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**National College of Ireland**

**Higher Diploma in Science in Computing (Software Development),**

**Year 2, HDSDEV\_SEPBL\_YR2**

**Release date: Wednesday, 22 May 2024**

**Due date: Saturday, 10 August 2024 @11.55pm**

**Lecturer: Hamilton V. Niculescu**

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**Project**

**CA1 (Interim report) + Final project brief**

**Submission extension**: If you need to apply for an extension - <https://nci360.ncirl.ie/>

**TURNITIN**: All report submissions will be electronically screened for evidence of academic misconduct (i.e., plagiarism and collusion).

**Use of AI in Teaching and Learning**: Student Guide  
<https://libguides.ncirl.ie/useofaiinteachingandlearning/studentguide>

**Learning outcomes:**

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| LO1 | Specify, analyse, design, implement, test and document a medium to large scale project in the chosen area of specialisation under the supervision of a project co-ordinator |
| LO2 | Explain and justify the use and application of technology for a project |
| LO3 | Develop and enhance communication and presentation skills |

Please read, sign, add date, and submit this document using the upload point on Moodle, by   
**Saturday, 8 June 2024 @11.55pm (week 3), along with your Project Proposal and the NCI Ethics Approval Form**

You are tasked with co-ordinating and delivering a showcase project which demonstrates your ability as a software/web developer or cyber security specialist. This project presents an opportunity for you to implement the skill set which you have acquired. The project you are required to produce will be a combination of a wide variety of skills which include:

* **Conception** – You must identify a project which displays innovation relating to the integration of technologies deployed to achieve your goal
* **Project Management** – You must take the concept identified and use project management skills to bring the concept to completion aiming to develop a commercially viable software tool. Ensuring that you meet each deadline and deliverable date is a crucial element of this process
* **Development** – You must use your skillset to develop a **Software or Web application** that is of excellent standard and comprises of a high level of complexity affording users both practicality and a quality user experience. **Cyber-security students** must enforce a strict adherence to secure programming principles throughout. For this you must implement a complex server-side functionality and integrate client-side scripting which will provide a rich internet application interface for the user
* **Testing –** Throughout the process you must maintain a detailed log of test plans and results. Details should include functionality tests, unit tests, integration testing, security testing, malicious intent testing, etc.
* **Pitching -** Once the project is complete you must pitch the idea through a presentation which showcases the innovation and functionality of the application. This presentation will be a perfect opportunity to show your talents and achievements

## The project

The project which you are about to undertake is entirely based upon concepts identified by yourself. The elements contained in the project will be of your own consideration and the underpinning concept will stem from an area of interest to you.

**However, there are certain criteria which must be met**:

* You must use a server-side programming language to maintain a complex persistent data storage pertaining to the application functionality
* You must use a client-side programming language to present a graphical user interface for the application
* You must produce detailed academic documentation of exceptional quality with academic references, correct structure, and precise formatting suitable for the level you are studying at

Once you stick to the details outlined in this brief, then you will be free to choose the application concept and develop a software tool which interests you.

**This module is assessed with 100% Continuous Assessment, and it is the responsibility of the learner to ensure all project deadlines are adhered to!**

### Start with…

**8 June February 2024 @****11.55pm (week 3)**

1. Signed Project Brief (this document)
2. Project Proposal
3. NCI Ethics Approval Form

### As you go…

**22 June 2024 @11.55pm (week 5)**

1. Project Requirements Specification

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### Interim report…

**29 June 2024 @11.55pm (week 6)**

1. Interim progress report

**N.B. This will be in the form of a written report, weighting 20% of the overall grade**

### Continue with…

**20 July 2024 @11.55pm (week 9)**

1. Project Analysis & Design Documentation

### Live presentations \*

**31 July 2024 (Week 11) and 7 August 2024 (week 12), during class (6pm – 10pm)**

1. Live presentations of your project via Teams. Duration: **5 min. max. each (subject to change),** including any Q&A session.

