Mzuzu University
Department of Information and Communication Technology (ICT)
Systems Projects – ICT4804
Detailed Design Document Template

Note:
Some of the sections of this template may not apply to your system. This template is just a starting point, use your own judgment to adapt it intelligently.

This is where you lay out all the details **(Answers the how question)** of your proposed system. The DD will not only provide a valuable reference for your customer when the system is complete, but it will also serve as your blueprint during the coding phase of your project.

Title Page

Contains the name of project, date of submission, document version number, student name and student registration number.

Abstract

A one-to-three paragraph summary of the problem solved by this project.

Table of Contents

Provide major headings and page numbers. The page footer should contain the page number ("Page x of y,").

1 Introduction

1.0 Background

This section provides an overview of the entire design document. The overview should include brief description of database, architectural, interface and component-level design for the software

1.1 Goals and Objectives

Describe overall goals and objectives to be realized by the proposed system.

1.2 Scope of Solution

Describe the boundaries of the solution here. State what functionality is included and what is excluded. A rationale for which parts are excluded should also be included.

1.3 Constraints

List any unusual factors that may impede the expedient implementation of full functionality of the product. There is no need to include the obvious constraints of staying within budget or on time unless one or both of these constrains is unusual in its severity.

1.4 Overview of the Document

In summary, provide a breakdown of the remainder of the document.

2 Architectural and Component-Level Design

2.0 Introduction

The introduction provides an overview of the section.

2.1 System Architecture

Describe the overall system architecture (MVC, client-server, Micro Service Architecture, etc.) and explain the relationships between all of the system components/module and/or subsystems .

2.1.1 Architectural diagram

Include a pictorial in UML (Activity, Sequence, State machine Package or component diagrams) or DFD (Level 0, Level 1, Child process)) representation of the system and its constituent components.

2.2. Description of Components

Supply a detailed description of the constituent processes of each component. Include the important data items of each process, and give a brief description of each process. Suitable DFD or UML diagrams should be provided to illustrate a further break down of the processes.

2.2.1 Process Analysis

Process #

Process name:

Attributes: (Data elements/variables)

Precondition :

List any assumptions that must be true in order for process # to operate correctly. An example is that Process # may assume that a certain Internet connection has been established.

Postcondition: Describe the changes to the state of the system that have occurred as a result of the execution of this module.

Algorithm: List the steps (pseudo code, perhaps) taken by this component to achieve its intended purpose

Error handling/Exception processing: Describe any error processing that is not made clear in the description of the algorithm.

2.3 External system interfaces

Describe all interfaces to other systems, products, or networks if any. Include details as to the names, data types, and order of all parameters passed to other systems or components.

3 Data Architecture

Describe all persistent data items including temporary data items.

3.1 Data dictionary

Describe data items that are passed among components of the software.

3.2 Entity-Relationship Diagram

Provide a graphical representation of the entities and the relationships between them.

3.3 Database schema

Outline the description of your database. Include descriptions of the database structure and the constraints that should hold on the database using a formal language supported by a database management system.

4 Graphical User Interface

4.1 Description of the user interface

Present a detailed description of the user interfaces of the software including screen images.

4.1.1 Screen images

Present the interface from the user's point of view.

4.1.2 Objects and actions

Identify major screen objects and actions.

For each form in the graphical user interface, provide:

- The names of the controls and fields on that form,
- The names of the events, methods, or procedures that cause that form to be displayed, and
- The names of the events, methods, or procedures triggered by each control.

4.2 Description of Reports

This is a description of major reports provided by the system (if any). For each report, provide its format/layout.

5 Quality Assurance

This section presents the detailed test case specifications for the modules described in Section 2.2 and for the entire system. This may include test case/data to perform both black box and white box testing. Also include any other means by which the quality of the product will be evaluated.

5.1 Detailed Test Plans

5.1.1 Test Plan for Component #1

A Simple Case: A test value that establishes the basic correctness of the process.

Legal input values: Test values within the boundaries of the specification equivalence classes. This shall be input data the program expects and is programmed to transform into usable values.

Illegal input values: Test equivalence classes outside the boundaries of the specification. This shall be input data the program may be presented, but that will not produce any meaningful output.

Special Cases: Input cases that are not identified by the specification. Such as nonsensical data (i.e. negative numbers or characters), pressing several input keys at once, *or any other test case the test designer feels has a good chance of exposing an error.*

5.1.2 Test Plan for Component #2

5.1. n Test Plan for Component #n

6 Summary

7 Appendices

8 Glossary

9 References

Use IEEE referencing style