CENTRAL UNIVERSITY

FAITH • INTEGRITY • EXCELLENCE

School of Engineering & Technology
Department of Computer Science & Information Technology

PROJECT GUIDE / REFERENCE MANUAL

for

FINAL YEAR STUDENTS

October 23, 2024

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1 GENERAL PROCEDURES

Students in both Bachelor's program in Computer Science and Information Technology (CS&IT) must complete a project to satisfy the requirements for graduation.

This document prescribes the general guidelines for the project, including the required topics; formatting, deadlines, associated courses, etc. This section remarks generally on what a project entails, the format a project proposal should take in instances when one is requested by the department. Section 2 describes what the requirements are for a project. Section 3 describes the format of the required final oral presentation of the project results. Finally, Section 4 discusses what is to be expected for the final oral presentation of the project.

1.1 THE PROJECT WORK

It is ideal to have each student have a project of their own. But for *practical* purposes, THE DEPARTMENT STRONGLY ENCOURAGES GROUP OR TEAM PROJECTS. Students are encouraged to form teams themselves but, when needed, the department may intervene. The maximum number of students that can form a team for a project is **two** (2). Note, however, that during final assessment of a team project each team member's contribution to the final product WILL BE ASSESSED INDEPENDENTLY.

The courses for the Project are:

> **COMP 400** (3 Credits) and **ITEC 400** (3 Credits) for Computer Science students and Information Technology students respectively.

A student who is not able to complete the project in a given semester must notify his advisor one week before the last day of classes and supply a progress report. Normally such students would receive a grade of "X" (for incomplete). Students who find it necessary to use more than 2 semesters to complete the project must request permission to do so from the Head of the department and provide a written explanation of the circumstances.

As necessary the department will organize project seminars for students. The purpose of project seminars series is to prepare the student to give an oral report of his/her project and to present talks on active research by CS&IT faculty members and outside speakers. The instructor will describe the format required for scientific research, presentations and conduct trial runs of presentations. The course does not meet every week; students, at this stage in their study, are expected to fully conduct independent study and research and put into use the knowledge gained from prior semesters. The department during the semester announces when such seminars will be taking place.

Note also that in a team project, the final project must be completed before any member of the team can receive a grade for their efforts. Furthermore, if the team breaks up in the course of the semester, a new proposal from each member is required before a project can proceed.

1.2 PROJECT PROPOSAL

The PROJECT PROPOSAL is the background and planning document for the project. Depending on what the requirements are students may be asked to submit a proposal

for review by the department before the commencement of the project.

The project proposal should be written by the student and must be accepted by the department before the student commences the project course and/or the accompanying seminar. Students should contact a prospective project advisor as early as possible in their course of study since the project advisor may expect certain decisions to be taken in preparation for the project.

The proposal itself should be developed in consultation with the advisor. It should be initiated by the first half of the semester prior to the semester in which the project is done, and even earlier for some advisors. Completed proposals are submitted to the CS&IT department and reviewed for approval by the project advisor. If approved, the project is then implemented under the guidance of the advisor.

Submit the proposal on or before the deadline date to the secretary of the CS&IT Department. Retain a copy of the proposal for yourself. The intended faculty advisor for the project should be indicated.

The CS&IT department response to submitted proposal will be communicated to students through appropriate channels at the department 1 week before the first day of the final exams. The possible Department responses are:

- **ACCEPTED**: the student may start work on the project, but should contact the advisor for comments and an advisement schedule;
- **CONDITIONALLY ACCEPTED**: the student must modify the proposal according to the advisor's indications and approval; upon subsequent approval, the student may then start the project;
- **REJECTED**: the proposal is unacceptable: the student may contact the faculty reviewer of the proposal for advice.

Proposals that are conditionally accepted must be resubmitted to the advisor one week before the start of the next semester. If a proposal is rejected the student must withdraw from the project course and submit a new proposal the next semester.

Each final year student or group of students must obtain prior approval from their advisor before the project can start.

2 PROJECT REQUIREMENTS

2.1 PROJECT TOPICS

Project topics vary greatly. A topic may be suggested by an advisor to the student or by the student to an advisor. It is important to confirm the appropriateness of a topic with an advisor as early as possible in the development of the proposal for a project.

Example topics are: software packages, screen and text editors, engineering applications, accounting and business management packages, file processing and database systems, some scientific research about a computing/information technology related issues, etc.