### Final submission \*

**10 August 2024 @11.55pm (week 12)**

1. Video of the final and complete project
2. Project Final Report, including the Declaration Project Cover Sheet
3. Project Code

### \* weighting 80% of the overall grade

### Marking rubric (next 2 pages)

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| --- | --- | --- | --- | --- | --- |
|  | **H1** | **H2.1** | **H2.2** | **Pass** | **Fail** |
| **Communication (10%)** | The presentation comprehensively outlined the project. The speaker was poised and enthusiastic.  Questions were excellently answered. | The presentation outlined the project in detail. The speaker was poised and enthusiastic. Questions were very well answered. | The presentation outlined the project. The speaker was poised and enthusiastic. Questions were answered. | The presentation somewhat outlined the project. The speaker was poised and enthusiastic. Questions were reasonably well answered. | The presentation is unorganised and unclear. Questions were unanswered/poorly answered. |
| **Writing & Presentation of Results (20%)** | The dissertation is written in a formal academic style; with very clear statements and conclusions and discussion of the project findings and implication, and use proper Harvard Referencing Style (HRS).  Excellent statements and clear presentation of results. Excellent use of illustrations, code samples, etc. Conclusions are clearly supported by the results. | The dissertation is written in a formal academic style with clear statements and conclusions, and use proper HRS;  Very good statements and clear presentation of achievements. For some results more appropriate means of presentation could have been utilised. Conclusions are clearly supported by the results. | The dissertation is written in a formal academic style but missing in conclusions and discussions not perfect HRS  Good statements and clear presentation of achievements. For some results more appropriate means of presentation could have been utilised. Conclusions drawn could be more clearly supported by the results. | The dissertation is not well structured and does not use proper academic style; there are very few references and proper HRS is not used  There is a statement and presentation of results (perhaps incomplete), however, there is a lack of clarity and less effective use of illustrations, code samples, etc. Conclusions are not clearly supported by the results. | The dissertation is poorly written and the statements are unclear and lacks conclusions and discussions and proper referencing style (HRS).  Grossly inaccurate or incomplete presentation and statement of results. Lack of clarity and usage illustrations, code samples, etc. Conclusions are not supported by results. |
| **Complexity / Coding Skills (10%)** | A project that addresses complex issues, using sophisticated software development. | A project that partially addresses some complex issues. | Wide scopes of issues are addressed, but the implementation lacks depth. | A project that does not implement effectively or bypasses some of the more difficult aspects of the proposal. | A project with very little innovative software development. |
| **Innovation (10%)** | An innovative solution based on novel research to produce a commercially viable software tool. | An innovative concept or a novel extension of existing software applications. | An idea that merges ideas from a number of existing sources | A project with limited functionality but with some innovative features | A project that reproduces, without extension, ideas of existing sources |
| **Technology (20%)** | Exploits leading edge features of new or emerging technologies or exploits chosen technologies to the fullest extent possible appropriate to the application. | A project that uses complex or difficult features of technology appropriately.  Exploits many features of the chosen technology | A project that uses less complex technology to a high standard or Integrates a number of technologies | The project uses standard technologies with little innovation | The project uses a standard technology in a very basic and rudimentary manner. |
| **Completeness (10%)** | Project is close to commercial implementation. | Project is excellent but would need more work to attain commercial implementation. | Project demonstrates a good deal of work by the learner, but where the project contains few innovative features. | Functionality is partly complete or obvious extensions are not implemented. | The learner does not understand aspects of the functionality or the implementation. |
| **Testing/ Evaluation (10%)** | End user testing/ Evidence of Evaluation/ System testing | Demonstration of System testing. | Demonstration of testing a main component of the solution. | Demonstration of testing part of a main component of the solution. | No evidence of testing or evaluation. |
| **Project Management (10%)** | Clear, concise and detailed project planning throughout the life of the project. Reference to document trail for revisions to the project scope. Evidence of contingency plans activated in response to pre-planned triggers. Response to scope changes demonstrated clear prioritisation of project goals. | Good evidence of planning, management of risks and reporting procedures, with a nearly complete document trail and evidence of contingency planning and prioritisation. Outcome of project is close to planned outcome | Documentary evidence of realistic and useful planning and continuous monitoring and reporting risks and changes to project scope. Limited prioritisation and use of contingency planning in responding to issues and problems affecting the scope of the project. | Brief Commentary on management process but limited references to documentation trail evidencing project planning, management of risks or management and reporting changes to project scope. | No documentary evidence that project was subject to any serious planning, management of risks or management and reporting of changes to project. |

**Declaration: I confirm that I have read and understand all the deliverables and deadlines for the project module**

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_