University of Science and Technology Of Southern Philippines
Claro M Recto Avenue, Lapasan Cagayan De Oro City 9000

THESIS MANAGEMENT SYSTEM

Agol, Roderick B.

Balbon, Joshua James D.

Lumbayan, Gedeon B.

Salas, Merlito Jr. B.

December 2020

Chapter 1

Introduction

This chapter presents the background of the study, conceptual framework, statement of the problem, significance of the study, scope and limitation of the study, and the definition of terms.

Background of the Study

A thesis or dissertation is a document submitted in support of candidature for an academic degree or professional qualification presenting the author's research and findings. The required complexity or quality of research of a thesis or dissertation can vary by country, university, or program, and the required minimum study period may thus vary significantly in duration (https://en.m.wikipedia.org/wiki/Thesis).

Every year, there will be a new batch of students who look for a thesis topic and it's a fact that this is really the culture in the academy which students must be accustomed to. Looking for a thesis topic is very challenging and at the same time frustrating when students found out that somebody already done the same study they acquired and they have to look for a new one. This is really a struggle in the technical areas of thesis research that students are still facing. When there's no existing software to be used in the university especially that kind of system where thesis documents or repositories can be kept and tracked, then students run out of ideas with a fear of stumbling upon another topic redundancy, they will undergo a document hunting for the existing previous research in the office file cabinet. Based on the submission of State Universities and Colleges (SUCs), it includes SUCs main campus and satellite/extension campuses, there's

almost 11,805 students who are enrolled at the USTP main campus by the year 2019-2020 (https://ched.gov.ph/statistics/).

Consider the number of students the university, USTP in particular, have who took Information Technology course, it may increase in the future. Then, the struggle of finding an implementable unique thesis topic to them would increase too. It may be a kind of trivial statement nowadays but it will become a serious problem in the future as the population of IT students may increase and a complete and approved thesis research can't be repeated. Meanwhile, one thing to be taken into account is the current system of monitoring the thesis works and progress of the proponents. The paper-based system as the traditional record keeping still in use for thesis management by the faculty. Though there are some advantages for its usage but the number of drawbacks for this process is so overwhelming considering a lot of factors like misplacing the files, file transportation, record modification, tragedy or even natural disasters. Looking at these factors, we aimed at developing a kind of web portal where students can use it for tracking for previous thesis research to at least help them in their struggle of finding a unique thesis topics and concepts and it will surely help the students widen their ideas for a research topic. Assigning a schedule for the panel would be one of the very challenging tasks considering the fact that their other roles, such as being a class instructor aside from being mentors, is not also compromised. No proper progress monitoring of proponents will result to the quality of thesis documents they develop. It would be a great help if there's a web portal that will aid everyone for this task. There is really a great need to be taken into consideration in these areas in thesis management system.

Statement of the Problem

Students are advised to submit their desired category (e.g., IOT, data science, web or mobile) in choosing a thesis topic then they will be manually assigned by the department chairman into their respective advisers according to each of advisers' expertise. We can consider the possibility of topic redundancy and the difficulty in validating a topic if it's already been taken by other proponents. When it comes to rescheduling the panel for a concept presentation or even in final defense, panelists overlapping their schedule would be a possible scenario considering that they also have their own class hours and their own advisory roles to their respective advisees, there would be a conflict of schedule on their part. The quality of thesis documents the proponents produced is the one thing that shouldn't be compromised for they reflect the reputation of the University.

The common problems surrounding the paper-based system that was used by the faculty in the process must be taken into account. And the fact that there's no existing system in the university to track and keep thesis documents to be used by the students in choosing the right and implementable thesis topic and there's no existing software to be used for searching previous thesis research in the university made this a real struggle for them.

Objectives of the Study

1.3.1 General Objective

The main objective of this study is to aim at developing a web portal to be used especially by students who are enrolled in a research subject and it will be an aid for the chairman and faculties in implementing the guidelines in completing the process of all thesis

works of the IT thesis proponents in the beginning until its completion in Information Technology Department of College of Information Technology and Computing at University of Science and Technology of Southern Philippines.

1.3.2 Specific Objective

- To design a system that will aid the Chairman in his/her duty in the thesis work of the students and this includes assigning advisers to their respective advisees, assigning the panel for concept presentation and project proposal of each team, and setting the schedule for the defense in particular.
- To design a system that will link the panels, secretary, advisers, proponents and the chairman in the thesis development of each proponents in the a most efficient way digitally.
- To develop a web application that students can use when it comes to them looking for an implementable unique thesis topic to be worked upon in compliance for the research subject.
- To test and evaluate the functionality of the system that can upload and retrieve thesis documents.
- To deploy and implement the system in IT department in the College of Information Technology and Computing of USTP.

Scope and Limitation

This study will be implemented at Information Technology Department of College of Information Technology and Computing at USTP following the guidelines for its research

study. The students who have been enrolled in the research subject of IT department in CITC are allowed to use the system together with the department chairman and the faculties under the IT department who play a great role in the thesis works of the graduating IT proponents.

Significance of the study

This proposed system can create and manage the documents that is web-based so that the researcher can access without going to the library. Moreover, this system can provide more secure band advance connection between Adviser and students by having a scheduling and monitoring of thesis activities.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter presents the different researches and literatures from both local and foreign researchers, which have relevance in conducting the present study:

Local Related Literature

2.1 WEB-BASED THESIS MANAGEMENT SYSTEM FOR THE DEPARTMENT OF INFORMATION TECHNOLOGY OF THE UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

The problem is, the process of monitoring the thesis execution is still made manually and usually, this process is time consuming and students tend to disregard the importance of complying certain requirements because they think that it's okay to cram and just pass the documents at the same time at the very deadline. The faculty personnel also tend to lose some feedbacks or comments from panelist and are not able to produce exact minutes because of lost documents. (Abuzo et.al 2019)

2.2 THESIS MANAGEMENT SYSTEM

The project is about managing the thesis document made by the past information technology and computer science student of the Polytechnic University of the Philippines. The main problem of the faculty staff and coordinator is how it can be easily to access by the students who wants to borrow or search for that past thesis made. Proponents propose to build a thesis management system that is web based so that many students can access it without going to research room. Thesis management system will help student and faculty staff in their work because it accessible to the internet. (Alano et.al 2018)

2.3 CollaborateIT: A CCS IT Thesis Portal with Electronic Document Management System

The system covers the entire thesis process as well as the document management of the different thesis documents. The main objective of this system is to provide a portal that can help better track and accomplish the thesis cycle**.** The portal would be handling the entire thesis process, which starts from after passing the proposal stage up to the submitting of the final thesis project, as well as the document management of the thesis documents, which involves the storing, indexing and retrieving of thesis documents, in the IT department under the College of Computer Studies of De La Salle University. (Del Rosario et.al 2016)

Foreign Related Literature

2.4 DEVELOPMENT OF A WEB-BASED SYSTEM FOR THESIS AND PROJECT PROPOSAL MANAGEMENT

The goal project is concerned with software to establish an automated web-based system for the thesis and project management. This system drastically will reduce the required time and also amount of work in the process of publishing a project or a thesis. It is more than just tools and techniques for acquiring and declaring information about the proposals of thesis or project, rather it will also complete the whole official tasks regarding this process. This new system will introduce a firm and comprehensive approach to collecting, modeling and storing information about thesis or project. This will discuss for further working implementation, and presents final results. (Md Yusuf Khalil,2020)

2.5 Thesis Management System for Industrial Partner Red Hat

When students fulfill all mandatory subjects and other requirements established by their university, they have to write a thesis. To write a thesis, they first have to choose the topic of their thesis. There are many ways to choose a topic for a thesis, students can, for example, think of one themselves and contact a teacher at their university. Another way is to choose the topic from a list of topics composed by their university or by some external party (e.g., a company that cooperates with the university). A topic usually consists of a title, description and a supervisor who helps the student with the topic (e.g., clarifies inaccuracies). Thesis, on the other hand, is the piece of work that is based on a topic and consists of an official title and description, supervisor, abstract etc. It is important to note here, however, that the supervisor must be an academic because they need to understand the policies of the university in question.

