INTERNATIONAL UNIVERSITY OF EAST AFRICA

FACULTY OF SCIENCE AND TECHNOLOGY

GUIDANCE ON HOW TO ORGANIZE CONTENT IN CHAPTERS OF YOUR GRADUATION PROJECT REPORT.

CHAPTER ONE: INTRODUCTION
This should contain the following sections;

1.1 Background to the Study. This should give a brief background about the company or organization or the problem you are addressing. By the time you finish this section, the reader should clearly see that indeed there is a problem in the operations of the organization. You need to support your arguments and in this section with references (following APA style)

1.2 Problem Statement. This should state the problem that your project addresses.

1.3 Objectives of the Study. This should have the Main Objective and the Specific Objects. The main objective is a general object of the project and focuses on what the problem is. The specific objectives focus on what you intend to do to achieve the main objective.

For example, suppose your project title is "A Web-based Customer Relations Management Information System for Wonder World Kansanga", then the Main Objective would be "To develop a web-based customer relations management information system for Wonder World Kansanga". The specific objectives would be

- To study the current system of customer relations management at Wonder World Kansanga and identify the requirements of a web-based customer relations management information system.
- To design a customer relations management system for Wonder World Kansanga based on the above requirements
- To implement the above designed system
- To test and validate the above system.

1.4 Scope of the project

This should state the boundaries of your project. It should indicate both the geographical scope and functionality scope. In geographical scope, you need to tell for example which department will use this system. In functionality scope, yo would need to tell what the system can do and what it can't do in that department.

1.5 Significance of the project
Here you need to tell how important your system in this project will be to the

department/organization/community . In other words, can that department/organization/community fail in its operations without your system?

CHAPTER TWO: LITERATURE REVIEW

Suppose the title of the project is : A Web Based Patients Management Information System. The literature Review of the project could be organized as shown below.

2.1 Introduction

Give a brief introduction about the chapter.

2.2 Patients Management Information Systems

In this section, you would give content that focus on answering the following questions

- What are patient management informations systems?,
- How do they work?
- What are their advantages and disadvantages in health institutions?

2.3 Case studies of Patients Management Information Systems

Get at least two case studies of systems related to the one being developed in the project and for each of them,

- State where and why it was developed
- Explain how that system works
- Identify the weaknesses of such a system in managing patients information in a health facility.

Make a comparison of each of these systems with the proposed system using a table like the one below;

System Feature or characteristic	Name of first case study system	Name of second case study system	Name of the proposed system in this project
e.g Manages patients records	Yes	Yes	Yes
Prints Patients Health Reports	No	No	Yes
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NB: the students should complete such a table and the 'Yeses' on the proposed system should help in showing the gap being filled. The students can as well use other means of presenting the differences between the systems other that using Yes/No assessment on systems features. For example, you can choose to tell us the kind of weaknesses in system in printing reports.

2.4 Conclusion

This should be brief. At least a paragraph and should summarize what the student has seen from the review of literature.

CHAPTER THREE: METHODOLOGY

This chapter should explain the steps followed and the tools and techniques used to achieve the objectives of the project

3.1 Introduction. Give a brief introduction to the chapter, like what it contains and what it aims at.

3.2 System Study Tools and Techniques.

This should tell the tools and techniques used to collect data or study the system. For each tool/technique used, you need to tell how it was used. For example, if you used a questionnaire, you would have to tell us how the questionnaire was used to correct the data (and not what the questionnaire is!). Note that you will need to put a copy of the data collection tool used in the appendix section of your work.

3.3 System Analysis and Design

In Systems Analysis, you should tell the tools used in analysis and design. If you have the data collected, how are you analyzing it to determine system requirements? Are you using SPSS or Ms Excel to analyze the data?

In System Design, you should tell the tools used in modeling the system. For example, if your system is a data based application, you would tell tools used in process modeling and data modeling. Process modeling would involved modeling the flow of information and sequence of event as they occur in the system you intend to design. In such a case, tools like Data Flow Diagrams, Use Case and a Sequence Diagram, Activity Diagrams, Flow Charts, e.t.c would be helpful. In Data modeling, you would be engaged with modeling the back end f the system that would result into a data model. Tools like Entity Relationship Diagram or Class Diagram would be helpful to you.

3.4 System Implementation

Which tools will you use to implement the design above? For example, which programming language will you use to implementation the front end of the system? Which database management system will you use to implement the back end(i.e. the database)? You need to explain how each of these tools will be helpful to you in implementation(and not what it is).

