National College of Ireland

Higher Diploma in Science in Computing

HDAIML_JAN, HDAIML_JANOL, HDBC_JAN, HDBC_JANOL,
HDCSDEV_INTJAN21, HDCYB_JANOL, HDSDEV_JAN, HDSDEV_SEPOL_YR1,
HDWD_JANOL

Continuous Assessment (100%) project

Object Oriented Software Engineering

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Percentage of overall module grade:

Part 1: 50%
Part 2: 50%

Repeat Strategy (please tick the relevant box)	Repeat project	Repeat Exam
	X	

Module Learning Outcomes

On successful completion of this module the learner will be able to:

LO1	Demonstrate the conceptual, practical and technical skills of planning and monitoring a project plan using an appropriate CASE tool
LO2	Describe in detail the theory, concepts and methods pertaining to Software Engineering such as Agile and UML.
LO3	Create requirements using use case modelling concepts.
LO4	Demonstrate conceptual and technical skills in the analysis, design, implementation and test of a software development solution individually or as part of a team.
LO5	Employ tools and techniques for Software Engineering,

All learning objectives are assessed in the first part of the assessment. LOs 2,4 and 5 are assessed in the second part of the assessment.

Assessment strategy

Module marks for *Object Oriented Software Engineering* will be assessed with one project submitted in two parts.

- Students may work individually or in a team of up to 2 people to design an application to address a specific business domain based on the last digit of your student number as per the table below.
- If working in a team, please select based on the team member that has the first letter of their surname nearest to the beginning of the alphabet.
- Alternatively, you may choose a business domain familiar to a team member, provided that you discuss this with your lecturer and obtain their approval prior to starting work on the assessment.

Last Digit of Student Number	Problem Domain
0 or 5	A takeaway restaurant or an online book publishing service
1 or 6	A pharmacy or driver’s licence renewal
2 or 7	A gym or a retail outlet
3 or 8	An airline or sales of handmade items
4 or 9	An art gallery or a barber shop

Part 1 (50 marks)

Task	Task description	Marks
1	Identify and describe the actors and construct a use case model	8
2	Each team member should describe in detail one distinct use case from the use case model. The use case must contain an alternate flow or exceptional flow.	8
3	Create a conceptual class diagram modelling the architecture of the proposed system. The conceptual class diagram should demonstrate the use of many of the following: attributes, relationships, navigability, association class, multiplicity, and composition.	8
4	Create a glossary that lists and defines all project-related terminology that requires clarification	5
5	Draw a system sequence diagram for one of the use cases.	7
6	Develop contracts for a minimum of two of the system operations.	7
7	Using design patterns, create communication diagrams based on the above two contracts.	7
		50

Part 2 (50 marks)

Task	Task description	Marks
8	Detail and justify how risk, quality and communication will be managed in your project.	10
9	Describe and justify the development methodology you will follow.	10
10	Using an appropriate OO language, such as Java, fully develop the classes required to implement one of the use cases described in part 1 of the assessment.	8
11	Provide detailed artefacts of the agile methodology followed, such as user stories, backlogs and burndown charts	12
12	Create test cases or scenarios to test the classes developed above, naming and justifying the test methodology followed. Describe the tests carried out, detailing how will ensure that the classes are free from errors and detail the results of the tests.	10
		50

Software Tools

- Tools such as Visual Paradigm may be freely downloaded to aid in project preparation.[1]
- Students may also access Rational Rose through the Citrix portal.[2]

[1] https://www.visual-paradigm.com/download/community.jsp
[2] https://vdi.ncirl.ie

Submission

- The report should be uploaded as a two separate documents in PDF format only to the corresponding Turnitin link on Moodle page
- No printed copy is required, please do not print.
- For Part 2 only, you will also be required to upload a code artefact—a zip file containing the classes developed and the suite of tests carried out.
- Late submissions cannot be accepted unless an extension has been officially approved. In case of unjustified late submissions, marks will be deducted based on standard School of Computing policy.
- Please note that the lecturer cannot grant extensions. Extensions can only be granted if approved after the submission of a personal circumstances form. Please consult NCI360 or other support services for further information and to file a form if required.

Academic Integrity

- Your submission must be entirely your work. Collaboration with others outside your team, whether fellow students or not, is strictly prohibited under any and all circumstances.
- All coursework will be electronically screened (via Turnitin) for evidence of academic misconduct including plagiarism.
- In the event that you require clarification on any aspect of this assessment, please contact your lecturer, who will be happy to help clear up any doubts.
- Any written work created by others must be properly cited and should be paraphrased or summarised where possible, otherwise it should be included in quotes.
- Figures not created by you should include an acknowledgement detailing the name(s) of the creator(s).
- Students are strongly advised to familiarise themselves with the Guide to Academic Integrity produced by the NCI Library [3]

Administrative Data

- The assignment must be electronically submitted via Turnitin on Moodle. Please note that email submissions will not be accepted.
- The assessments will be graded by your lecturer, a second marker, and an external examiner, according to standard policy of the School of Computing.

Repeat strategy

- If the combined submissions of Part 1 and Part 2 do not achieve the minimum required pass mark of 40, the module must be repeated.
- The same guidelines will also apply to the repeat project and the student(s) may amend the original project or may submit an entirely new project. Please check with your lecturer before submitting.
- Also before submitting, please consult with your programme coordinator to ensure all administrative requirements have been met.

[3] https://libguides.ncirl.ie/workingremotely/academicintegrity