This complicates the thesis management because if an external party is to offer a list of topics for students, they need one of their supervisors, who can help the student with the topic, and a university supervisor, who can help the student to follow the university policies. (Václav Dedík,2013)

CHAPTER 3

	Thesis Proponents Progress Monitoring	Advisory Assignment Automation	Digital Repository	Defense Schedule Management	Printable Template Format
Thesis Management System	✓	✓	✓	✓	✓
Web-Based System for Thesis and Project Proposal Management	✗	✓	✗	✗	✓
Theses Alive! : An E-theses management system for the UK	✓	✗	✓	✗	✗
Online Thesis Guidance Management Information System	✓	✗	✗	✗	✗

RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research methods and techniques to be used in the study. It covers the process, design, and implementation of the study.

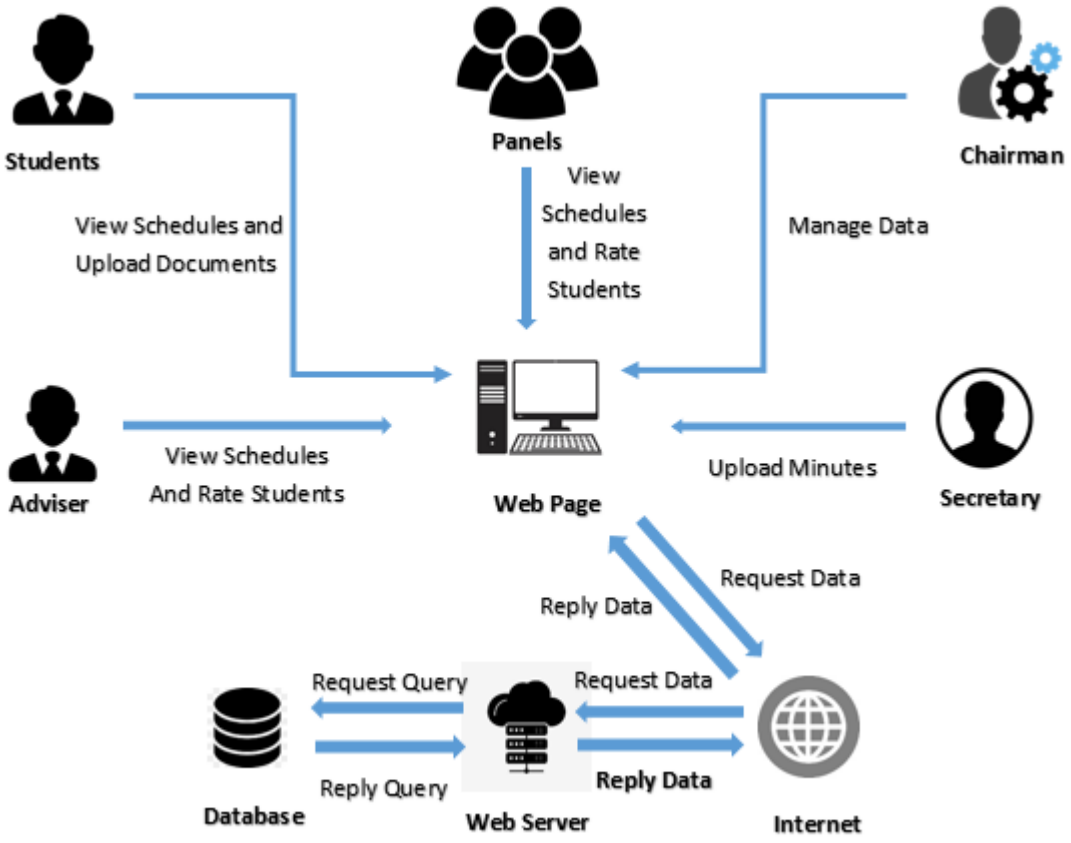
3.1 Data Gathering

The researchers gather their information through a form of asking questions regarding the overall view on how the thesis defense was managed in the current system in IT department. The researchers conducted an interview to a faculty member who is knowledgeable about the current management of how the thesis works is monitored in IT department. It's a fact that the researchers too were relatable to the issue for they are experiencing the same problem typical to a thesis proponent struggling their way with the current system.

3.1.2 System Architecture

It displays the interactions of the whole components needed for the web application to work. It also shows the flow of the data from the users to the system and vice versa. The admin will register all the users to the system for exclusivity. The users will be the students, faculty and secretary in IT department of CITC at USTP. IT students will group themselves and the department Chairman will assign their adviser, their panel and schedule. The adviser will then view his/her advisees and the defense schedule as well as he/she also rates the progress of the

proponents. The panel will also view the schedule and rate the thesis of the proponents. The secretary will input the thesis minutes to be viewed by the proponents.

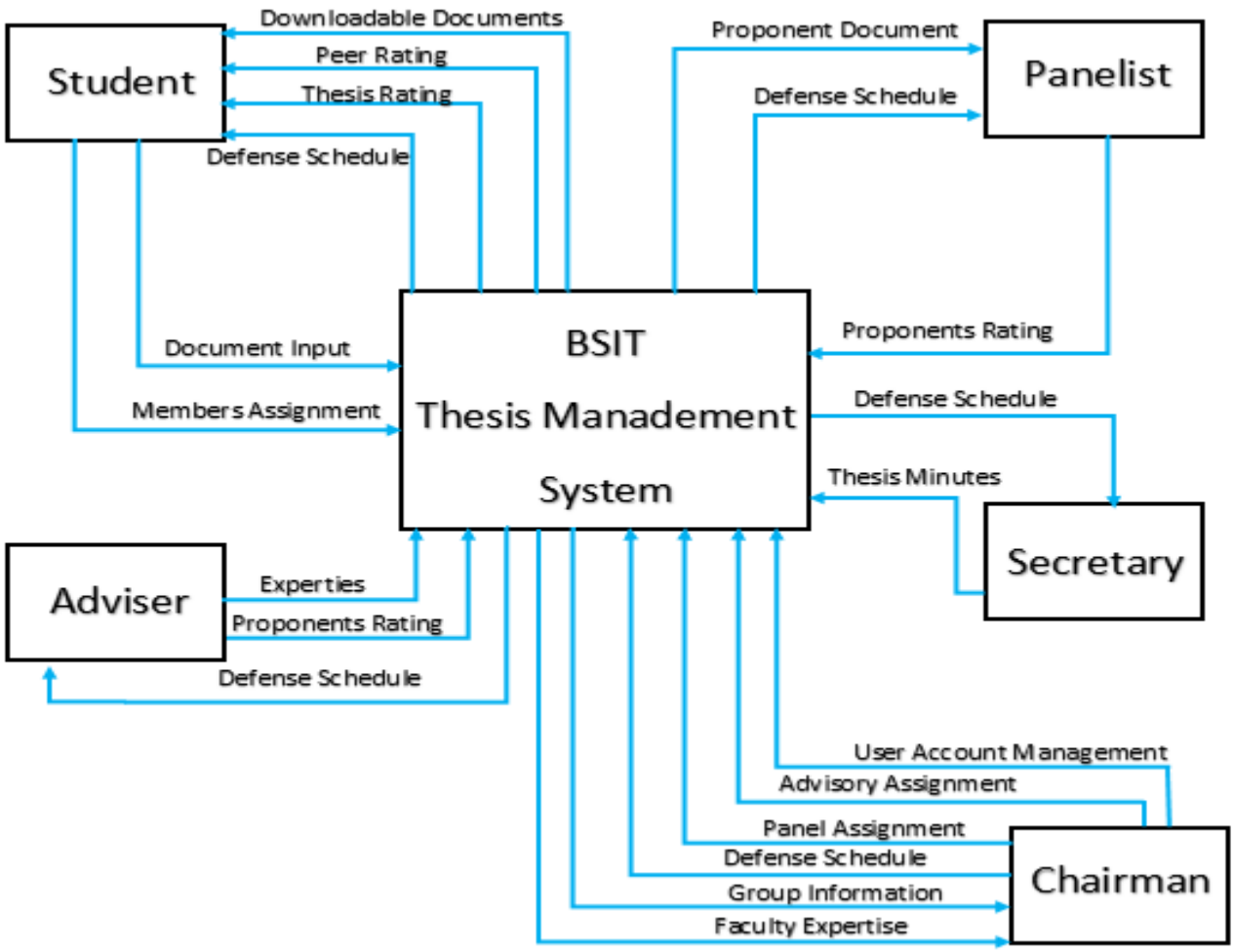


3.1.3 Use Case Diagram

It presents how each user can operate the system in regards to their role. The system allows the chairman to manage user accounts, assign adviser to each group, assign panel, and set schedule for the defense. It allows the student to group themselves, upload files, download repository, view ratings from adviser, panel and peers. Adviser can then view the defense schedule and rate the progress of his/her advisees. Panel will also view the thesis defense and rate the thesis of proponents. Secretary will be the one to input the thesis minutes.

