KYAMBOGO UNIVERSITY

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER SCIENCE

UNDERGRADUATE RESEARCH PROJECT/ REPORT GUIDELINES (SHORT VERSION)

COMPONENTS OF A RESEARCH PROJECT AND REPORT

This section discusses the components of a research Project/Report, which include the following chapters and sub-sections/sub-headings.

Front Page: Title/Topic, author info, partial fulfillment statement (**Title page not numbered**)
Preliminary Pages: Include the following (each on its own page).

Declaration
Approval
Dedication (**Optional**)
Acknowledgement
List of Acronyms
Definition of Terms Used (**Optional**)
Table of Contents
List of Figures
List of Tables
Abstract (**Optional**) (All these pages should be numbered in **roman system**)

CHAPTER ONE: INTRODUCTION

1.0 Introduction/ description of the sector /industry of your study
1.2 Background to the Study
1.3 Problem Statement
1.4 Objectives
  1.4.1 General Objective/Purpose
  1.54.2 Specific Objectives of the Study
1.5 Research Questions
  1.5.1 General Research Question
  1.5.2 Specific Research Questions
1.6 Scope of Study
  1.6.1 Subject Scope
  1.6.2 Geographical Scope
  1.6.3 Time Scope
1.7 Significance of the Study
1.8 Chapter Summary

CHAPTER TWO: **LITERATURE REVIEW**

A student is expected to review the literature based on the variables in the Topic/title of the research, conceptual frame work variables and in relation to his/her objectives or based on theories, models and frameworks underlying your research.

For example, if the Title/Topic is:

An Inventory Control and Management System for Drugs in the Pharmacy Department of a Hospital

The following are sample/possible sub-sections/sub-headings

2.0 Introduction
2.1 Types of Information Systems
    2.1.1 Management Information Systems
    2.1.2 Enterprise Information Systems
    2.1.3 Decision Support Systems
2.2 Inventory Control Systems
    2.2.1 Types of Inventory Control Systems
    2.2.2 Inventory Control Systems for Hospitals
2.3 Database Systems
    2.3.1 Advantages of Database Systems
    2.3.2 Disadvantages of Database Systems
2.4 Database Management Systems
    2.4.1 Components of a DBMS
    2.4.2 Functions of a DBMS
2.5 Comparison of a Database System and an Inventory System
2.6 Chapter Summary (Each chapter should be **summarized/concluded**)

CHAPTER THREE: RESEARCH METHODOLOGY

Sample sub-sections/sub-headings for this chapter could be (this concerns the computing disciplines: Computer Science, Information Technology, Information Systems, Computer Engineering, Business Computing, Software Engineering and related disciplines, e.g., Information Sciences).

3.0 Introduction
3.1 Research Design (**Optional**)
3.2 Population and Sample Selection (**Optiona**l)
    3.2.1 Sampling Strategy
    3.2.2 Sample Size Determination
3.3 Research Instrument Design and Testing (**Optiona**l)
    3.3.1 Reliability Testing
    3.3.2 Validity Testing
3.4 Data Collection and Analysis Methods (**Describe only those to be/that were used**)
    3.4.1 Interview Method
    3.4.2 Questionnaire Method
    3.4.3 Document Review Method
    3.4.4 Focus Group Method
    3.4.5 Experimental Design
    3.4.6 Data Analysis Methods (**optional**)
        (Quantitative (statistical) methods: e.g., SPSS; Qualitative methods: Content Analysis, e.g., Atlas.ti, Nvivo,

(**The following sub-sections should be based on the Systems Development Life Cycle (SDLC**) **see SAD**)
3.5 Systems Study and Analysis Methods (**Describe methods to be /that were used**)
    3.5.1 Systems Study Methods
    3.5.2 Systems Analysis Methods
3.6 System Requirements and Specification (**Describe methods to be /that were used**)
    3.6.1 User Requirements

3.6.2 Functional Requirements
3.6.3 Non-Functional requirements
3.6.4 System Requirements

3.7 Systems Design and Modeling Methods (**Describe only methods to be /that were used**)
3.5.1 System Design and Modeling Using Entity –Relationship (E-R) Diagrams
3.5.2 System Design and Modeling Using Unified Modeling Language (UML)
3.5.2 System Design and Modeling Using Data Flow Diagrams (DFDs)
3.5.3 System Design and Modeling Using the CISCO Packet Tracer, etc.

