Faculty of Science, Engineering and Technology

COS30041 Creating Secure and Scalable Software

**Software Design Document(s) for Distinction (D) Grade**

**Prepared by: <Your name, student id>**

**[Optional Feedback, timeline and schedule]**

**Demonstration to Tutor for Feedback: Week 10 – 12 Lab classes**

**[Final Submission]**

**Submission for Portfolio: Week 14, Monday, 9:00am**

**Instructions** - This document is for students aiming to achieve Distinction (D) or above.

**Intended Learning Outcomes (extracted from Unit Outline)**

1. Build and deploy secure and scalable application using contemporary frameworks

2. Explain and apply strategies, patterns and frameworks to address a range of scalability issues

3. Explain and apply strategies, patterns and frameworks to address a range of security issues

4. Use contemporary tools to evaluate the scalability and security of applications

**Software Title: <Your Software>**

**Introduction**

<A brief introduction to the software application you want to develop>

**Business Scenario**

<**A description of the business scenario** that requires you to develop the software application. You need to provide enough context to justify the functionalities of the software to be listed in the Functionality section>

1. **Software Requirements**

**1.1 Requirements Justification**

<This is basically your functionalities / features that you want to implement. You need to explain / justify why you need each of these functionalities / features from the business context.>

1. <Describe an end-to-end function / feature of your software>
2. <Describe another end-to-end function / feature of your software >
3. <…>
4. <…>
5. <…>
6. <…>

**1.2 Functionality and Technology Matrix**

The following table shows the relevant technologies discussed in this subject that could be used to implement the functionalities as suggested in the Functionalities section above.

|  |  |
| --- | --- |
| Functionality | Related Technology discussed in this subject |
| F1 | <a brief description of how you would utilize the related technologies discussed in this subject to implement the required functionality> |
| F2 |  |
| F3 |  |
| F4 |  |
| F5 |  |
| <create more | rows if needed> |

1. **Software Design**

<This section documents your software design. You need to have at least the following:

1. an overall architecture of your software (e.g. is it a 3-tier system or 4-tier system) – What are they? What are their responsibilities?
2. What are the software components in each tier? What are the roles and responsibilities of each of these components in each tier?
3. An explanation of why you made such design choice. Why it is a good one? Or, an explanation that this is not a good design but to implement a better one needs mastering more advanced Enterprise Development programming techniques …

Remember to accompany your descriptions with diagrams, here is some suggestions:

1. Architecture diagram
2. Software Component diagrams in each tier and how they interact with each other
3. Class diagram>
4. **Sample Coding**

<This section documents some samples of your coding that shows the interactions of your software components. For example, if your MDB does not have any business logic (as expected), show the relevant “coding” to demonstrate this.>

1. **Software Testing Results**

<This section documents the results of your testing with the software. Also, you need to demonstrate that you use a “comprehensive” set of test cases to scrutinize your software.>