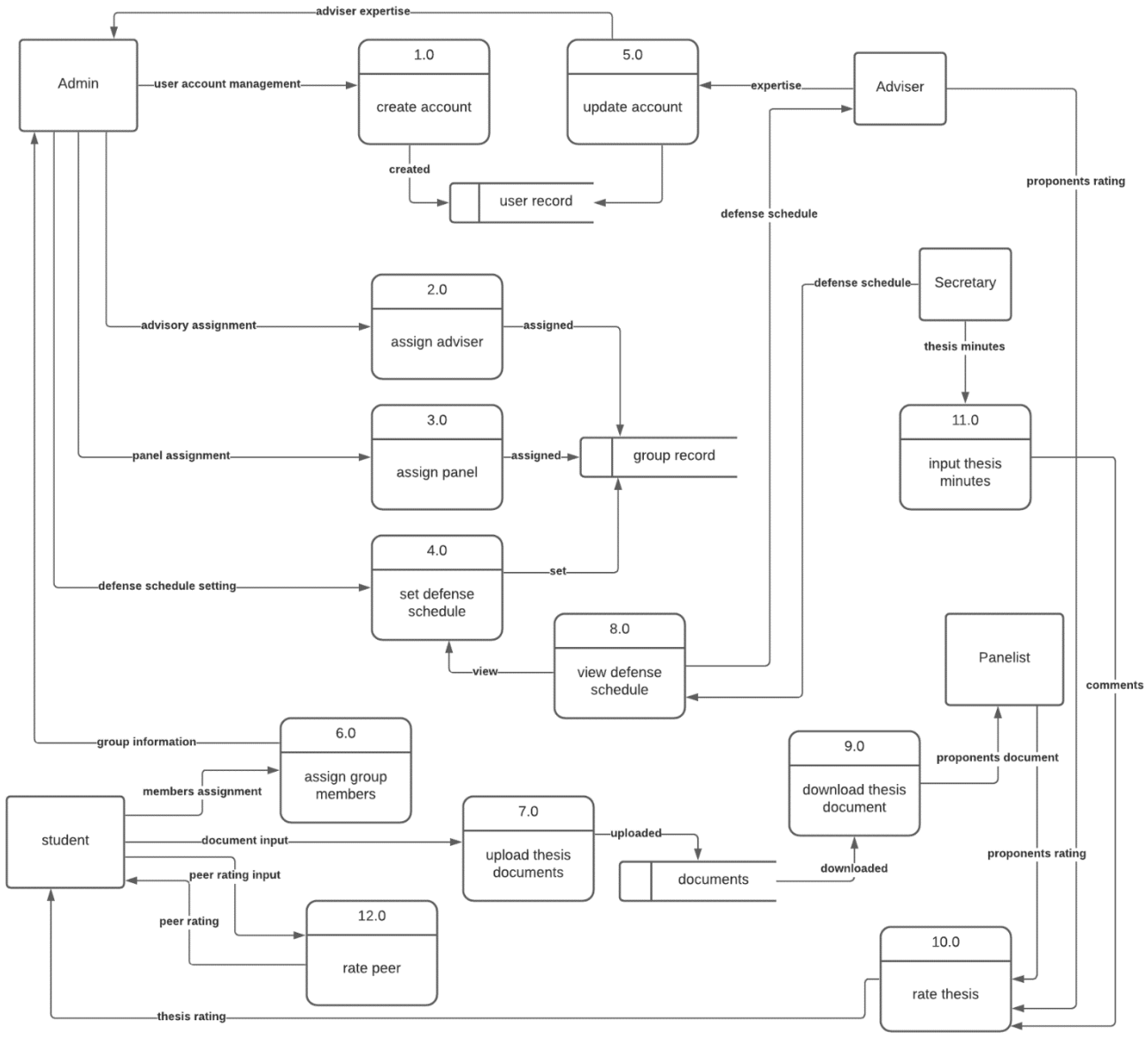
3.1.4 Context Diagram

It displays the context diagram of the proposed system with the external agents namely the chairman, students, adviser, panel and the secretary. The chairman will view the groupings of the proponents and assign the adviser according to their expertise, will assign the panel and will set schedule for the defense which will be viewed by the proponents, their adviser and panel. Students will assign members (group themselves) and submit it to the chairman, they will view their assigned adviser, panel and defense schedule. They will upload thesis documents to be downloaded by the panel and rate their work. Secretary will input thesis minutes to the respective proponents.



