This is The Title of Your Special Problem

A Special Problem

Presented to

the Faculty of the Division of Physical Sciences and Mathematics

College of Arts and Sciences

University of the Philippines Visayas

Miag-ao, Iloilo

In Partial Fulfillment

of the Requirements for the Degree of

Bachelor of Science in Computer Science by

LASTNAMEA, FirstName1

LASTNAMEB, FirstName2

LASTNAMEZ, FirstName3

Francis DIMZON, Ph.D.

Adviser

May 12, 2025

Approval Sheet

The Division of Physical Sciences and Mathematics, College of Arts and Sciences, University of the Philippines Visayas

certifies that this is the approved version of the following special problem:

This is The Title of Your Special Problem

Approved by:

Name	**Signature**	**Date**
Francis D. Dimzon, Ph.D. (Adviser)	_____	_____
Ara Abigail E. Ambita (Panel Member)	_____	_____
Christi Florence C. Cala-or (Panel Member)	_____	_____
Kent Christian A. Castor (Division Chair)	_____	_____

Division of Physical Sciences and Mathematics

College of Arts and Sciences

University of the Philippines Visayas

Declaration

We, [NAMES here], hereby certify that this Special Problem has been written by us and is the record of work carried out by us. Any significant borrowings have been properly acknowledged and referred.

Name	**Signature**	**Date**
Student Name 1 (Student)	_____	_____
Student Name 2 (Student)	_____	_____
Student Name 3 (Student)	_____	_____

Dedication

"Hello, world."

Acknowledgment

"Hello, world."

Abstract

From 150 to 200 words of short, direct and complete sentences, the abstract should be informative enough to serve as a substitute for reading the entire SP document itself. It states the rationale and the objectives of the research. In the final Special Problem document (i.e., the document you'll submit for your final defense), the abstract should also contain a description of your research results, findings, and contribution(s).

Suggested keywords based on ACM Computing Classification system can be found at `https://dl.acm.org/ccs/ccs_flat.cfm`

Keywords: Keyword 1, keyword 2, keyword 3, keyword 4, etc.

Contents

List of Figures

List of Tables

Chapter 1

Introduction

1.1 Overview of the Current State of Technology

This section gives the reader an overview of the specific technology or field in the international or local setting. The information regarding the technology or field should be contemporary and not based on outdated sources. Discussion must not be too technical or too detailed.

This section ends with a discussion on the problem/s faced by or that still exist in the specific technology or field (e.g., limitations of existing software or algorithms). The problem statement would lead to the research objectives.

It is easy to include a figure in JPG or PNG format as shown in the following example. Make sure that you explain what the figure is all about, and that you refer to your figure. Figures and Tables should appear after they were referred to in the text. For example, Figure 1.1 shows a graph of the performance of Disney

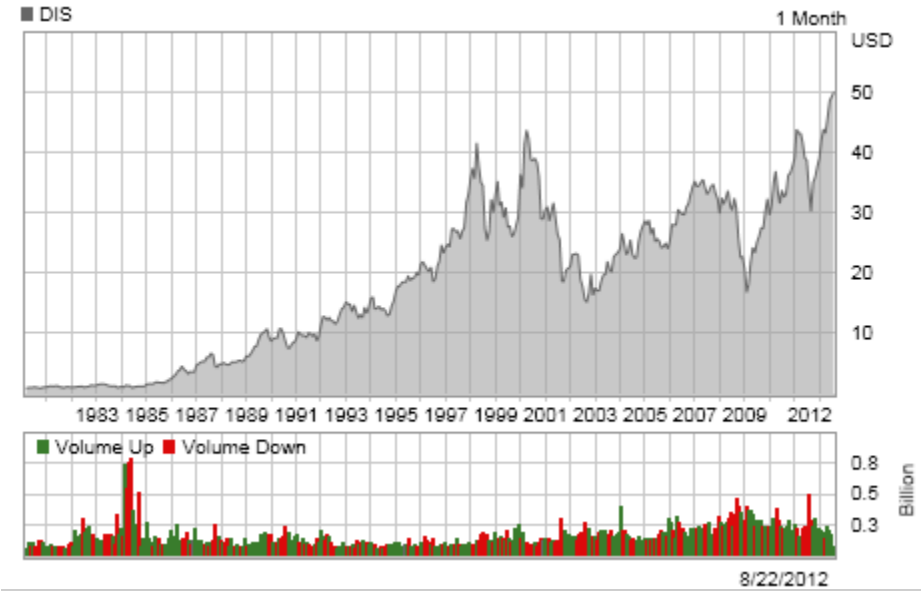

Figure 1.1: This is the figure's caption – Disney stock chart. Captions should fully describe the figure in a concise manner such that there is no need to refer to the text when figuring out the graphic.

stock from the 1980s to 2012.

