MSc Software Development: International Systems Dissertation Types

# Project Type 1

## Description

Crate a prototype system that can manipulate or analyse text, and report on your project. Your project should be able to deal with a large corpus of text, likely in the hundreds of thousands of words and be of sufficient complexity. You should write your own code for the system, using an existing tool to load a text corpus into is not allowed. There are many projects possible, below is an example. You should also consider how to evaluate your outputs.

## Example

Here is an example dissertation although this is based on generas, you may base your on some other text types or look for other features in the texts, try and come up with your own angle maybe do a bit of googling to get some ideas or consider something you already know or perhaps want to look at

The application of Stylometry to the identification of text Genres

Stylometry is the application of the study of linguistic style, usually to written language through the application of some sort of statistical analysis to a body of their work.

Stylometry is often used to attribute authorship to anonymous or disputed documents.It has legal as well as academic and literary applications, ranging from the question of the authorship of Shakespeare's works to forensic linguistics.

One application of Stylometry is to identify different text types. This research will initially consider three genres: Narrative, Non- fiction and poetry (These may be expanded if initial data analysis finds it appropriate).

Your research project will require a number of steps

1. Write an appropriate literature review to gain an understanding what Stylometry is
2. Identify what different Stylometric approaches that you will think may be used as a basis for your prototype Python implementation.
3. Develop a prototype Python system that implements these approaches.
4. Identify suitable texts in the public domain that you will use as test cases to build your system
5. Using your prototype generate data and score each texts in terms of the different genres.

# Project Type 2

## Description

There are a number of projects possible that involve generating code to solve a particular problem. This would be a more research-focused project where the output isn’t necessarily a system you deliver, but you would be required to submit all the outputs you have generated to show the work you have done. One example can be automated generation of keyboard code, another is the example below.

## Example

Generative AI is a transformative tool that automates the procedure of producing code snippets, scripts, and entire programs. It might substantially accelerate software developers output by offering developers pre-written codes tailor-made to specific tasks and functions.

There are already a number of freely available online Generative AI systems. It would be useful to do some comparisons of how each of the quality and correctness of there output given the same input.

Your research project will require a number of steps

1. Write an appropriate literature review to gain an understanding what Generative AI is
2. Identify what different approaches that you will think may be used as a basis for your comparison.
3. Develop a set of prototype question with perhaps human developed example Python solutions.
4. Identify suitable means to compare the generate code for efficiency, correctness and readability.
5. Discuss and score the different Generative AIs you used.

# Project Type 3

## Description

Develop an application and report on your project. The development should be undertaken in one of the languages you have learned throughout your course and consider principles you have learned about throughout. Your project should include an Internationalisation or Human Computer Interaction element and also consider best practices in Testing/Quality and Requirements Engineering. You can develop from scratch or work on an existing project, as in the following example.

## Example

Internationalisation is a general term for the process of designing a game so that it will work correctly in all territories and so that the game can be localised efficiently. This term covers many things that affect a game at a technical or code level, including string table formats, time/date formats, keyboard/controller layouts.

<https://nostarch.com/missionpython>

Your research project will require a number of steps

1. Write an appropriate literature review to gain an understanding what game Internationalisation is
2. Identify what different approaches and techniques that you will use as a basis for your prototype Internationalised game implementation.
3. Develop a prototype Python game that implements these approaches.
4. Demonstrate of your game can easily be modified for a different region or language
5. Review and discuss your findings.