**Deliverable 3: System Modelling and Architectural Design**

**Food Wastage Application: The Sustainable Spoonful**

**By**

**Lea Thumbiran, Lucinda Zachos, Melany Opperman, Santana Bradbury**

A Mini-Dissertation Submitted as a Partial Requirement for the Bachelor Science in Information Technology: Mobile Application and Web Services

In the Faculty of Information Technology, Eduvos

**Supervisors:**

Mr. William Olivier

Ms. Ndai Mapaso

Date: 15 March 2023

1. **Student Details**

|  |  |  |  |
| --- | --- | --- | --- |
| Student Details | Student Number | Telephone Number | Email Address |
| Bradbury, Santana | CNZJB3199 | 071 864 4170 | cnzjb3199@vossie.net |
| Opperman, Melany | 6P6NPJX46 | 074 709 6778 | 6p6npjx46@vossie.net |
| Thumbiran, Lea | LMTPQFTH6 | 079 898 2004 | lmtpqfth6@vossie.net |
| Zachos, Lucinda | Y34VR5C17 | 071 878 3138 | Y34vr5c17@vossie.net |

1. **Supervisor Details**

|  |  |  |
| --- | --- | --- |
| Supervisor Name | Faculty | Email Address |
| Olivier, William | IT | william.olivier@eduvos.com |

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# Chapter 3: System Modelling and Architectural Design

## 3.1. Introduction

In this subsection, you should discuss an overview of how you plan to approach the design of your app, including you will consider user experience (ux design) as you design the user interface. You should also clearly state your overlapping iterations between design and implementation as you follow the prescribed methodology. However, in this chapter you will only discuss the issues to do with planning, requirements (Presentation Layer), and analysis and design (Business Layer and Data Layer) only. All implementation and Testing discussions will be done in Chapter 4.

Outlay of the design plans, considering mobile app architectural and system designs. Outlay of iterative and incremental design plans and structure of the design process.

## 3.2. Presentation Layer

In this subsection, discuss how you plan to approach the presentation layer of the mobile app architectural design.

## 3.2.1. User Experience

In this subsection, you could discuss the plans for elicitation and analysis of the user feel and expectations of the app.

* User Experience considerations
* Fact-finding Techniques
* Analysis of User Requirements
* Tools and Diagrams used

#### Fact-Finding Technique(s)

In this subsection, discuss the fact-finding techniques used and the facts gathered from the users. You have to eventually compile a ***User Requirements Document*** that will be one of the appendices of your Mini-Dissertation.

#### Facts Analysis

In this subsection, analyse the facts gathered and the user requirements, using preferred tools and techniques.

## 3.2.2. User Interface Design

In this subsection, design the various user screens using preferred tools and also discuss and document the design process.

* Designs
* Design Tools and Techniques
* Designs Look and Feel (Aesthetic, Business Colors, etc.)
* Iterative and Incremental Design

#### Iteration 1

In this section, you may show the designs for the first iteration and you can have the next iteration designs as you follow the iterative incremental development process.

#### Iteration 2

## 3.3. Business Layer

In this subsection, you will discuss and design the business logic of your mobile app.

* Operations and Process Flow Designs
* Data Handling Operation Designs (security, exception handling, data validation, etc.)
* Diagrams
* Iterative and Incremental Design

### Operations/Process Models Design

In this subsection, you will design the control flow of the apps’ operations in line with the interface screens that have been designed and the business flow of the app’s operations. Use some modelling tools and techniques.

### Iteration 1

In this subsection, you may show the designs for the first iteration and you can have the next iteration designs as you follow the iterative incremental development process.

### Iteration 2

### Data Handling Operations

In this subsection you will design the processes of handling user’s and app data, including security protocols, data validation and handling errors and exceptions. Use some modelling tools and techniques.

### Iteration 1

In this section, you may show the designs for the first iteration and you can have the next iteration designs as you follow the iterative incremental development process.

### Iteration 2

## 3.4. Data Layer

In this subsection, you will discuss and develop data for the app. You will decide where the data should be stored, that is, on the app or on a network server.

* Logical Data Models
* Diagrams, Tools, and Techniques
* Iterative and Incremental Design

### User Data

In this subsection, you will discuss and design data structures for the user’s personal data, that may need to be stored on the mobile device.

### Iteration 1

In this subsection, you may show the designs for the first iteration and you can have the next iteration designs as you follow the iterative incremental development process.

### Iteration 2

### System Data

In this subsection you will discuss and design data that is stored as the system functions. It may be necessary for your system to store system wide data. Design those data structures.

### Iteration 1

In this subsection, you may show the designs for the first iteration and you can have the next iteration designs as you follow the iterative incremental development process.

### Iteration 2

## Conclusion

In this subsection you will give a summary of all the models that were designed and the incremental design interleaved with the iterative designs and implementations. However, you will not include detailed information of implementation in this chapter.

# References