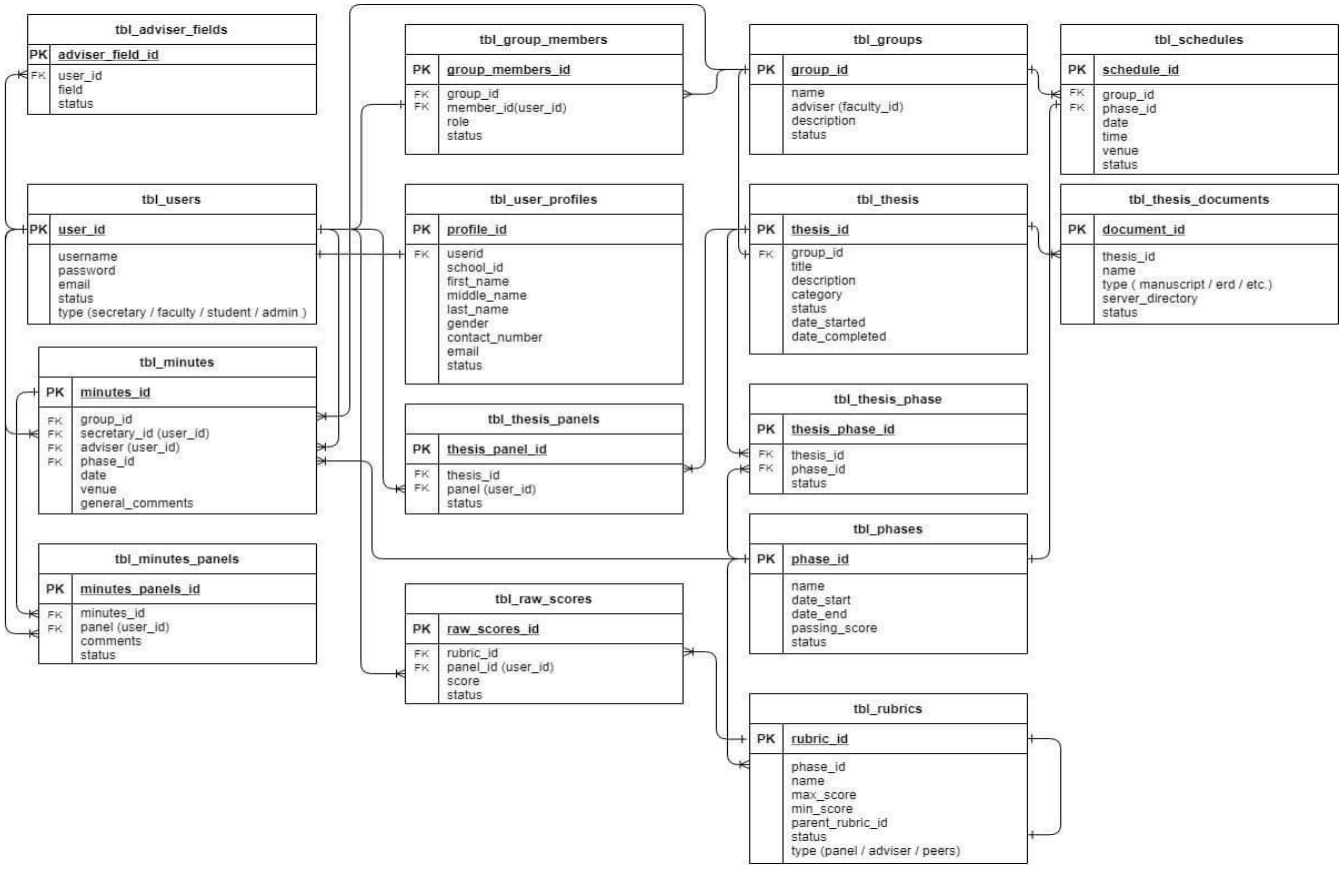
3.1.5 Data Flow Diagram

It displays the data flow diagram of the proposed system with the external entities namely the chairman, students, adviser, panel and the secretary. It shows the data inputs and outputs according to the control of the external entities, it has data stores, and the various subprocesses the data moves through the proposed system.



3.1.6 Database Diagram

It displays the entity-relationship diagram(erd) of the proposed system where it facilitates the storage and retrieval of data. This erd is structured dynamically for a certain factor like data modification. All the information that will populate the database will depend on the inputs of the faculties, students and secretary in IT department of CITC at USTP.