3.8 System Implementation, Testing and Validation Methods (**Describe only methods to be /that were used**)
3.8.1 System Implementation Method(s)
3.8.2 System Testing Method(s)
3.8.3 System Validation Method(s)

3.9 Chapter Summary

CHAPTER FOUR: SYSTEMS ANALYSIS AND REQUIREMENTS COLLECTION

Sample sub-sections/sub-heading of this chapter are:

4.0 Introduction
4.1 Description of the Current System (**Describe the current system using SAD/SWOT Analysis**)
4.1.1 Strengths of the Current System
4.1.2 Weaknesses of the Current system
4.1.2 Comparative Analysis of the Strengths and Weaknesses
4.2 Requirements of the New System
4.2.1 User Requirements
4.2.2 Functional Requirements
4.2.3 Non-Functional Requirements
4.2.4 System Requirements
4.3 Chapter Summary

CHAPTER FIVE: SYSTEM DESIGN, IMPLEMENTATION, TESTING AND VALIDATION

5.0 Introduction
5.1 System Design Using Data Flow Diagrams (**Describe this if it is what was used)**
5.1.1 Context Diagram
5.1.2 Level 0 Diagram
5.1.3 Level 1 Diagram etc.
5.2 System Design Using Entity-Relationship Diagrams (**Describe this if it is what was used)**
5.2.1 Identified Entities and their Attributes
5.2.2 Entity Diagram
5.3 Database Design (**or whatever is appropriate here**)
5.3.1 Database Tables
5.3.2 Data Descriptions
5.4 System Implementation

Note:

THE RESEARCH PROPOSAL

The research proposal consists of:

Front Page: Title/Topic Page
Preliminary Pages: Include the following (each on its own page).
Declaration Page: where both the student/researcher and supervisor sign
List of Acronyms
Definition of Terms Used (**Optional**)
Table of Contents
List of Figures (**Optional**)
List of Tables (**Optional**)

Chapters One: Introduction
Chapter Two: Literature Review
Chapter Three: Methodology

References/Bibliography
Appendices (including Research Instruments (Questionnaire, Interview Schedule, etc, if these are to be used), Budget, and Time Line/Schedule

It uses future tense for chapters 1 and 3

3. FRONT (TITLE) PAGE AND PRELIMINARY PAGES

The ***title/topic*** normally appears on what is referred to as the **"*front page or title page*"** of the project/report, which, in addition to the title/topic, includes the following:

- *Title/Topic:* which should contain and provide sufficient information to the reader to enable him/her make well-informed judgment about the topic, level of study and what will be/was researched on.
- *Author's (researcher's) name*
- *Author's (researcher's) registration number*
- *Author's (researcher's) previous qualification(s) (optional)*
- *Author's contact E-mail and/or Telephone number (optional)*
- *A partial fulfillment requirement* statement.

Sample Front Page/Title Page

AN INVENTORY CONTROL AND MANAGEMENT SYSTEM FOR DRUGS IN THE PHARMACY DEPARTMENT OF A HOSPITAL

CASE STUDY: ABC INTERNATIONL HOSPITAL

BY

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A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, FACULTY OF SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELORS DEGREE IN INFORMATION TECHNOLOGY AND COMPUTING OF KYAMBOGO UNIVERSITY

MARCH 2018

The ***preliminary pages*** include the following as **headings**, each ***on its own page***, ***on top of the page***, and ***centered*** on that page.

DECLARATION

The following text should be on this page:

I, **Okello Peterkin Darlington**, declare that the work presented in this research project/ report is my original work and has not been submitted to any University or Institution of Higher Learning for any academic award. All work from other authors has been fully and properly acknowledged and cited.