Projects are expected to be conceived, designed, and executed at a undergraduate level of sophistication. Some students may elect to do original research papers in such

areas as computer systems, communications and networking, software engineering, data and knowledge engineering, artificial intelligence, graphics and image processing, information and decision-support systems, knowledge and expert systems, system simulation and modelling, or algorithms and theory of computing. Typically, a project will involve sophisticated software development. Generally, the amount of work required for a project is expected to be comparable to that entailed by one to two undergraduate courses. Regardless of the type of project, it must be researched in an *in-depth and scholarly manner*.

2.2 PROJECT REPORTS

Final PROJECT REPORT or documentation should generally follow the outline given in Section 3, subject to modifications and/or additions required by the advisor.

For submission of the finished work to the department, TWO COPIES OF THE FINAL REPORT ARE DUE ON THE DEADLINE SET BY THE DEPARTMENT: ONE COPY FOR THE DEPARTMENT AND ONE FOR THE PROJECT ADVISOR. The copies MUST BE BOUND per the university's regulations and format which is available at the university library.

Students must note that THE STUDENT CANNOT GRADUATE UNLESS THE SECOND COPY IS GIVEN TO THE DEPARTMENT. Students are also advised to have their advisor review a draft of the report some time before submission of the final report.

As a university policy, software developed in an undergraduate project cannot be considered proprietary. The advisor has the right to use such code in research activities and to supply such code to students for use in derivative projects. In rare and exceptional cases, an advisor may grant a student the right to copyright the code. However, all software developed as part of a project, together with the documentation, must be submitted to the department before a student is allowed to graduate. The software (source code) submission may be done on a external disk if appropriate.

3 WRITING A PROJECT REPORT

For uniformity the following outline in the pages below should be employed in preparing your PROJECT REPORT or documentation. Consult with your advisor before submitting a report which does not follow the format as **it may be rejected**. Use a typewriter or word/text processor and printer to produce the document.

All submissions must be made on an $8\frac{1}{4} \times 11\frac{3}{4}$ inch (A4) bond paper.

Check with your advisor for modifications appropriate to your project, particularly for hardware projects. Submit the documentation, one copy to your advisor, and one copy, with the two appropriate header sheets to the department.

STUDENT'S ARE ADVISED TO CONSULT WITH SCHOOL'S LIBRARY DEPARTMENT ON HOW TO BIND THEIR FINAL REPORT OR PROJECT DOCUMENTATION TO BE PRESENTED TO THE DEPARTMENT.

Instructions for putting the final document together are hereby explained below (refer to **Appendix A** for a sample). Your report must be complete when you submit it for

acceptance and must written and bound in this order

(a) Title page

(b) Declaration/Project Supervisor Approval page

(c) Acknowledgement

(d) Dedication (optional)

(e) Table of Contents

(f) List of Figures (if any)

(g) List of Tables (if any)

(h) Content

(i) Bibliography

(j) Appendix

3.1 PROJECT REPORT FORMAT

Items in Section 3 above are further elaborated upon below.

1. Title page
    - There is a format to follow for the title page. See **Appendix A** for reference. The format must be followed *exactly as shown*.
2. Declaration/Approval page
    - This page is what both the student and supervisor sign to indicate to the originality of the report.
3. Acknowledgement
    - A page (maximum) acknowledging everyone the writer(s) wishe(s) to thank.
4. Content
    - Font
        - The report should be printed on **one side** of the page, **double-spaced**, with wide margins, **12pt** typeface, preferably in **Times New Roman** font.
        - Number the pages consecutively at the **bottom**, **centred** on each page.
    - Headings and subheadings
        - Chapter titles start on a new page.
        - Chapter numerals should be Arabic.
        - Chapter numbers and titles may be in upper or lower case, flushed left, at the top of the report page; leave an extra space and then begin the text.
        - Subheadings should be distinguished one level from another consistently, such as (1, 1.1, 1.2, 2, 2.1, 2.1.1, 2.1.2, 2.2, …).

  - It is advisable to **avoid more than three levels** of subheadings.

- Footnotes should be used sparingly and should be placed at the bottom of the page in which they are referenced.
- Actual content will largely depend on what the project is about but should follow the general **Introduction**, **Literature Review**, **Methodology**, …, **Conclusion** style of documentation.
- Content should not be MORE THAN FIVE (5) CHAPTERS.

5. Tables and figures
   - All tables and figures should be centred in the column on the paper.
   - Table captions should be centred **above** the table.
   - All figure captions must appear centred **under** the figure.
6. Bibliography
   - The ACM/IEEE citation style and reference format is recommended. Information on this can be found here[1].
7. The Appendix
   - This contains all relevant material for your report that cannot be put in the content section. References must be made to it from the content.
   - For software projects, it is recommended that students create **GitHub** repositories and upload the code there. If, however, files are too big for GitHub students are advised to an alternative cloud solution and also make it publicly available. For this, **Google Drive** is a recommended choice to use. In both cases, the link to the repository should be made available in the appendix together with instructions for its setup.

