CMPU4064-A Systems Analysis and Testing (5 ECTS)

Continuous Assessment Semester 2 2020-2021

Contents

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Overview

You will be completing this CA as an individual but you will be provided with opportunities to discuss your work with your peers. There are **two phases** to the assessment for this module. You will make separate submissions for each phase and there will be separate deadlines for each phase. During **phase one** you will focus on gathering and expressing requirements to a level from which you can start to derive a design and user testing which is the focus of **phase two.**

For this assessment you will be imagining that you are working as an analyst/designed on a project commissioned to investigate the requirements for developing an online web presence for a small organization in any area for example:

- Hospitality
- Retail
- Learning/Tuition/Training
- Services (financial, cleaning, etc.)
- Training
- Charity
- Travel management
- Tourism
- Comparison services (insurance, power etc.)
- Any other type of organisation you wish.

NOTE: The project should be sufficiently complex.
Please consult with the lecturer before you start to determine whether your selection is adequate for the purposes of this assessment.

What Is Each Phase of The Assessment Worth?

Each phase is worth 25% of module marks. Each assessment will be marked out of 100 and your results for both phases will be aggregated and weighted out of 50% as contribution to the overall module mark.

Phase I (One) Description

Your goal for this phase is to develop and document a set of requirements for the online presence which will allow the company to compete with major competitors (or those who offer similar services) in the area who currently operate within Ireland by investigating functionality that competitors currently offer.

The objective is to identify requirements to allow your chosen organization to meet a core set of functions which are offered by major competitor(s) and then develop an analysis model to establish a foundation from which the company can complete a design.

You should investigate potential competitors and conduct a brief comparative analysis to decide the scope for this phase. You can search the online for competitors that you can use as sources of knowledge about functionality. You may have to register for some sites to get access to the more important functions the site allows you to perform but you do not need to pay for any services to complete this assessment.

You will complete the following:

1. Decide on the type of organization you wish to develop a web presence for and identify a boundary scope.
2. **Research** the major functionality which should be available to users of the system to i**dentify** an agreed scope and document the research and scope.
3. Develop **ONE use case diagram** (average # of use cases 12-15) to model this functionality. You can if you wish include multiple diagrams if you feel including everything on one would be too cluttered. **Justify** your choices.
4. **Identify non-functional requirements** for the system/application. **Justify** your choices.
5. Document **ONE** major function as a **use case narrative**.
6. Document **ONE** major function using **an activity diagram**.
7. **Document** all of the above in a single report using the template provided as part of the assessment.
8. **Document** the above using the template provided as part of the assessment.

   NOTE: You need to choose something suitably complex for the narrative and activity diagram. For example, modelling login alone would not be acceptable unless there is something particularly novel about it.

Phase II (TWO) Description

At the start of this phase you will review and revise the outcomes of phase I. You should address any issues identified in the feedback provided for phase I which would impact your work for phase II. The focus of the phase then moves to using the analysis model to derive test cases and move toward design.

1. Analyse the use case diagram, use case narratives, activity diagrams and non-functional requirements created in phase I and revise using the feedback to provide a coherent perspective on those aspects of the software.
2. **Create** a single **corrected/updated use case diagram.**
3. Document **ONE Test Case** for one major aspect of functionality.
4. Translate your analysis model to develop a **class diagram** which addresses **five** (meaningful) aspects of functionality.
5. Using the revised analysis model and the agreed class diagram, develop **ONE sequence diagram** to model one aspect of functionality making sure it is coherent with the group class diagram.
6. **Document** the above using the template provided.

   NOTE: You need to choose something suitably complex for the test cases and sequence diagram. For example, modelling login alone would not be acceptable unless there is something particularly novel about it.

Phase I: What do I submit and how do I submit?

- Individually: Create a single report named **<Student #>-SATPhaseOne.docx** (or .doc or docx or .pdf) e.g. D18123456-SATPhaseOne.docx using the template provided. Please see template for the content required.
- Submit via the assessment box named **Phase I (ONE) submission** in Brightspace.

Phase II: What do I submit and how do I submit?

- Individually: Create a single report named **<Student #>-SATPhaseTwo.docx** (or .doc or docx or .pdf) e.gD18123456-SATPhaseTwo.docx using the template provided. Please see template for the content required.
- Submit via the assessment box named **Phase II (TWO) submission** in Brightspace.

How Are Late Submissions Handled?

If you are going to be late submitting (by more than 24 hrs) then you must email the lecturer and let them know why you are submitting late. Dependant on your circumstances a late submission may be allowed.

How Long Will Each Phase Take to Complete?

The time taken to complete depends very much on your own work ethic, your level of comfort with the subject matter and your expectation for a final result.

A student who has fully engaged with the module, completed all labs, and grasped all concepts should meaningfully be able to achieve a strong mark by spending approx. 12-15 hrs on each phase.

By doing the assessment you will be working through the module material and the work will support your revision for the end of semester examination also.

The key to success is to start working on the assessment. Diagramming in systems analysis and design is not just about documenting an outcome. Creating these diagrams is part of the thinking process involved in deciding on what the outcome should be. Use the diagram creation as a thinking process – draft-critique-redraft-repeat.