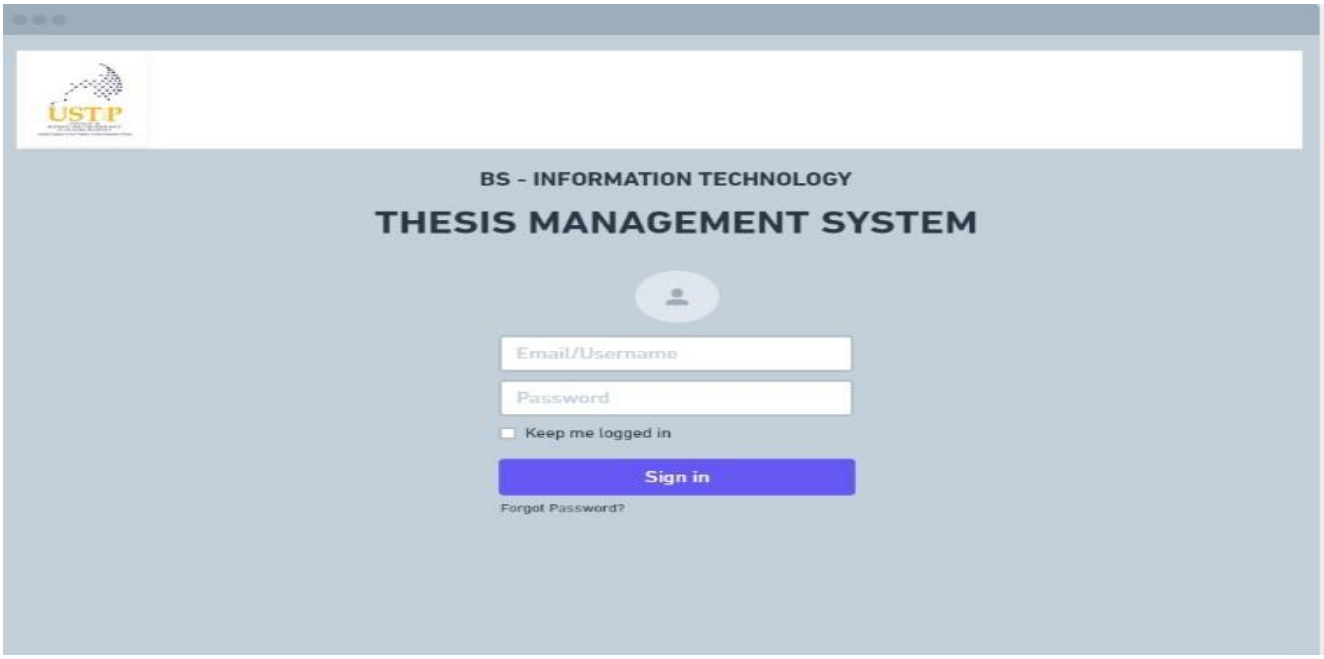


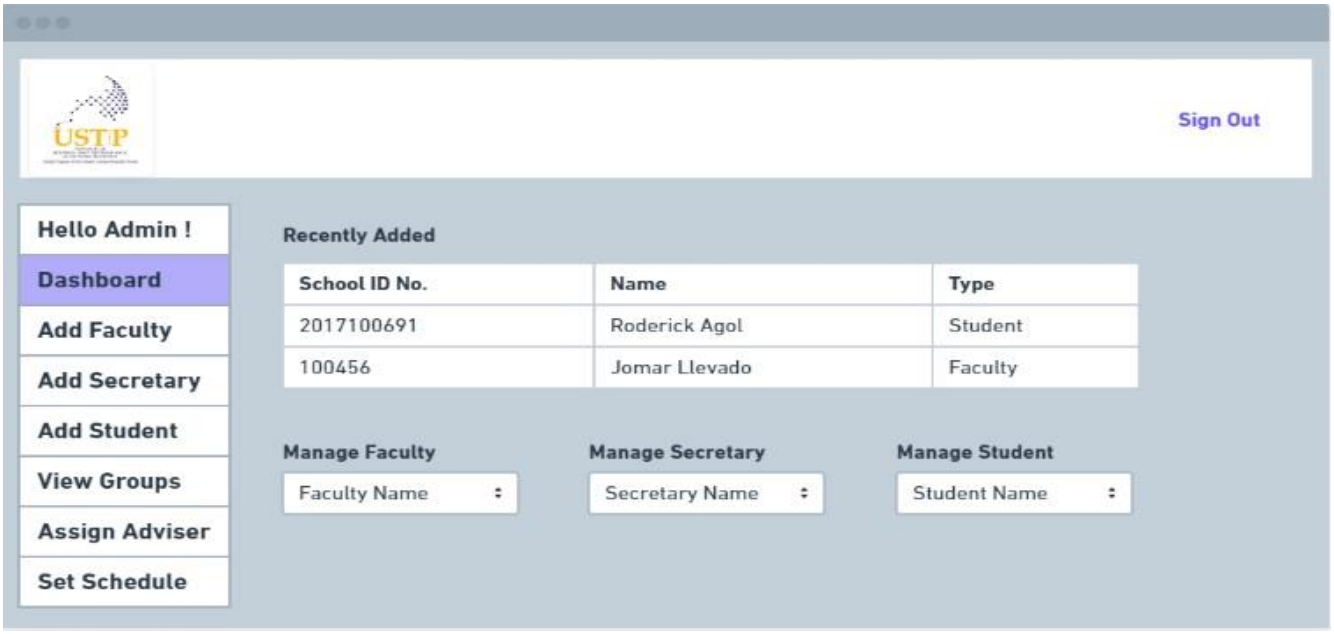
3.2 Gantt Chart

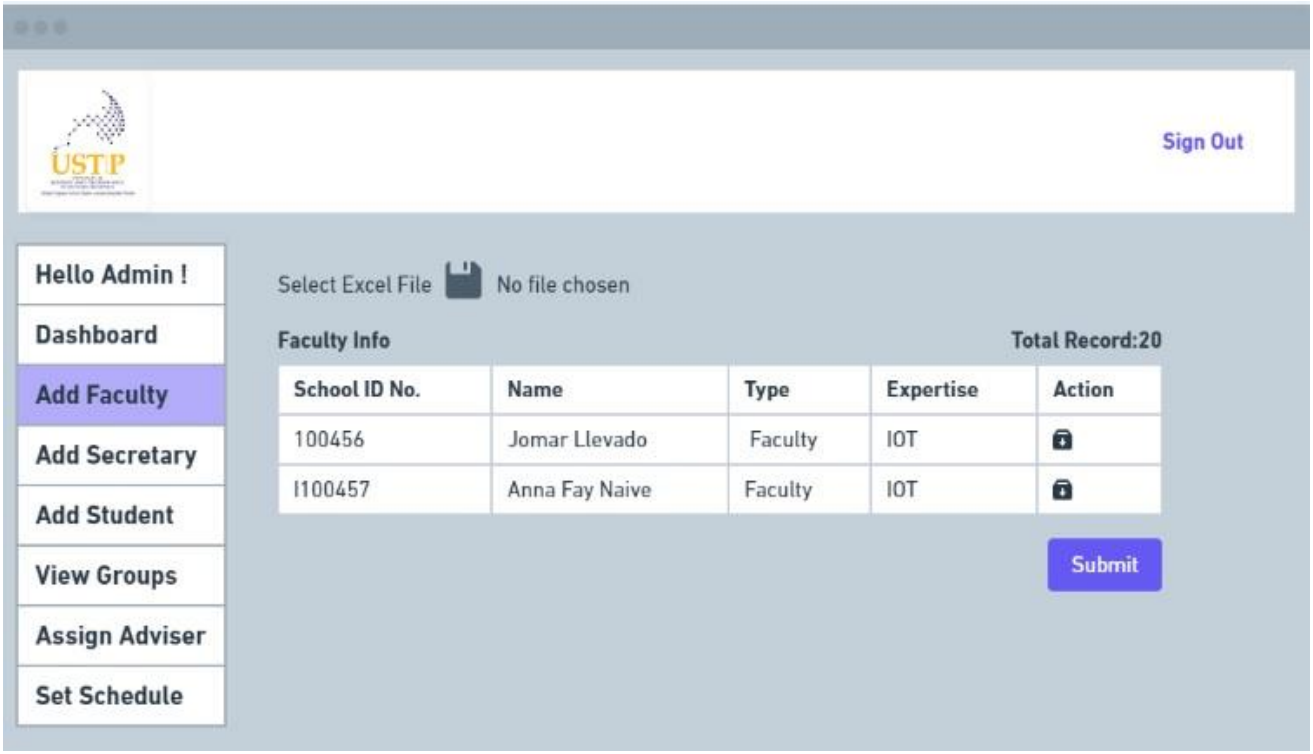
Activities	Weeks							
	Week 1-4	Week 5-8	Week 9-12	Week 13-16	Week 17-20	Week 21-24	Week 25-28	Week 29-32
Planning								
Making questions in regards to the system								
Meeting with the Group								
Data Gathering								
Interviewing Faculties knowledgeable of the system								
Collecting methods on solving the problem								
Creating Web Page								
Designing Database								
Designing UI								
Developing Web page Functionality								
Connecting Web Page to Server								
System Testing and Development								
Unit Testing								
Alpha Testing								
Debugging								
System Usability Scale Standard								
Implementation and Deployment								
Usability Test								
Functionality Test								