Note that YOU MUST HAVE THE SIGNATURE OF YOUR PROJECT ADVISOR ON THE FACULTY APPROVAL / DECLARATION PAGE of the final printed and bound book.

4 PROJECT ORAL PRESENTATION

As and when the department decides, every student will be required to defend their project in order to be finally graded. As determined there will be **two** (2) presentations: a mini-presentation and a final one. On both days, every presentation must include the following:

1. A description of the project work (clear title, name(s) & index number(s), etc).
2. The problem the project sought to solve (research questions and/or literature review, etc).
3. The efforts taken to achieve the solution (system implementation, methodology, project management, etc).

[1] https://www.acm.org/publications/authors/reference-formatting

The presentation is not expected be more than 10 slides (this could be changed if there are valid reasons). Students with projects of software artefacts must be ready to show how their software works, the code behind it and be prepared to explain what they have been able to do (and what is left to be done, etc.).

On the day every student is expected to show up for their presentation formally dressed.

4.1 PRESENTATION ASSESSMENT

A sample assessment form is attached below for review. This is to guide students on how to go about their presentation.

Refer to **Appendix B** for a sample of the assessment sheet.

Appendices

Appendix A: Project Report Sample

CENTRAL UNIVERSITY

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SCHOOL OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

AUTOMATED SOFTWARE CONFIGURATION MANAGEMENT AND CHANGE CONTROL SYSTEM (SCM)

A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF BACHELOR OF SCIENCE (BSC.) IN COMPUTER SCIENCE

ADONGO SISA-OCQUAYE

(CSC/01/02/0304)

AUGUST 31, 2022

Declaration

Student's Declaration

I hereby declare that this project work is the result of my own original research and that none of it has been presented for another degree in this University or elsewhere. I am responsible for any errors and omissions detected.

Student's Signature: _____

Name: Adongo Sisa-Ocquaye

Date: 1st May 1979

Supervisor's Declaration

I hereby declare that the preparation of the project work was supervised in accordance to the guidelines of supervision of project work laid by Central University.

Supervisor's Signature: _____

Name: Prof. Asimasi Obiba

Date: 2nd May 1979

Acknowledgement

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Table of Contents

List of Figures

List of Tables

Chapter 1: This is Chapter One

1.1. This is a Section

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- First item in a list
- Second item in a list
- Third item in a list
- Fourth item in a list
- Fifth item in a list

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Table 1.1: This is a Table

Software Test & Structure	Mean Range
Test A	0.0 – 3.5
Test B	4.0 – 4.5
Test C	7.0 – 10.0

1.1.1. This is a Subsection

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1.1.2. This is Another Subsection

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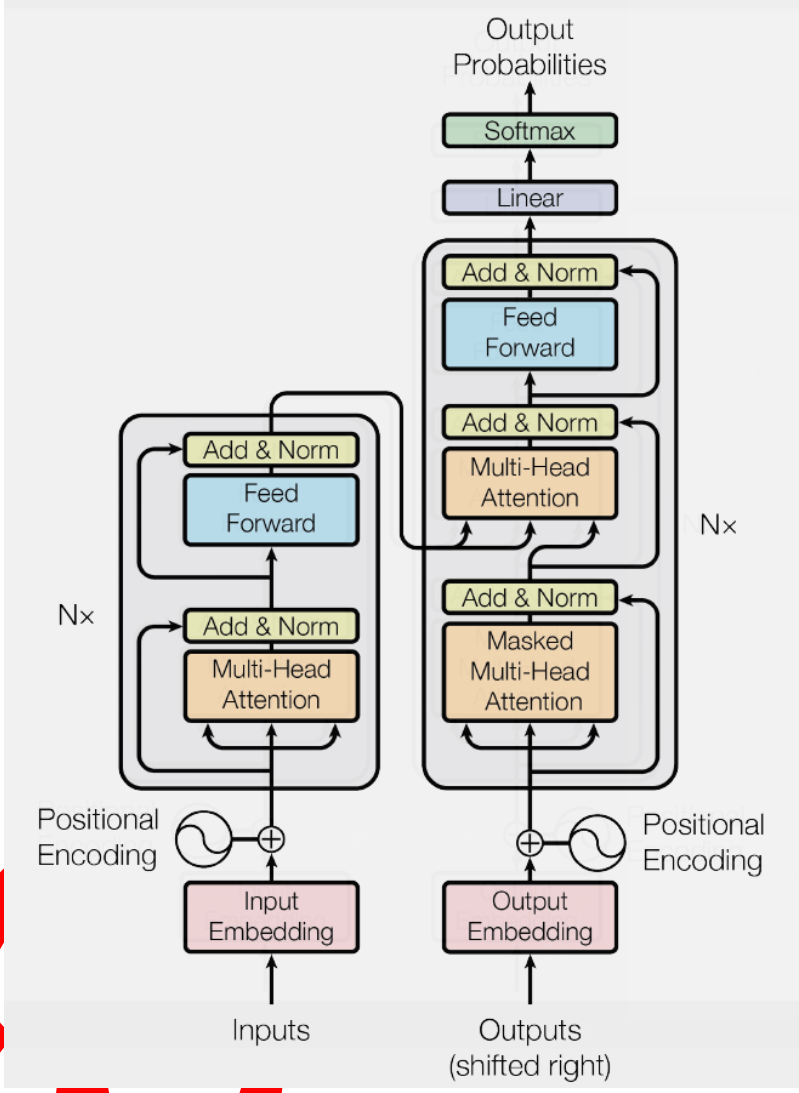