3.5 System Testing and Validation

Here you need to tell the techniques that you will use to test and to validate the system. For example, will you use unit testing and integration testing?

CHAPTER FOUR: SYSTEM STUDY, ANALYSIS AND DESIGN

Chapter four is usually the core of the project and thus much care should be taken in this chapter. The following order is based on a database project that involves modeling of processes and data in the design.

4.1 Introduction
Give a brief description about the chapter.

4.2 System Study
Here the student presents the results of data collection. He explains the present situation and how business is conducted and also identifies the challenges with the present system.

4.3 System Analysis
Here the student gives specification of the proposed system based on the results of system study. In other words,requirements are presented here

4.3.1 User Requirements
4.3.2 Functional Requirements
4.3.3 Non-functional Requirements

> *[It is wise not to put here system requirements(i.e the minimum requirements of the system in terms of hardware and software) because the system is not yet implemented and thus you can't be sure of such requirements. Such can be stated after testing the system in chapter]*

4.4 System Design
This should be divided into two parts; process modeling and data modeling but you can also include the architectural design of the system

4.4.1 Architectural Design of the System
This should diagrammatically represent the system and its components and how they are interconnected. It should represent how your system will be logically organized in the actual working environment.

4.4.2 Process Modeling
Here the student can choose to use the OOAD approach with use cases and sequence diagrams to show the flow of information and the sequence of events as the occur in the system and the participants in the system.
Alternatively, the student can use the Data Flow Diagrams. The context Diagram should be used to show the system at abstract level and the Level-1 DFD should be used to show the various external entities interact with processes in the system. The DFD should have a key of symbols used and a data dictionary which clearly explains the processes, the external entities, data stores, data flows and data reports.

4.4.3 Data Modeling
a) Data Requirements. These should be conditions about the data to be modeled. *For example if the system manages patients records, then who is a patient?, what data is captured about a*

patient?, which fields are unique about a patient?

b) Identification of Entities and Attributes. From data requirements, identify the entities and their associated attributes. These could be put in a table.

c) Modeling of Entity Relationships. Here, model the relationships between the participating entities. For example, how is Patient related to Doctor or Disease? What is the cardinality of such a relationship? Represent these relationships with diagrams and ensure that design principles are adhered to. For example, all M:M relationships should be addressed to rule out any chances of database anomalies.

d) Class Diagram or Entity Relationship Diagram of the system. Depending on the choice you made in the methodology, you can draw a class diagram or ERD to represent your data model.

e) Structure of Relations for the Database. This aims at mapping the ERP or Class Diagram on the relational schema. It presents the structure of the relations/table of the database. For example, the Patient relation could look like this

Field Name	Data Type	Constraint
PatientID	varchar(20)	Primary Key. Not Null
….	…	…
…	…	…
DoctorID	varchar(15)	Foreign Key. References Doctor(DoctorID). Not Null

NB: This should mark the end of Chapter Four

CHAPTER FIVE: SYSTEM IMPLEMENTATION, TESTING AND VALIDATION RESULTS

5.1 Introduction
Introduction to the chapter

5.2 Functions Provided by the system
What are the functions provided by the system to each of user categories. In other words, if a system admin logs into the system what can he/she do? If another staff logs into the system ,what modules can he/she access?

5.3 Sample Screen Shots
Give some sample screen shots and explain each of them. These should be few and focus on data input forms and data reports that show that functional requirements were achieved.

5.4 System Testing and Validation Results

For example, how many tested the system? How many said what? What were their suggestions that would help to make the system better?

5.5 System Requirements

What are the minimum requirements for the system to perform its functions in terms of hardware and software?

CHAPTER SIX: CONCLUSION AND FUTURE WORK

This should give a summary and conclusion from the study. Future work should tell us how other researcher can extend your work. In other words what do you feel you did not achieve that you want other people to work on in the future?

REFERENCES

Provide a list of references used in your project. At IUEA, we use APA Referencing Style. You must format your references following this style. The document to guide you on APA style is available for download on our *iClass* platform but you also search it and get it online.

APPENDIX

This should contain anything you feel is important for your project. For example, you could include some sample pictures of documents reviewed like receipts, forms, e.t.c. You can also include some other screen shots that you did not put in chapter 5 but you want the examiner to look at them.

You should also include the pseudocode of the key functions of your system. *Please note that source code is not allowed in the appendix.*

Wishing you the best.

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