3.3 Wireframe

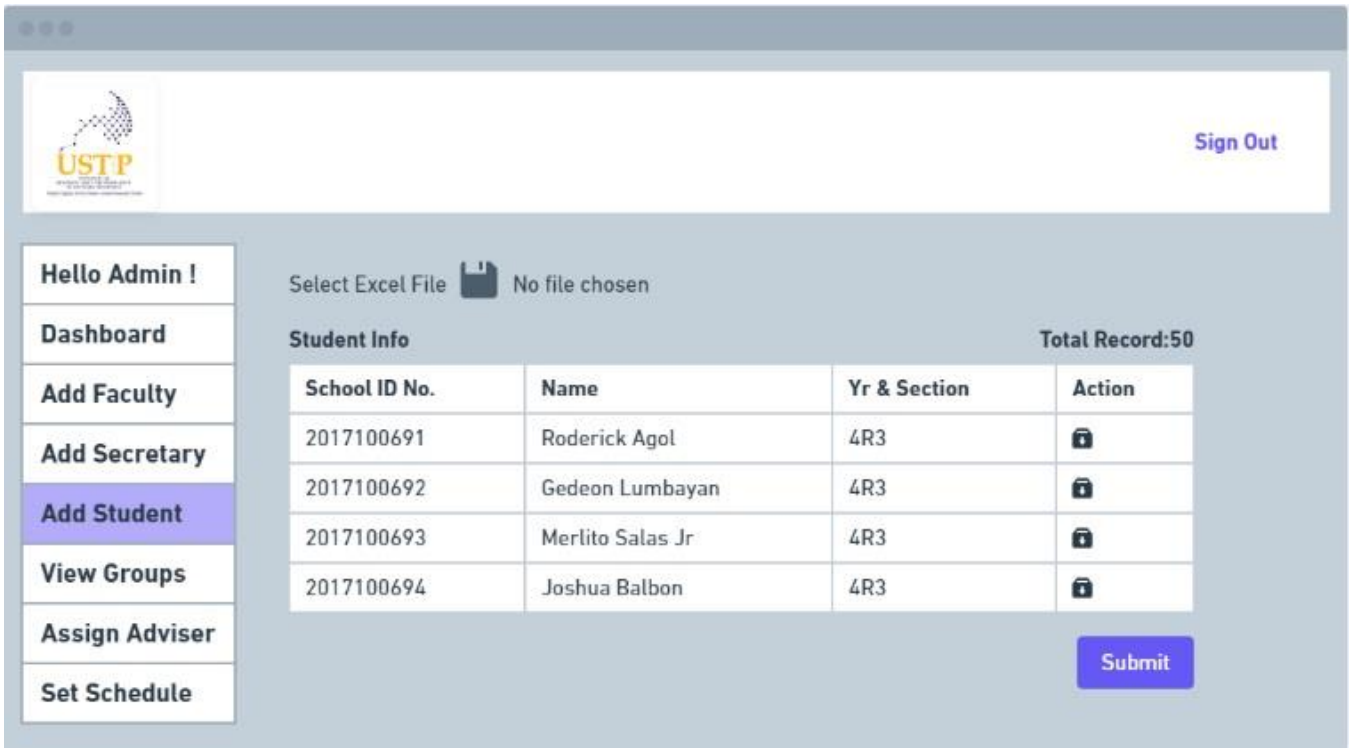
Admin View

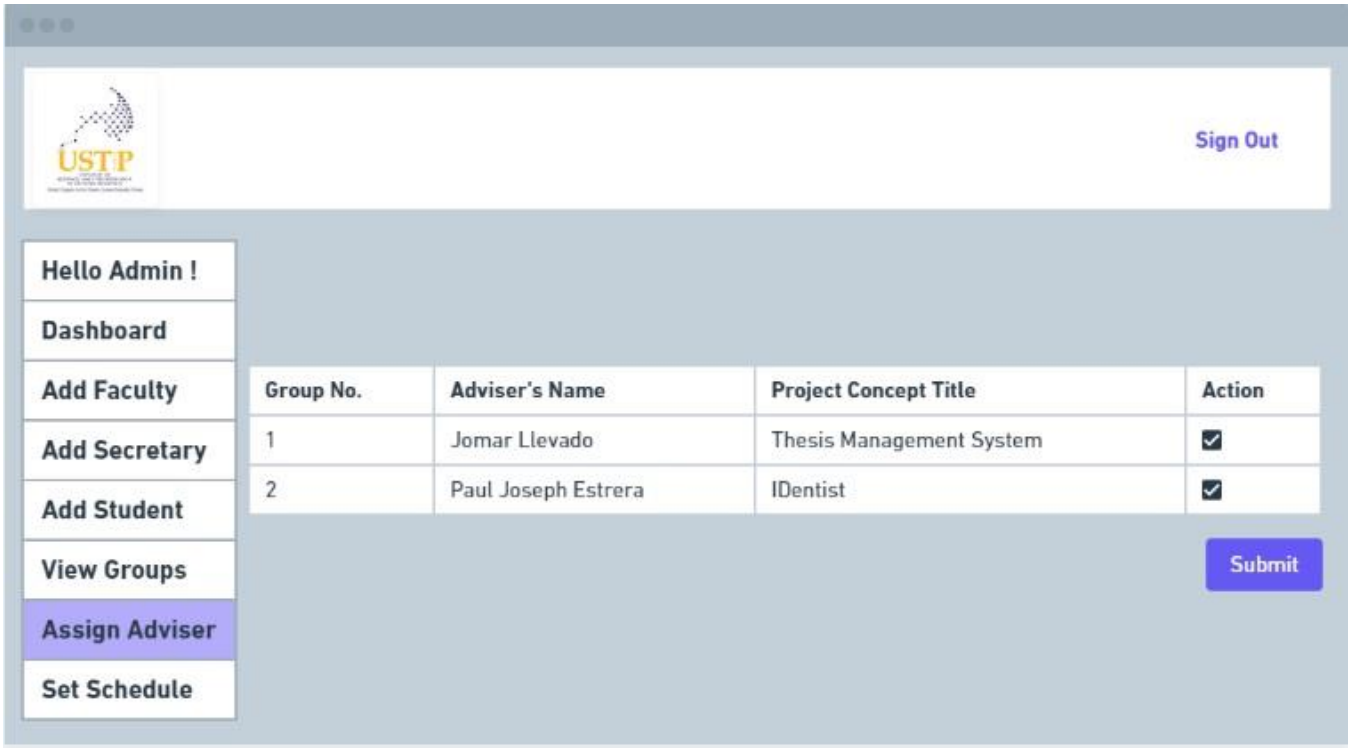

BS - INFORMATION TECHNOLOGY
THESIS MANAGEMENT SYSTEM
Email/Username
Password
Keep me logged in
Sign in
Forgot Password?

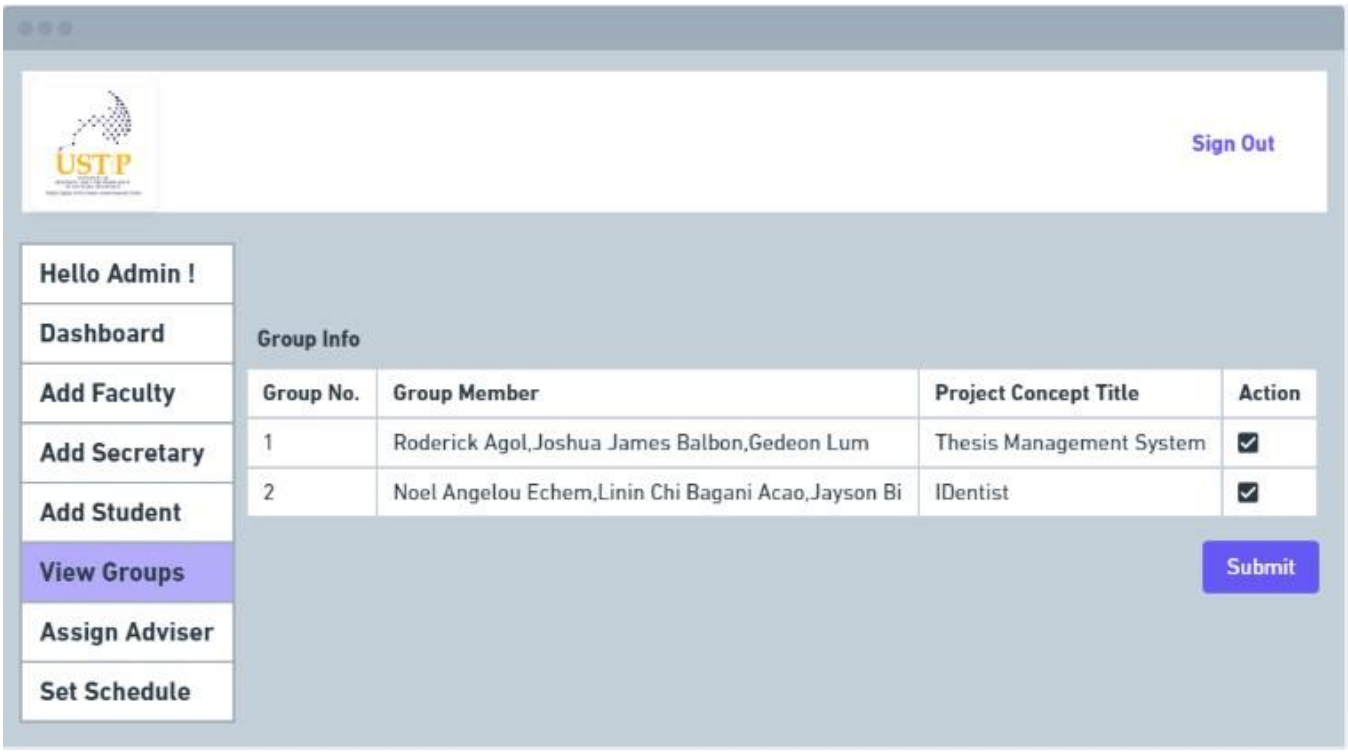

Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
View Groups
Assign Adviser
Set Schedule
Recently Added
School ID No.
Name
Type
2017100691
Roderick Agol
Student
100456
Jomar Llevado
Faculty
Manage Faculty
Faculty Name
Manage Secretary
Secretary Name
Manage Student
Student Name

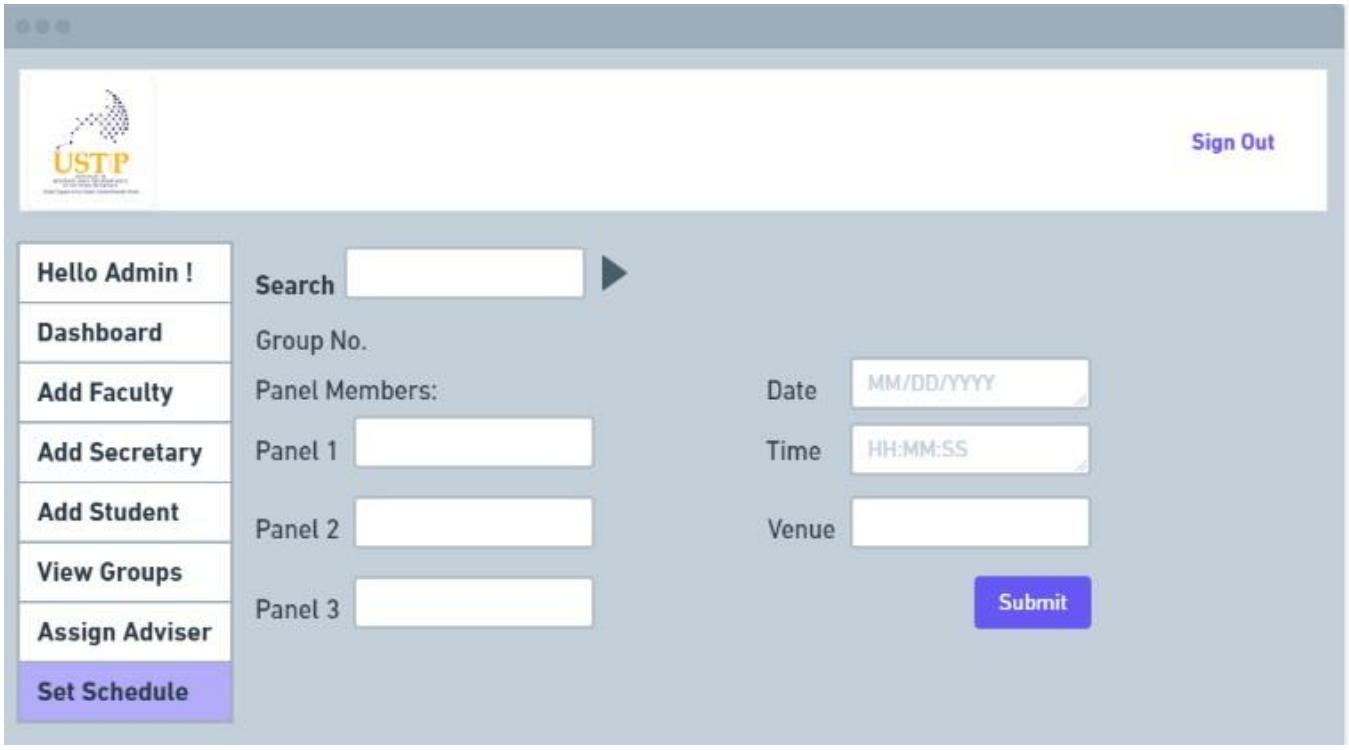

USTP
Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
View Groups
Assign Adviser
Set Schedule
Select Excel File
No file chosen
Faculty Info
Total Record:20
School ID No.
Name
Type
Expertise
Action
100456
Jomar Llevado
Faculty
IOT
I100457
Anna Fay Naive
Faculty
IOT
Submit


