**CHAPTER 4**

**Project Title**

**By**

**Students’ Names**

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

Supervisor:

Co-Supervisor:

Date:

1. Student Details
   1. Surname, Initials:
   2. Student Number:
   3. Contact Details (Postal Address, Telephone Number, Email Address): Tel:

Email Address:

1. Supervisor Details
   1. Main Supervisor Details
      1. Surname, Initials, Title:
      2. Contact Details:
      3. Postal Address:
      4. Telephone Number:
      5. Email Address:
2. Co-Supervisor Details
   1. Co-Supervisor Details
      1. Surname, Initials, Title:
      2. Contact Details:
      3. Postal Address:
      4. Telephone Number:
      5. Email Address:

**Table of Contents**

[Chapter 4: System Prototype Development and Testing 4](#_Toc106011560)

[4.1 Introduction 4](#_Toc106011561)

[4.2 Testing Plan 4](#_Toc106011562)

[4.2.1 Testing Type 1 5](#_Toc106011563)

[4.2.2 Testing Type 2 5](#_Toc106011564)

[4.2.3 Testing Type 3 5](#_Toc106011565)

[4.3 Layouts Development 5](#_Toc106011566)

[4.3.1 User Interface 1 5](#_Toc106011567)

[4.3.1.1.1 Iteration 1 5](#_Toc106011568)

[4.3.1.1.2 Iteration 2 5](#_Toc106011569)

[4.3.2 User Interface 2 5](#_Toc106011570)

[4.3.2.1.1 Iteration 1 5](#_Toc106011571)

[4.3.2.1.2 Iteration 2 6](#_Toc106011572)

[4.3.3 User Interface 3 6](#_Toc106011573)

[4.3.3.1 Iteration 1 6](#_Toc106011574)

[4.4 Business Logic Development 6](#_Toc106011575)

[4.4.1 Algorithm 1 6](#_Toc106011576)

[4.4.1.1.1 Iteration 1 6](#_Toc106011577)

[4.4.1.1.2 Iteration 2 6](#_Toc106011578)

[4.4.2 Algorithm 2 6](#_Toc106011579)

[4.4.2.1.1 Iteration 1 6](#_Toc106011580)

[4.4.2.1.2 Iteration 2 6](#_Toc106011581)

[4.5 Data Access Development 7](#_Toc106011582)

[4.5.1 Database Implementation 7](#_Toc106011583)

[4.5.1.1 Database Creation Class 7](#_Toc106011584)

[4.5.1.1.1 Iteration 1 7](#_Toc106011585)

[4.5.1.1.2 Iteration 2 7](#_Toc106011586)

[4.5.2 Data Access Adapters 7](#_Toc106011587)

[4.5.2.1 Accessor Methods 7](#_Toc106011588)

[4.5.2.1.1 Iteration 1 7](#_Toc106011589)

[4.5.2.1.2 Iteration 2 7](#_Toc106011590)

[4.6 Conclusion 7](#_Toc106011591)

[List of Figures 8](#_Toc106011592)

[List of Tables 8](#_Toc106011593)

[References 8](#_Toc106011594)

# System Prototype Development and Testing

In this Chapter, you will implement the components of the app that were designed using Iterative Incremental Development Agile Methodology. This means you may have to improve some designs as you iteratively implement the app designed components. This chapter is closely related to Chapter 3 as expected, and you can refer to the sections of Chapter 3 in your discussions. You will be expected to illustrate the implementations using, screenshots of the app running on the emulator and code snippets (layout xml code or java code). You are not required to copy and paste all the code, but just snippets that you would like to discuss.

You will also create a ***User Guide Manual*** document as part of the Appendices of the Final Mini-Dissertation Document.

## Introduction

In this subsection, you should discuss an overview of how you implemented the designs of your app in Android Studio/Xcode. Discuss your approach to the prototype and how you applied the Iterative Incremental Development Agile Methodology. You can also explain how you factored in the incremental implementation given the incremental development at various iterations (if any).