Marking Scheme

PHASE ONE		
Component	**Consideration**	**MARKS AVAILABLE**
Research, Justification, Documentation	Is the project sufficient for the assignment? Is it clearly described?	**5**
	Has evidence of research been included? Is it clear and concise? Easy to understand?	
	Has a justification for the proposed functionality been included? Does this make sense?	
Use Case Diagram	Are there sufficient use cases included to describe the functionality of the chosen system?	**30**
	Are actors and cases named appropriately?	
	Are relationships correct?	
	Is the diagram consistent and easy to understand?	
Non-Functional Requirements	Are the requirements categorised? Are they sensible? Is a description included for the requires?	**20**
	Is a justification included for the requirements? Does this make sense? Are there any major omissions?	
Use Case Narrative	Is the functionality covered sufficiently complicated? Is the narrative consistent with the use case diagram?	**20**
	Are all relevant parts included: actors, pre and post conditions, initiation and termination, normal and alternate flows included? Do alternate flows return to the normal flow?	
	Is the narrative well-structured and easy to understand? Is the format used consistent for all narratives?	
Activity Diagram	Are the workflows covered sufficiently complicated? Is the terminology and notation use correct?	**20**
	Are decisions implemented correctly? Is there correct use of synchronisation if required?	
	Is there a clear start and termination point?	
Overall Quality of Submission	Is the report coherent? Are the descriptions of functionality consistent and coherent?	**5**
	Is the report consistently well organised, well formatted and easy to follow?	
	Total Marks Available (Weighted as 25% of overall module marks, 50% of CA marks)	**100**

PHASE TWO		
Component	**Consideration**	**MARKS AVAILABLE**
Test Case	Does the test case address a piece of functionality of sufficient complexity? Is the purpose of the test case clear? Is it consistent with the relevant requirements artefacts? Are the steps clear and easy to understand? Does it include normal and alternate flows? Is test data (or instructions to derive it) included? Is it clear for each step what data should be used? Is it clear what is expected in terms of results (for each step and overall, for all circumstances)?	**20**
Class Diagram	Does the class diagram support at least four aspects of the functionality of the system? Is the functionality consistent with the requirements artefacts from phase 1 (with minor adjustments based on feedback provided)? Is there a discussion of what is being addressed? Is this clear, correct and justified? Do the classes make sense? Are attributes, operations and relationships included for all classes? Where no operations or relationships are included for a class, is a note made in the documentation explaining why? Is the notation used consistent? Does this adhere to conventions? Are all classes named consistently?	**40**
Sequence Diagram	Does the sequence diagram address a major piece of functionality? Is it named? Is there explanation of notation used? Is the notation used correct and consistent? Does the diagram include correct objects and operations? Are these consistent with the class diagram? Is the diagram clear and easy to understand?	**35**
Overall Quality of Submission	Is the report coherent? Are the descriptions of required artefacts consistent and coherent? Is the report well organised, well formatted, consistent in organisation and format, and easy to follow?	**5**
	Total Marks Available **(Weighted as 25% of overall module marks, 50% of CA marks)**	**100**

What Penalties Can I Incur and How?

What can go wrong?	Why is it an issue?	What Penalty (out of 100 marks)?	How can I avoid this?
Late Submission	Feedback can only be given when all submissions are complete otherwise some students might gain an unfair advantage.	Dependent on circumstances – you need to contact the lecturer asap if you are going to submit late.	Submit on time If you have issues during the assessment please contact the lecturer to let them know so that arrangements can be made.
Incorrectly named submission	In any organisation there are standards for file naming, it is something you need to get used to in your career. Files that do not adhere to the naming conventions may require additional searching to find which will delay marking. All material submitted must be downloaded and organised for the external examiners and if naming is not adhered to may be overlooked.	5 marks	Read the naming requirements
Submitting by incorrect mechanism	If you submit by other mechanisms such as email you cannot guarantee that the submission will be successful. For example, if you submit by email it is very likely to be filtered as spam as this is controlled by central ICT not by the lecturer.	Your submission will be ignored – you will receive no marks for this phase.	Ensure you understand what is required of you.
Omitting required content	You are required to address all the learning outcomes of the module.	Marks allocated for that section.	Make sure you know what you are required to submit.
Using an incorrect template	In any organisation there are expected standards used for documentation, it is something you need to get used to addressing in your career. It also makes it much easier for external examiners to compare students work.	5 marks	Use the templates provided.

Important Notes:

- **Please ensure that all diagrams are readable within the report.**
- **Only pdf or word documents will be accepted.**
- **If your file is not named as required you will lose marks.**

DO:

- Familiarise yourself with the requirements of all aspects of the assessment.
- Ask for clarification on any aspect that is unclear.
- Engage fully with all aspects of the assessment.
- Work consistently on the assessment throughout the module.
- Ensure all diagrams are readable within the reports submitted.
- Adhere to the naming conventions as outlined.
- Use the templates provided.
- Submit via the correct submission box.
- Please review the General Assessment Regulations and ensure you understand your responsibilities and penalties that may apply if you breach these regulations (https://www.dit.ie/qualityassuranceandacademicprogrammerecords/student-assessment-regulations/general/).

AVOID:

- Unfair practice:
    - This includes using resources, ideas, documentation etc. from the web (or other sources) without acknowledgement. There is no particular citation and referencing scheme required but do acknowledge sources that you use.
    - Using or taking credit for the work of other students in your submission without permission and acknowledgement.
- Attracting a penalty by:
    - Leaving work on this assessment to the last minute.
    - Incorrectly naming your submissions.
    - Not using the templates provided.
    - Submitting incorrectly.

GENERAL INFORMATION