Signature :……. Date:……

Okello Peterkin Darlington
(Researcher)

APPROVAL

The following text should be on this page:

This is to certify that this research project/report titled: "***An Inventory Control and Management System for Drugs in the Pharmacy Department of a Hospital"*** has been carried out under my/our supervision and is now ready for submission to the Examinations Board and Senate of Kyambogo University.

Signature :……. Date:……

Assoc. Prof. Kaly'amaggwa Isaac
(Supervisor)

Signature :……. Date:……

Ms. Akech Sauya Turyagenda
(Supervisor)

DEDICATION (Optional)

You may (optionally) dedicate this to those persons dear and close to you, who have made some sacrifice/contribution towards your academic and/or life success.

ACKNOWLEDGEMENT

You may acknowledge/thank/appreciate all those persons that have helped you with your research or with your studies generally. People who were interviewed, filled the questionnaire (not to be acknowledged individually, but collectively), those who helped you with reading resources, equipment, advice and guidance about the research/studies, the sponsors of your studies, etc., may be acknowledged here.

LIST OF ACRONYMS

Any acronym/abbreviation used should be explained here, e.g.,

CAD	Computer Aided Design
SWOT	Strengths, Weaknesses, Opportunities and Threats
EPC	Event-driven Process Chains
ICT	Information Communication Technology
UCC	Uganda Communication Commission

etc.

DEFINITION OF TERMS USED (Optional)

Terms that have been operationalized in your research should be defined here.

E-Learning E Learning refers to the use of information and communication technologies (ICT) in different processes of education to support and enhance learning (Fredericksen et al., 2000; Maeroff, 2004; Leasure et al., 2000). In this research, E-Learning refers to the learning process delivered via online methods and ICT resources rather than the "Chalk-and Talk method".

LIST OF TABLES

List all the tables that appear in your different chapters on this page. They should be in the format of table of contents. For example:

LIST OF FIGURES

List all the figures that appear in your different chapters on this page. They should be in the format of table of contents. For example:

etc.

TABLE OF CONTENTS

Generate a **Table of Contents** (TOC) from your marked headings and sub-headings, including the **preliminary pages**, **chapters headings and sub-headings;** and **appendices**.

Note: Table of Contents, List of Tables and List of Figures are all automatically generated (in MS-Word) if your have marked your **headings**, **sub-headings** (in the preliminary pages, chapters and appendices), **figure captions** and **table captions**.

ABSTRACT (Optional)

You may (optionally) summarize your research in an abstract which is sort of an **executive summary** of your research. In the **1st paragraph** briefly talk about the **problem** that your research attempted to address and the **purpose** or **main objective**. In the **2nd paragraph** briefly talk about the **methodology and methods** used to address the problem. In the **3rd paragraph** talk about the **major findings or results** (this could be a system developed or any other important findings). In the **4th paragraph** talk about your main **recommendations**.

Note: The Language used is **past tense**, except **recommendations**.

Sample Abstract

This research (or study) investigated the problem of drug purchasing, storing/keeping and dispensing in hospital pharmacies using ABC Hospital pharmacy as a case study. One of the major problems cited in hospitals pharmacies is that they lack an efficient and effective method of ordering, storing and distributing drugs to the different wards. The main purpose of the study was to develop a drugs inventory system to overcome these problems.

A System Engineering methodology using the System Development Life Cycle (SDLC) approach was used to analyze, design and implement the developed system. Methods of Systems Analysis and Design (SAD) were used to collect and elicit the different requirements and to specify them; as well as collecting other relevant data through interviews, questionnaires, observations and document reading.

One of the major findings of this study was that the developed inventory system can effectively and efficiently track all the drugs in a hospital pharmacy from the point of entry up to the when these drugs are distributed to the different hospital wards. The inventory system can as well help pharmacies know when stocks have gone below the threshold value so that they initiate the ordering process of new consignments of drugs from the medical stores.
This study recommends that pharmacies should use the developed system for proper management of the drugs in their stores.