - Online Railway Reservation

   You are required to test the user interface of the selected website. Choose any two

input fields that you would be testing. Carry out Equivalence Class testing for the selected input fields.

a) Identify the positive and negative domains.
b) Write test case for weak robust variant.
c) Execute the test cases using Selenium Automation technique. Use the template file (Template-TestCase.xlsx- from Platifi) to record the test cases generated and the output of the same.
d) Execute the test cases using Selenium Automation technique. Read test cases from the template file (excel file) using Apache POI.

Also, carry out Boundary Value Analysis testing for the selected input fields.

a) Calculate the number of test cases – Normal BVA, Robust BVA, Worst case BVA and Robust worst case BVA required to carry out boundary-value analysis for the selected fields.
b) Execute test cases (atleast 8) for Robust worst case BVA for one of the selected input field, using Selenium Automation technique.

3. Expected Deliverables

The students are expected to submit the following:

- A document, based on the template file, detailing the generated test cases
- Complete Java project
- Screenshots of the demo of the implementation of various test cases.

4. Additional Material

You can use the lab capsules, tutorial sheets and video tutorials uploaded on the Platifi portal (Resources) for the STM course in order to understand the use of various available tools and techniques for the same.

Part II – 10 Marks

1. Conduct in-depth research on one of the following topics and create a presentation using your original words and insights. Your analysis should encompass the most recent trends and technologies related to the chosen topic. Additionally, consider incorporating a practical demonstration using relevant tools to showcase your findings.

   Please be aware that any form of plagiarism, such as copying content from the internet or utilizing generative AI tools, is strictly forbidden according to the rules set forth by the University.

1. Fault Based Testing
2. Risk Based Testing
3. Performance Testing
4. Load Testing
5. Stress Testing
6. Security Testing
7. Installation Testing
8. Recovery Testing
9. Configuration Testing
10. Database Testing
11. Mutation Testing
12. Behavioral Driven Testing
13. Synthetic Testing
14. Chaos Engineering
15. Crowd Testing
16. Fuzz Testing

2. Expected Deliverables

The students are expected to submit the following:

- A slide deck detailing your research, learnings and take away