USTP
Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
Assign Adviser
View Groups
Set Schedule
Secretary Info
Name
Username
Password
Action
Hope Elizabeth Soberano
Hopie123
123456
Yen Santos
Yen123
654321
Submit

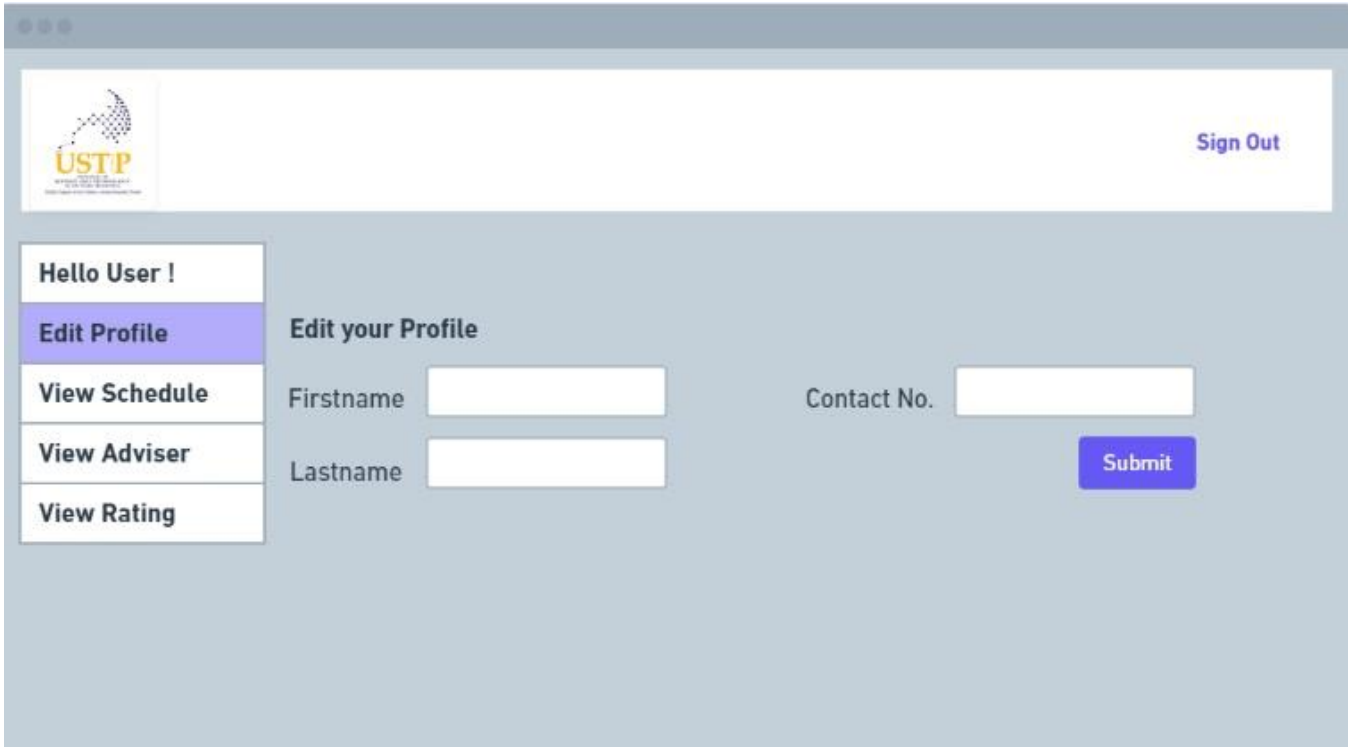

USTP
Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
View Groups
Assign Adviser
Set Schedule
Select Excel File
No file chosen
Student Info
Total Record:50
School ID No.
Name
Yr & Section
Action
2017100691
Roderick Agol
4R3
2017100692
Gedeon Lumbayan
4R3
2017100693
Merlito Salas Jr
4R3
2017100694
Joshua Balbon
4R3
Submit

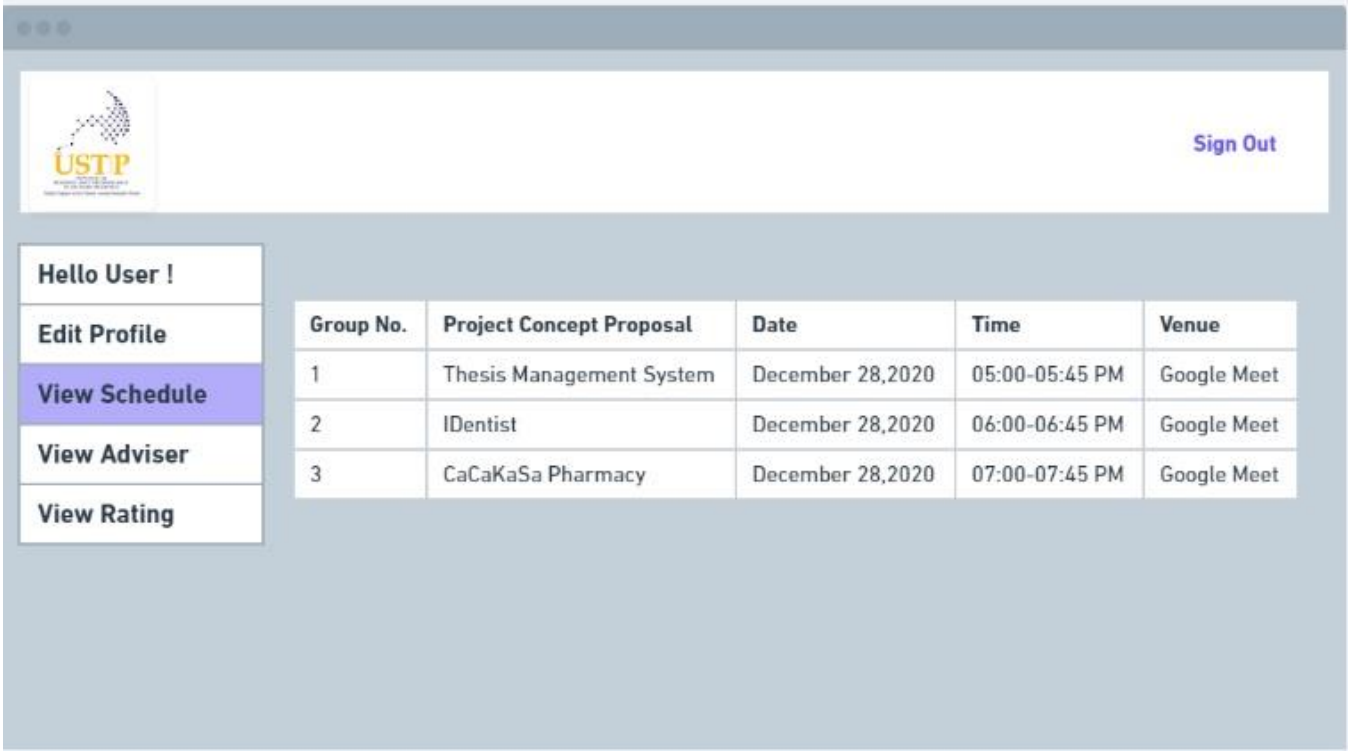

USTP
Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
View Groups
Assign Adviser
Set Schedule
Group No.
Adviser's Name
Project Concept Title
Action
1
Jomar Llevado
Thesis Management System
2
Paul Joseph Estrera
IDentist
Submit