Some notes on citing references. When using APA format, the author-date method of citation is followed. This means that the author's last name and the year of publication for the source should appear in the text, and a complete reference should appear in the reference list.

Here are some examples on how to do the referencing (note author's name and years are different from commented examples). For APA citation details, refer to `http://www.ctan.org/tex-archive/biblio/bibtex/contrib/apacite/`.

- Kartch (2000) compared reaction times...
- In a recent study of reaction times (Kartch, 2000)...
- In 2000, Kartch compared reaction times...

- Fedkiw et al. (2001) compared reaction times...
- In a recent study of reaction times (Fedkiw et al., 2001)...
- In 2001, Fedkiw et al., compared reaction times...

The following are references from journal articles (Park, Linsen, Kreylos, Owens, & Hamann, 2006; Pellacini et al., 2005; Sako & Fujimura, 2000). Here's an MS thesis document (Yee, 2000), and this is from PhD dissertation (Kartch, 2000). For a book, reference is given as (Parke & Waters, 1996). Proceedings from a conference samples are (Jobson, Rahman, & Woodell, 1995; Fedkiw et al., 2001; Levoy et al., 2000). The sample bibliography file named **myreferences.bib** is from the SIGGRAPH LaTeX template. You can use a text editor to view the contents of the bib file. It is your task to create your own bibliography file. For those who downloaded papers from ACM or IEEE sites, there is a BibTeX link that you can click; thereafter, you just simply need to copy and paste the BibTeX entry into your own bibliography file.

The following shows how to include a program source code (or algorithm). The verbatim environment, as the name suggests, outputs text (including white spaces) as is...

```
#include <stdio.h>
main()
{
     printf("Hello world!\n");
}
```

1.2 Problem Statement

DO NOT FORGET to write the statement of the research problem here, i.e., before the Research Objectives.

A problem statement is your research problem written explicitly. The problem statement should do four things:

1. Specify and describe the problem (with appropriate citations)
2. Provide evidence of the problem's existence
3. Explain the consequences of NOT solving the problem
4. Identify what is not known about the problem that should be known.

1.3 Research Objectives

1.3.1 General Objective

This subsection states the over–all goal that must be achieved to answer the problem. Address the following: Given your research challenge or opportunity, how do you intend to solve it? What is the output of your research?

1.3.2 Specific Objectives

This subsection is an elaboration of the general objective. It states the specific steps that must be undertaken to accomplish the general objective. These objec-

tives must be **S**pecific, **M**easurable, **A**ttainable, **R**ealistic, **T**ime-bounded. A specific objective start with "to <verb>" for example: to design/survey/review/analyze.

Studying a particular programming language or development tool (e.g., to study Windows/Object-Oriented/Graphics/C++ programming) to accomplish the general objective is inherent in all thesis and, therefore, must not be included here.

1. To review related literature, compare and contrast existing algorithms (on what problem?);
2. To develop a new algorithm (for what purpose?)
3. To analyze the algorithm (based on what criteria?)

1.4 Scope and Limitations of the Research

This section discusses the boundaries (with respect to the objectives) of the research and the constraints within which the research was developed.

1.5 Significance of the Research

This section explains why research was done in this area. It rationalizes the objective of the research with that of the stated problem. Avoid including sentences such as "This research is beneficial to the proponent/department/college" as this is already an inherent requirement of all BSCS majors. Focus on the research's contribution to the Computer Science field.

The following are guide questions that may help your formulate the significance of your research.

- What is the relevance of your work to the computer science community?
  - What are your technical contributions, in terms of algorithms, or approaches, or new domain?
  - What is your value-added compared to existing systems?
- What are your contributions to society in general?
  - Who benefits from your system?
  - Who are your target users and how this system benefit them?

Chapter 2

Review of Related Literature

This chapter discusses the features, capabilities, and limitations of existing research, algorithms, or software that are related/similar to the Special Problem.

The reviewed works and software must be arranged either in chronological order, or by area (from general to specific). Observe a consistent format when presenting each of the reviewed works. This must be selected in consultation with the adviser.

