Software Engineering and Testing. BSC Year 2, 2024/2025
(Assignment 4 - 25%)
(Demo 5%)
Assignment 4: Software Testing

25% Due date: (28th April 2025 - 9am)

5% Demo (In labs - Week of 28th April 2025)

Marking Scheme

Test Section (25 marks)

- **Unit Testing *(10 marks)***
- **User Interface Testing *(10 marks)***
- **Validation Testing *(5 marks)***

Demo Section (5 marks)

- **Requirements Testing *(3 marks)***
- **Equivalence Partition Testing *(1 mark)***
- **Basis Path Testing *(1 mark)***

***Objective*:**

To perform a series of Formal Software Tests on your implementation

(a) Unit Testing (10 marks)

- Perform 5-unit tests on 5 of your Core classes in the original class diagram of your project.
- Each Unit test upon each class is worth 2 marks each
- Upload **5 PHP** files as a Test Case for each Unit Test.

(b) User Interface Testing (10 marks)

- Choose any 5 principles of User Interface design to implement and test. For example, *guidance, feedback, recoverability, consistency, minimal user clicks.*
- Choose 5 principles of User Interface design that should be incorporated into your project's User Interface and perform 5-User Interface tests on your project.
- Each User Interface Principle that is tested is worth 2 marks each
- Upload **one PDF** file including screenshots to outline your 5 principles, and hence 5 UI tests. *UI Testing must be demonstrated during the final demo.*

(c) Validation Testing (5 marks)

- Perform 5-Validation Tests on your project using appropriate data. *Validation that can be performed using HTML 5 text box validation will not be considered.* For example, use bespoke and tailor-made data entry for your validations.
- Each validation test is worth 1 mark. Upload **ONE PHP** file as a Test Case for all validation tests. Indicate in the code comments what each test is validating.

Demo Section

(d) Requirements Testing (3 marks)

- Choose 3 core Use Cases that you have included in your project's original Use Case Specs and list the requirements and Use Case specs for each in the form of a check list.
- Mark the check list with those requirements that have been fully completed and those which have not been completed.
- Each Requirements Test from the Use Case Spec list is worth 1 mark
  Upload **one PDF** file.
- *This will also be demonstrated during the final demo.*

(e) Equivalence Partition (1 mark)

- Create **One** Equivalence Partition list on your project using appropriate boundary values.
- See lecture notes and samples for guidelines.
- This Equivalence Partition test is worth 1 mark.
- **Upload 1 PDF file outlining your Equivalence Partition list.**
- **Upload 1 PHP file as a reusable Test Case for this Equivalence Partition list.**

(f) Basis Path Testing (1 mark)

- Create **One** Basis Path list on your project using an appropriate calculation.
- See lecture notes and samples for guidelines.
- This Basis Path test is worth 1 mark.
- **Upload 1 PDF file outlining your Basis Path list.**
- **Upload 1 PHP file as a reusable Test Case for this Basis Path list.**

NB: Upload *PDF* and *PHP* format Only

Academic Honesty:

Any work that you submit for continuous assessment or assignments must contain a significant contribution by you. Any help you receive from someone must be acknowledged in the work submitted. Failure to acknowledge the source of a significant idea or approach is considered plagiarism and not allowed. Academic dishonesty will be dealt with severely. At a minimum, you will receive a mark of zero for the assignment