

# Imus Institute of Science and Technology

UNDERGRADUATE THESIS

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## Assessment Software

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*A thesis submitted in fulfillment of the requirements  
for the degree of BS in Electronics Engineering*

*in the*

*Engineering Department*

June 19, 2021



## Declaration of Authorship

I, John Jeruel TIONGCO, declare that this thesis titled, "Assessment Software" and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.
- I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

Signed:

Date:



## Imus Institute of Science and Technology

### *Abstract*

Engineering Faculty  
Engineering Department

BS in Electronics Engineering

**Assessment Software**

by John Jeruel TIONGCO

The project aims to explore the possibility of modernizing assessment procedures via software developed using industry standards such as AGILE, UP, UML and many others. The paper can treated as a *blue print* and the *alpha version* of the software a *proof of concept*. The paper also contains many software development artifacts such as a *use case model*, *class diagrams*, *interaction diagrams*, and many other models.

This project does not aim to, first, justify the existence of the project by presenting a robust *business case*. Second, produce a software up to its *end of life-cycle*.



## *Acknowledgements*

First, I would like to thank Engr. Berone Bunyi, my advisor, for guiding the project and providing support at every turn.

To Engr. Arnold Balbuena as my mentor and father of the engineering department.

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# List of Abbreviations

**LAH** List Abbreviations Here  
**WSF** What (it) Stands For



*To Aleli, Bambam, Pimpim, and my Family, Thank you...*



# Preface

The Preface is an optional read but contains vital information on how the paper was structured, the resources used in creating the software and writing the paper itself, and finally additional resources such as the online repository of the project.

## Structure of the Paper

Although the paper is labeled as thesis it is virtually a capstone project. This is more evident when the only requirement given is that it should have a prototype. And so the suggested format from the article “Guidelines in Writing Design Project / Research Project Proposal” doesn’t seem to frame the project properly. Be that as it may, in order to comply and frame the project properly, I superimposed the *Universal Process Phases: Inception, Elaboration, Construction, and Transition* over the suggested format in the following manner:

**Chapter I–The Problem and Its Setting *superimposed with Inception*** – Contains the subsections *Vision, Business Case, Supplementary Requirements, Use-case Model, and Iteration Plan* which replaced the subsections *Introduction, Statement of the Problem, Objectives of the Study, Importance of the Study, and Scope and Limitations of the Study* respectively. The lack of the subsections *Definition of Terms* and *Conceptual Framework* is addressed on the next chapter.

**Chapter II–The Problem and Its Setting *superimposed with Elaboration Pt. 1*** – This chapter completely deviates from the suggested format since there are no hypothesis to prove or a conclusion to draw. There are also no conceptual framework on which the project can be framed into. Instead this chapter is spent on creating that *conceptual domain* with the help of a *class diagram* in **UML**.

**Chapter III–Methodology *superimposed with Elaboration Pt.2 and Construction* – description**

In addition the manual of the software can be found in “Cross Ref” appendix

## Software, Standards, and Technology Used

Below is a table enumerating all the software, standards or languages, and other technologies used in the creating the software and the paper itself.

TABLE 1: Resources Used in the Project

Resource	Function	Link
Qt5	UI IDE	some link

## **Repository**

Repo Link

## Chapter 1

# Inception

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## Objectives

- Establish what the software should be. Possibly what it will be in the future
  - test
- 

### 1.1 Vision

#### 1.1.1 Introduction

The purpose of this document is to collect, analyze, and define high-level needs and features of the Assessment Software. It focuses on the capabilities needed by the stakeholders, and the target users, and why these needs exist. The details of how the *Assessment Program* fulfills these needs are detailed in the use-case and supplementary specifications.

##### 1.1.1.1 Scope

##### 1.1.1.2 Reference

#### 1.1.2 Positioning

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##### 1.1.2.1 Problem Statement

##### 1.1.2.2 Product Position Statement

#### 1.1.3 Stakeholders and User Descriptions

##### 1.1.3.1 Stake Holder Summary

##### 1.1.3.2 User Environment

##### 1.1.3.3 Key Stakeholder or User Needs

### 1.1.4 Product Overview

### 1.1.5 Product Features

### 1.1.6 Other Product Requirements

## 1.2 Business Case

One of the goals in the inception phase is to determine whether a new system is feasible and worth exploring. “feasible” is straight forward, while “worth exploring” is somewhat vague. To clarify the term, by saying a project is worth exploring is tantamount to saying the project is profitable. By creating a *business case* both those risk, as they are termed in the industry, are analyzed and ultimately justified. But as it stands I find that building a *business case* for this project to be redundant.

### 1.2.1 Rationale for Leaving Out Business Case

The rationale for leaving out *business case* is that both questions asked in this section already has answers. Yes, the project is feasible, it has to be, otherwise the project would be canceled<sup>1</sup>. Is the project profitable? The question is invalid since the project is meant to be *open-source*. Now the question is “Is it valid to leave out the building the business case for the project?”. Yes, it is perfectly valid<sup>2</sup>. An artifact’s function is to serve as utility for the project or the development of a program. In this case building a *business case* doesn’t provide any utility and will only consume resources.

In addition *business cases* are a project by themselves. It may contain sections such as *executive summary*, *problem statement*, *analysis of the situation*, *solution options*, *cost-benefit analysis*, etc.... It is best that such studies and analysis are left to those who have expertise in the subject matter<sup>3</sup>. As an engineering student I think such endeavors is out of my field of study.

## 1.3 Supplementary Requirements

Some requirement used

## 1.4 Use-case Model

Text Model of most important use case

## 1.5 Iteration Plan

Contains the story map from project

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<sup>1</sup>The paper is an undergrad course requirement. The student of course has to fund it to complete the course.

<sup>2</sup>biblio craid larman

<sup>3</sup>Say students of business disciplines such as BS Accountancy or BS Business Management

## Chapter 2

# Elaboration Pt. 1

### Objectives

- Establish what the software should be. Possibly what it will be in the future
- test test

## 2.1 Main Section 1

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### 2.1.1 Subsection 1

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### 2.1.2 Subsection 2

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## Chapter 3

# Elaboration Pt.2 and Construction

### 3.1 Main Section 1

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#### 3.1.2 Subsection 2

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### 3.2 Main Section 2

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## Appendix A

# Frequently Asked Questions

### A.1 How do I change the colors of links?

The color of links can be changed to your liking using:

```
\hypersetup{urlcolor=red}, or  
\hypersetup{citecolor=green}, or  
\hypersetup{allcolor=blue}.
```

If you want to completely hide the links, you can use:

```
\hypersetup{allcolors=.}, or even better:  
\hypersetup{hidelinks}.
```

If you want to have obvious links in the PDF but not the printed text, use:

```
\hypersetup{colorlinks=false}.
```



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