**Software Project Engineering – Project Documentation Portfolio Part A**

The aim of this coursework is not to make more work for you, but rather to “core sample” the work that you should already be doing to fulfil the needs of your client. For each stage in the development process, we are asking you to prepare a small sample of material which, when combined together into a portfolio, will document the entire development lifecycle of your project (apart from long-term maintenance !)

In many ways, this is a realistic activity - in your working lives as developers your projects will most likely come under review as part of a software quality management process. Reviews can take a variety of forms, ranging from very formal, in-depth document and product investigation, through to much lighter-touch sampling reviews. It is towards the gentler end of the spectrum that your projects will be assessed in SPE.

Your portfolio must contain the following sections:

**Overview**

A very brief executive summary (1 page or less) describing your client, the application domain / business sector, the key problem you are trying to solve (or gap that you are trying to fill) and your vision for the product that will provide a suitable solution.

**Requirements**

Provide a comprehensive list containing *all* of the system stakeholders you are able to identified. For each stakeholder provide a suitable name and single (short) descriptive sentence. Include a high-level use-case diagram(s) showing the key actors who engage with the system and the primary functional goals they may wish to achieve. Note: Not all stakeholders will appear as actors in the use-case diagrams ! Not all actors are human !!!

For a core set of the use-case goals, list the sequence of steps involved in achieving each goal. Within this set, describe at least one alternative and one exceptional flow.

Select one goal that you believe to be of paramount importance or of particular interest. For this goal, decompose the flow steps into a set of atomic requirements. Specify both functional and non-functional requirements as structured natural language, using a clear and simple template structure. It is up to you to decide what fields to include in your template, but you are advised to keep things simple (whilst providing as much detail). As with many things, this is a delicate balance to reach !

To give you an idea of the complexity and detail expected in your portfolio, this whole section should occupy approximately 4 pages of A4.

**Development Testing**

Select a core function/component of the system, providing a short justification of why you have selected that particular element. This would typically be a crucial method at the heart of the system. Draw up a table detailing the test cases used to fully and comprehensively test that function/component. We are looking for specific input and output data values. You should aim to provide as complete testing coverage as possible of that core component. This section must not exceed a single sheet of A4 – we are more interested in quality than quantity !

**OO Design & UML**

Provide a sample of a static and a dynamic UML modelling aspect of your system. Together with the diagram provide a section of written text that describes:

* The context within which you created this diagram. This might for example be the use case that you were working on/ modelling.
* The motivation behind your choice of this particular aspect. This might be due to a challenging design decision or uncertainty about the relationship of domain concepts.
* A brief reflection on the modelling choices you made and any knowledge that you gained from this model.

This section must not exceed 3 pages of A4, including the diagrams and their respective analysis.