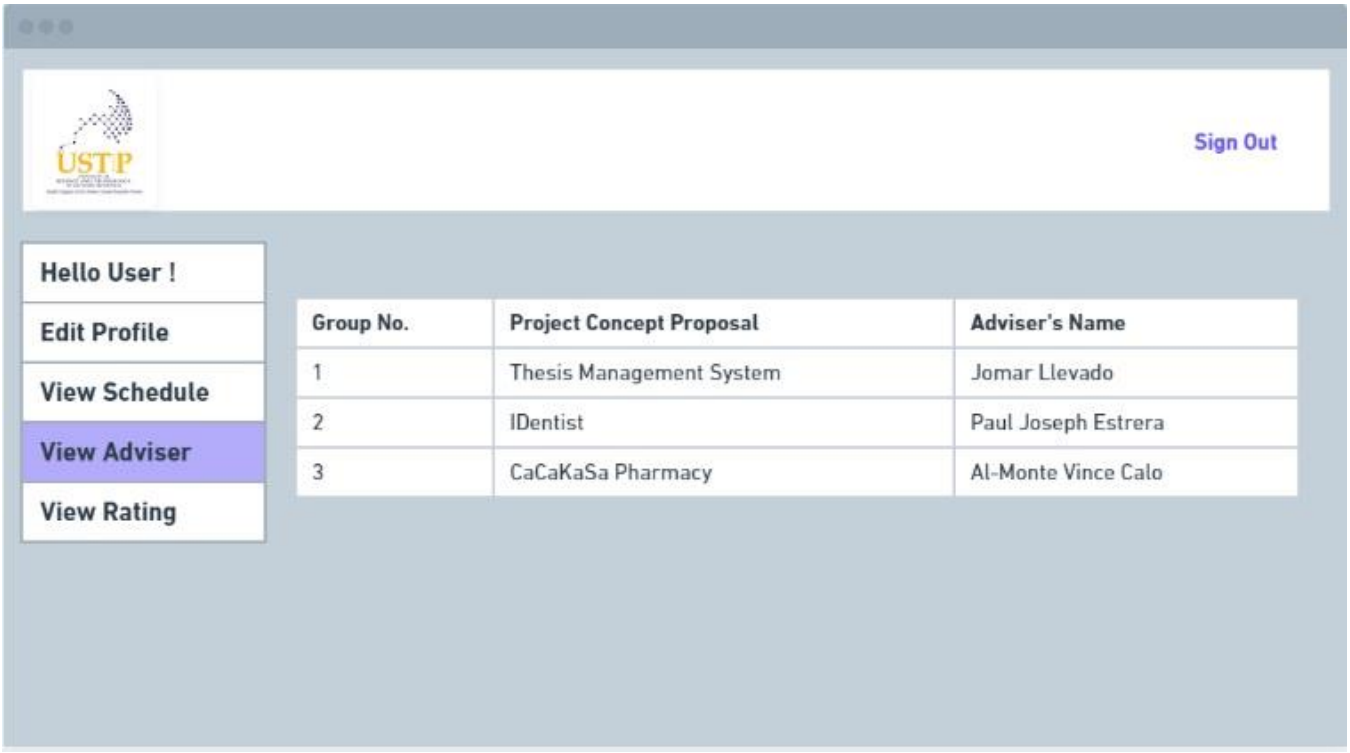

USTP
Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
View Groups
Assign Adviser
Set Schedule
Group Info
Group No.
Group Member
Project Concept Title
Action
1
Roderick Agol,Joshua James Balbon,Gedeon Lum
Thesis Management System
2
Noel Angelou Echem,Linin Chi Bagani Acao,Jayson Bi
IDentist
Submit


USTP
Sign Out
Hello Admin !
Dashboard
Add Faculty
Add Secretary
Add Student
View Groups
Assign Adviser
Set Schedule
Search
Group No.
Panel Members:
Panel 1
Panel 2
Panel 3
Date
MM/DD/YYYY
Time
HH:MM:SS
Venue
Submit

User's View


USTP
Sign Out
Hello User !
Edit Profile
View Schedule
View Adviser
View Rating
Edit your Profile
Firstname
Lastname
Contact No.
Submit


USTP
Sign Out
Hello User !
Edit Profile
View Schedule
View Adviser
View Rating
Group No. | Project Concept Proposal | Date | Time | Venue
1 | Thesis Management System | December 28,2020 | 05:00-05:45 PM | Google Meet
2 | IDentist | December 28,2020 | 06:00-06:45 PM | Google Meet
3 | CaCaKaSa Pharmacy | December 28,2020 | 07:00-07:45 PM | Google Meet



3.4 System Performance Evaluation

3.4.1 Usability Testing

To test the usability and functionality of the system, the researchers will be asking I.T. faculties to evaluate the system to know and to add lacking functionalities.

3.4.2 Functionality Testing

Table 1: Functionality Questionnaire

Statements	1	2	3	4	5
The user interface of the system is well integrated.					
I need to learn a lot of functionalities in order to fully work with the system independently.					
The system is easy to use.					
The system generates and displays correct results and information.					
The results and information produced by the system are useful.					
I can easily upload data.					
The system was able to monitor the minutes.					
The system has more or less complete functionality.					
When compared to the manual process, using this system can increase productivity.					
I don't feel like using this system.					
I would recommend this system to others.					
Overall, I am satisfied with the system.					

1 = Strongly Disagree *2 = Disagree* *3 = Fair* *4 = Agree* *5 = Strongly Agree*

3.5 Hardware and Software Specifications

3.5.1 Software Requirements

Laravel

Laravel is one of the popular open-source frameworks for website development. It's a powerful tool that meets specific needs and is used to construct an exceptional Web application. Laravel is used to create websites with MVC (model-view-controller) patterns. Laravel website development simplifies the majority of project tasks, saving time and efforts.

MySQL

is an open-source relational database management system (RDBMS). SQL is a language programmer use to create, modify and extract data from the relational database, as well as control user access to the database. MySQL is a very good choice for the system for it has a relational theme between its entities.

VS Code

is an open-source, cross-platform source code editor that's become famous, particularly in the web development community. It's fast, extensible, customizable, and has tons of features.

3.5.2 Hardware Requirements

Personal Computer

Personal Computer is a general-purpose, cost-effective computer that is designed to be used by a single end-user. Every PC is dependent on microprocessor technology, which allows PC makers to set the entire central processing unit (CPU) on a single chip. PCs are mainly used for multimedia entertainment, playing PC games, accessing the Internet, etc. A PC can be a microcomputer, desktop computer, a laptop computer, a tablet PC or a handheld PC.

References

https://is.muni.cz/th/wuht3/thesis-text.pdf

http://lib.buet.ac.bd:8080/xmlui/handle/123456789/5145

http://xsite.dlsu.edu.ph/conferences/dlsu-research-congress-proceedings/2016/HCT/HCT-II-01.pdf

https://www.academia.edu/36181799/Thesis_Management_System

https://en.m.wikipedia.org/wiki/Thesis

https://ched.gov.ph/statistics/

https://en.m.wikipedia.org/wiki/MySQL

https://wishdesk.com/blog/choose-laravel-framework-web-development

https://medium.com/better-programming/vs-code-extension-for-web-dev-productivity-fa541654161f#:~:text=VS%20Code%20is%20an%20open,tried%20a%20lot%20of%20extensions.

https://www.techopedia.com/definition/4618/personal-computer-pc