FACULTY OF INFORMATION TECHNOLOGY
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CS423 – CSC13003 – Software Testing
HOMEWORK
DOMAIN TESTING

General Information

Exercise ID:	DomainTesting
Duration:	9 hours
Deadline:	(please see the submission link)
Form:	Individual Assignment
Submission:	Moodle
Lecturer:	Dr. Lam Quang Vu
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Expected Learning Outcome

By completing this assignment, students will be able to:

- Understand and apply the test design techniques: **Equivalence Partitioning (EP)** and **Boundary Value Analysis (BVA)**.
- Design test cases for critical real-world features based on valid/invalid input classes and boundary values.
- Execute the designed test cases on a real application.
- Record actual results, compare them with expected results, and report bugs if applicable.
- Use AI tools effectively and responsibly to support test design and reporting.
- Create a professional test report combining human and AI contributions.

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Software Under Test

- **Application**: The Toolshop
- **Repository**: https://github.com/testsmith-io/practice-software-testing/
- **Target Version**: `/sprint5-with-bugs` folder

👉 Students must download this version and **deploy it locally** on their machine.

Scope and Feature Selection

- Students must work **in groups**.
- Each **group member must select and be responsible for testing at least two (2) distinct features** of the system under test.
- **No two members within the same group are allowed to work on the same feature**.
- In the final reports, **each student must submit their own individual report**.
- **At the beginning of each individual report, students must include a clear task allocation section for the entire group**, which shows:
    - Names of all group members
    - Features assigned to each member
- Following that, the individual report should detail the student's own assigned features, including test case design, execution results, and any bugs found.

⚠️ The higher the priority and business impact of the selected features, the more credit will be given in evaluation.

Requirements

Your submission must include the following sections:

a. EP and BVA Design Process

For each of the 2 selected features:

- Describe the **inputs** and possible constraints.
- Apply **Equivalence Partitioning (EP)** to identify valid and invalid classes.
- Apply **Boundary Value Analysis (BVA)** to identify key test values at and around boundaries.

b. Test Case Documentation

- Write **test cases in professional QA format** for each feature.
- Each test case must include:
  - Test Case ID
  - Title
  - Preconditions (if any)
  - Inputs
  - Test Steps
  - Expected Result
  - Actual Result (to be filled after execution)
  - Result (Pass/Fail)
  - Type: EP or BVA

c. Use of AI Tools

- If you use an AI tool (e.g., ChatGPT, Gemini, Copilot), clearly describe:
  - The **tool name**
  - The **prompts used**
  - How you validated or refined the AI-generated results
  - Which test cases came from AI and which were created manually

d. Merged Test Case List

- Combine AI-generated and student-created test cases into **one consolidated list**.
- Remove duplicates and justify your final selections.

e. Test Execution & Bug Reporting

- Execute all test cases on your local deployment of *The Toolshop*.
- Fill in the **Actual Result** and mark **Pass/Fail**.
- If a test fails, document it in a **Bug Report**, including:
  - Bug ID
  - Summary
  - Steps to Reproduce
  - Actual Result vs Expected Result
  - Screenshot (if possible)
  - Priority and Severity
  - Affected Feature / Version

Submission Instructions

- **File Name Format**:
  `StudentID_DomainTesting_SelfAssessedGrades.zip`
  (Example: `20127001_DomainTesting_090.zip`)
- The ZIP file must include:
  - **StudentID_DomainTesting.pdf**: Your individual report.
  - **StudentID_Test cases.xlsx**: The final test case document, including both manually designed and AI-generated test cases.
  - **StudentID_Bug Report.xlsx**: Your detailed bug report.
- **Submission Platform**: Moodle
- **Deadline**: Refer to the submission link on Moodle

Assessment Criteria

Criteria	Description	Max Points
Feature Selection	2 important features selected	1.0
EP Technique	Correct and complete partition identification	2.0
BVA Technique	Correct identification of boundaries and rationale	1.0
Test Case Design	Test cases are clear, traceable, professional	2.0
Use of AI Tools	Prompt transparency, critical validation, added value	1.0
Test Execution	All designed test cases executed, results logged	1.0
Bug Reporting	Clear and complete bug report(s), if applicable	1.0

Merging and Final Review	Proper combination and deduplication of test cases	0.5
Presentation & Clarity	Document is well-organized, readable, with self-assessment	0.5
Total		**10.0 points**

References

None.

Other regulations

Late submission is not permitted.

Self-Assessment Template

Students must include their self-assessment based on the rubric in assessment criteria session at the end of their individual report.