DO NOT FORGET to cite your references.

A literature review must do these things:

- be organized around and related directly to the thesis or research question you are developing
- synthesize results into a summary of what is and is not known
- identify areas of controversy in the literature

- formulate questions that need further research

A literature review is a piece of discursive prose, not a list describing or summarizing one piece of literature after another. It's usually a bad sign to see every paragraph beginning with the name of a researcher. Instead, organize the literature review into sections that present themes or identify trends, including relevant theory. You are not trying to list all the materials published, but to synthesize and evaluate them according to the guiding concept of your thesis or research question. You should also state the limits or gaps of their researches wherein you will try to fill these gaps in accordance to your research problem and objectives.

2.1 Theme 1 Title

This chapter contains a review of research papers that:

- Describes work on a research area that is similar or relevant to yours
- Describes work on a domain that is similar or relevant to yours
- Uses an algorithm that may be useful to your work
- Uses a software / tool that may be useful to your work

It also contains a review of software systems that:

- Belongs to a research area similar to yours
- Addresses a need or domain similar to yours
- Is your predecessor

2.2 Theme 2 Title

2.3 Chapter Summary

Should include a table of related studies comparing them based on several criteria.

Highlight research gaps and the research problem.

Chapter 3

Research Methodology

This chapter lists and discusses the specific steps and activities that were performed to accomplish the project. The discussion covers the activities from pre-proposal to Final SP Writing.

3.1 Research Activities

Research activities include inquiry, survey, research, brainstorming, canvassing, consultation, review, interview, observe, experiment, design, test, document, etc. Be sure that for each method, process, or algorithm used, there is a justification why that method was chosen. The methodology also includes the following information:

- who is responsible for the task
- the resource person to be contacted

- what were done
- when and how long the activity was done
- where it was done
- why should the activity was done

Chapter 4

Results and Discussions

This chapter presents the results or the system of your SP. Include screenshots, tables, or graphs and provide the discussion of results.

Chapter 5

Conclusion

This chapter summarizes your SP and provides conclusions regarding your results and analyses. Provide recommendations on what ought to be done with your SP or provide further directions on the topic you covered.

Chapter 6

References

Fedkiw, R., Stam, J., & Jensen, H. W. (2001). Visual simulation of smoke. In E. Fiume (Ed.), *Proceedings of siggraph 2001* (pp. 15–22). ACM Press / ACM SIGGRAPH.

Jobson, D. J., Rahman, Z., & Woodell, G. A. (1995). Retinex image processing: Improved fidelity to direct visual observation. In *Proceedings of the is&t fourth color imaging conference: Color science, systems, and applications* (Vol. 4, pp. 124–125).

Kartch, D. (2000). *Efficient rendering and compression for full-parallax computer-generated holographic stereograms* (Unpublished doctoral dissertation). Cornell University.

Levoy, M., Pulli, K., Curless, B., Rusinkiewicz, S., Koller, D., Pereira, L., ... Fulk, D. (2000). The digital michelangelo project. In K. Akeley (Ed.), *Proceedings of siggraph 2000* (pp. 131–144). New York: ACM Press / ACM SIGGRAPH.

Park, S. W., Linsen, L., Kreylos, O., Owens, J. D., & Hamann, B. (2006, March/

April). Discrete sibson interpolation. *IEEE Transactions on Visualization and Computer Graphics*, *12*(2), 243–253.

Parke, F. I., & Waters, K. (1996). *Computer facial animation*. A. K. Peters.

Pellacini, F., Vidimče, K., Lefohn, A., Mohr, A., Leone, M., & Warren, J. (2005, August). Lpics: a hybrid hardware-accelerated relighting engine for computer cinematography. *ACM Transactions on Graphics*, *24*(3), 464–470.

Sako, Y., & Fujimura, K. (2000). Shape similarity by homotropic deformation. *The Visual Computer*, *16*(1), 47–61.

Yee, Y. L. H. (2000). *Spatiotemporal sensistivity and visual attention for efficient rendering of dynamic environments* (Unpublished master's thesis). Cornell University.

Appendix A

Code Snippets

Appendix B

Resource Persons

Dr. Firstname1 Lastname1

Role1

Affiliation1

emailaddr@domain.com

Mr. Firstname2 Lastname2

Role2

Affiliation2

emailaddr2@domain.com

Ms. Firstname3 Lastname3

Role3

Affiliation3

emailaddr3@domain.net