Test Driven Development

B.Sc. (Hons) Software Development

Assignment 2 Part 2

Test Driven Development Project (Home)

Instructions to Students

Read the following instructions carefully before you start the assignment. If you do not understand any of them, ask your lecturer for further explanation.

- This assignment (Part 2) has a total weight of **24%** of which **KU7 (5%)** is based on a practical task.
- The tasks are **different for MSD and SWD students**, make sure you implement the task relevant to your stream.
- Copying is strictly prohibited and will be penalised through a referral and other disciplinary procedures as per MCAST Policies, Procedures and Regulations.
- Your submission should include:
    - Printed version of this assignment brief:
        - Page 1 (All students)
        - Page 2 (SWD) or Page 3 (MSD)
    - Printed and properly filled coversheet
    - Submission to Moodle as instructed by your lecturer.
- Each task shows the marks associated with it. A rubric with a detailed breakdown can be found on the last page of this assignment.

Part 2 for SWD Students: Acceptance testing using Cucumber/Gherkin (19 marks)

Add a class called **TaskRunner** with a **main()** method that allows the user to create and execute tasks by providing the list of parameters as command line arguments.

AA5 Produce the following documentation:

- Short description of the tasks you implemented in Part 1, including the specifications, description of parameters and a brief overview of any web services used. (2 marks)
- Produce one or more feature files (given-when-then) to be used in acceptance testing of **TaskRunner**. At least 10 cases should be included that include valid, invalid, incomplete and missing parameters. (5 marks)
  Note: Implement these tests in criterion KU6

KU6 Meeting user expectations:

- Write 10 acceptance tests defined in criterion AA5 to make sure that **TaskRunner** can correctly handle valid and invalid user input without crashing. (5 marks)

AA2 Importance of Acceptance testing:

- Identify and describe at least one defect or missing feature that was identified when performing the acceptance testing above. (2 marks)
- Discuss some refactoring (include before and after code snippets) identified during acceptance testing that would improve your design. (2 marks)
- Explain the importance Cucumber/Gherkin in the process of test-driven development, using your experience in this project or other work you did during the semester. (3 marks)

Rubric: Part 2 for SWD students

Task	No Marks	Partial Marks	Full Marks	Marks
AA5	No Documentation submitted. No feature files submitted or cannot be executed due to syntax errors.	Documentation vague, incomplete, or incorrect in parts. (1 Mark) Feature files contain more than half of the required cases. (2 Marks)	Documentation complete and correct. Feature files have at least 10 unique cases that cover different valid and invalid cases.	
KU6	No acceptance test implementation	Acceptance test implementation contain more than half of the required cases. (2 Marks)	main() method correctly implemented. At least 10 acceptance tests implemented correctly that handle all situations.	
AA2	No Documentation submitted.	Half marks for vague, incomplete, or partially incorrect documentation. (3.5 Marks)	All documentation submitted was correct and complete.	
KU7	Practical session code not submitted	Practical partially completed: more details given during practical session (1-4 Marks)	Practical fully and correctly completed: more details given during practical session	

Part 2 for MSD Students: Acceptance testing using Selenium/Gherkin (19 marks)

In this part of the assignment you are to choose up to three websites to test automatically using Selenium. Testing can be done using Selenium IDE, Katalon Recorder or Selenium WebDriver.

AA5 Produce the following documentation:

- Short description of the tasks you implemented in Part 1, including the specifications, description of parameters and a brief overview of any web services used. (2 marks)
- Produce one or more feature files (given-when-then) to be used in acceptance testing of your chosen websites. A minimum of 10 different test cases should be included. (5 marks)
  Note: Implement these Selenium tests in criterion KU6

KU6 Meeting user expectations:

- Implement the 10 acceptance tests defined in criterion AA5 using Selenium or Katalon. You are required to use at least 10 different Selenium commands in your tests e.g. open, clickAndWait, type, etc. (5 marks)

AA2 Importance of Acceptance testing:

- Discuss at least 2 refactoring (include before and after code snippets) that you would do following the acceptance testing. (4 marks)
- Explain the importance Selenium in the process of test-driven development, using your experience in this project or other work you did during the semester. (3 marks)

Rubric: Part 2 for MSD students

Task	No Marks	Partial Marks	Full Marks	Marks
AA5	No Documentation submitted. No feature files submitted or invalid syntax.	Documentation vague, incomplete, or incorrect in parts. (1 Mark) Feature files contain more than 5 correct cases. (2 Marks)	Documentation complete and correct. Feature files have at least 10 unique cases that different situations.	
KU6	No acceptance test implementation	Acceptance test implementation contain more than half of the requirements (5+ unique tests, 5+ different commands). (2 Marks)	10 different acceptance tests implemented correctly using 10 different Selenium commands.	
AA2	No Documentation submitted.	Each complete and correct refactoring (2 Marks each, max 4 Marks) Vague, incomplete, or partially incorrect documentation. (1 Mark)	2 complete and correct refactoring discussed. All documentation submitted was correct and complete.	
KU7	Practical session code not submitted	Practical partially completed: more details given during practical session (1-4 Marks)	Practical fully and correctly completed: more details given during practical session (5 Marks)	