Figure 1.1: The Transformer - model architecture.

1.2. This is Another Section

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1. First item in a list
2. Second item in a list
3. Third item in a list
4. Fourth item in a list
5. Fifth item in a list

References

[1] M. Goossens, F. Mittelbach, and A. Samarin, *The LaTeXCompanion*. Reading, Massachusetts: Addison-Wesley, 1993.

[2] A. Vaswani, N. Shazeer, N. Parmar, *et al.*, "Attention is all you need," in *Advances in Neural Information Processing Systems*, I. Guyon, U. V. Luxburg, S. Bengio, *et al.*, Eds., vol. 30, Curran Associates, Inc., 2017. [Online]. Available: https://proceedings.neurips.cc/paper/2017/file/3f5ee243547dee91fbd053c1c4a845aa-Paper.pdf.

[3] "Generating bibliographies with biblatex and biber," Wikibooks. (2016), [Online]. Available: https://en.wikibooks.org/wiki/LaTeX/Generating_Bibliographies_with_biblatex_and_biber (Accessed 03/07/2016).

Appendices

Appendix A: This is an Appendix

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Appendix B: Project Evaluation Form

CENTRAL UNIVERSITY
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School of Engineering & Technology
Department of Computer Science & Information Technology

Final Year Student Project Evaluation Form

Student Name(s): _____

Index No.(s): _____

Project Title: _____

_____

I. Evaluation

Sub-evaluation: **1. Overall Project**

Organisation & Structure	**Mark (10)**
Little or no structure / organisation, difficult to follow	0.0 – 3.9
Patchy / inconsistent structure / organisation, subject often confusing	4.0 – 4.9
Satisfactory structure, occasionally difficult to follow, sometimes confusing	5.0 – 5.9
Well structured, easy to follow, rarely confusing	6.0 – 6.9
Excellent structure – little room for improvement	7.0 – 10.0
Score	
Problem Statement	**Mark (10)**
Research question unsophisticated or not clearly presented	0.0 – 4.9
Clearly presented	5.0 – 6.9
Communicates a high sophistication in presenting and situating research question	7.0 – 10.0
Score	
Methods	**Mark (10)**
Development methodology not appropriate to research	0.0 – 4.9
Uses appropriate methods	5.0 – 6.9
Presents results thoroughly, with full understanding	7.0 – 10.0
Score	

Sub-evaluation: **2. Software Development / Project Management**

Software / Product / Results	**Mark (30)**	**Score**
Software tools	5	
Software development tools are suitable for this project	3	
System Architecture	3	
User Interface Design	5	
Look and Feel	3	
Innovation (Bright ideas)	3	
Functionality	5	
Implementation and Testing	3	
Code & Algorithm/Design	**Mark (20)**	**Score**
Clear design (Use case & E-R Diagrams) clearly presented	10	
Code design	10	
Project management	**Mark (20)**	**Score**
Pert / Gantt chart used	10	
Timeline as defined in the project proposal and followed	10	

II. Approval & Remarks

The project work and its presentation submitted by the student is [**Please circle one**]:

(a) Acceptable and may be regarded as final in its present form

(b) Acceptable with minor revisions. The revisions and modifications have been indicated to the student during the examination and / or outlined below.

(c) Not acceptable in its present form, needs major revision and requires re-certification by the supervisor(s) and at least one examiner before the final submission.

Remarks/comments below:

Name of Assessor / Examiner: _____

Signature: _____ Date: _____