Higher Diploma in Science in Computing

Project - Commencing September 2022

Lecturer: Andrew White

Please read, sign, add date, and submit this document using the upload point on Moodle, by **Sunday, 9 October 2022 @Midnight**

You are tasked with co-ordinating and delivering a showcase project which demonstrates your ability as a 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 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 <u>all project deadlines</u> are adhered to!

To start with

- Signed Project Brief (this document) – 9 October 2022 @6pm (week 3)
- Project Proposal – 7 October 2022 @Midnight (week 3)
- NCI Ethics Approval Form – 9 October 2022 @Midnight (week 3)

As you go

- Project Requirements Specification – 23 October 2022 @Midnight (week 5)
- Project Analysis & Design Documentation – 13 November 2022 @Midnight (week 7)

Interim

- Interim progress report – 13 November 2022 @Midnight (week 7)
  N.B. This will be in the form of a written report, weighting 20% of the overall grade

To complete *

- Project Final Report – 11 December 2022 @Midnight (week 12)
- Project Code – 11 December 2022 @Midnight (week 12)
- Declaration Project Cover Sheet – 11 December 2022 @Midnight (week 12)

To present *

- Live presentation of project (duration TBA) – 9 December 2022 @Midnight (week 12), during class
- Video of final project when complete – 11 December 2022 @Midnight (week 12)

* weighting 80% of the overall grade

Marking rubric (next 2 pages)

	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	A project that uses complex or difficult features of technology appropriately. Exploits many features of	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	Good evidence of planning, management of risks and reporting procedures, with a nearly complete document trail and	Documentary evidence of realistic and useful planning and continuous monitoring and reporting risks and changes to	Brief Commentary on management process but limited references to documentation trail evidencing project planning,	No documentary evidence that project was subject to any serious planning, management of risks or management and reporting

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

Signed: _____   Date: _____