## Testing Plan

In this subsection, discuss testing plans for your app and choose and discuss Testing Types you will/have performed as you develop the app from the designs. Your Test Plan should detail the type of test, when and by who it will be conducted. See Table 4.1 for guidance.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test Plans** | | | | |
| **Increment** | **Test Type** | **Test Date** | **Team Members** | **…** |
|  |  |  |  |  |

Table 4.1: Test Plan

### Testing Type 1

In this subsection, you could discuss the plans for this particular Test Type and design a testing report. Also indicate how you plan to respond to the test results as you continue to design and implement the app.

### Testing Type 2

### Testing Type 3

## Layouts Development

In this subsection, you will demonstrate the development of the layouts from the User Interface Designs. Consider incremental designs in your demonstrations. You can use pseudocode and/or xml and java code snippets, or even screenshots of the app running on the emulator, for your demonstrations, combined with verbal explanations where necessary. You don’t have to show all the code, but snippets of the important parts that warrant discussions.

### User Interface 1

In this subsection, demonstrate and illustrate the first/main layout of your app.

##### Iteration 1

In this subsection, you may show the implementation at iteration 1 of this main layout for your app.

##### Iteration 2

In this subsection, you may show the improved implementations of this main layout as you incrementally develop your app with user feedback on your prototype.

### User Interface 2

In this subsection, you can discuss the implementation of the second layout screen of your app.

##### Iteration 1

In this subsection, you may show the implementation at iteration 1 of this layout for your app.

##### Iteration 2

In this subsection, you may show the improved implementations of this layout as you incrementally develop your app with user feedback on your prototype.

### User Interface 3

#### Iteration 1

## Business Logic Development

In this subsection, you will demonstrate how you implemented the Busine Logic of the app, clearly detailing the response to user interactions and operational flow from layout to layout. You will demonstrate the algorithms that have been used to implement the Business Logic and the algorithms that solve the operational challenges. You can use code snippets to demonstrate the implementation, but do not copy and paste all the lines of code, but the snippets that need discussion. You can also discuss special technologies (like Location Services, Google Maps, Cameras, Sensors, etc) used and justify their use.

### Algorithm 1

In this subsection, you will illustrate the line-by-line code used to solve particular operational challenges in your app.

*You can change the subheading to an appropriate one, given the illustration you are making and the names given to the classes or methods.*

##### Iteration 1

In this subsection, you may show the step by step incremental improvements on the code, into the iterations of your development process.

##### Iteration 2

### Algorithm 2

##### Iteration 1

##### Iteration 2

## Data Access Development

### Database Implementation

In this subsection, you can discuss the plans and choices of platform for implementing the database for your app. You can discuss the justification of the chosen platform and the anticipated benefits of that platform for your app.

#### Database Creation Class

In this subsection, you will illustrate snippets of code from the class that implements the database and the tables in the database

##### Iteration 1

In this subsection, you may illustrate the incremental improvements on this code and drill down to the iterations of the incremental development and implementation

##### Iteration 2

### Data Access Adapters

In this subsection, discuss and illustrate the class used to access the data from the database. Snippets of code can be shown together with screenshots of layouts showing the extracted data.

#### Accessor Methods

In this subsection, illustrate the algorithms used to retrieve data from the database. You can show the incremental developed of these algorithms and methods.

##### Iteration 1

In this subsection, you may illustrate the incremental improvements on this code and drill down to the iterations of the incremental development and implementation

##### Iteration 2

## Conclusion

In this subsection you will give a summary of all the design implementations and an overall summary of the technologies used. You also may give an insight into how you integrated design and implementation in the incremental and iterative development processes.

# List of Figures

The list of figures identifies the titles and locations of visuals (figures, drawings, photos, maps) in your research proposal or mini dissertation.

# List of Tables

[Table 4.1: Test Plan 3](#_Toc106011508)

A list of tables is a reference tool that allows your readers to navigate to data quickly and easily in your thesis or dissertation.

# References

All references used in writing the dissertation (whether direct quotations or paraphrasing) should be included in a reference list/bibliography, compiled in alphabetical order by author. The Harvard system for listing references should be used.