# Capstone Project Directory System for UST IT Department

**A Capstone Project**

**Presented to the**

**Department of Information Technology**

**College of Information and Computing Sciences**

**University of Santo Tomas**

**In partial fulfillment**

**Of the Requirements in the degree of**

**Bachelor of Science in Information Technology**


**Condes, Charles Justin Y.**

**De Guzman, John Jarvis D.**

**Gocon, Jazz William P.**

**Moya, Don Carlos S.**

**Lopez, Rochelle Lynn L.**


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## Abstract

Numerous capstone projects from different batches of CICS graduates are accumulated every year, making it difficult to efficiently monitor and store all the projects. Some capstone projects with hard-bound copies are currently stored in the faculty room, some softcopies of abstracts are stored in the IT Community Blackboard course site, and some full paper and abstracts are stored in a common Google Drive shared to capstone faculty coordinators. To address this problem, the proponents will develop an application that will help manage and store the IT capstone project into a centralized repository. This will provide a mechanism for accessing capstone project information and content that will lessen the time and effort of the faculty members and students who need to refer to past capstone projects.

The web-based application called Capstone Project Directory System will serve as a platform to provide an efficient way of managing and organizing the different capstone projects. The Capstone Project Directory System will include features such as login, dashboard, forgot password, add a new capstone project, edit an existing capstone project, delete a capstone project and search and sort feature for the list of capstone projects.

The developers used the Iterative Waterfall Development Methodology to allow the proponents to understand and develop the project entirely. Additionally, This method gives feedback from the previous phase allowing the errors to be corrected early.

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# Chapter 1: Introduction

UST CICS was formally established in 2014 after being a part of the Faculty of Engineering beforehand. UST CICS consists of different departments, which are Information Technology, Computer Science, and Information Systems. The Bachelor of Science in Information of Technology program in the university offers three different professional elective tracks for students: Network and Security, Web and Mobile App Development, and Robotics. The capstone project is one of the major and final requirements for completing the degree for Information Technology and Information Systems track in the university (Commission on Higher Education, 2015).

Capstone Project is an academic research project for the students given in the final year of their education. The capstone project is one of the requirements for the students who are taking the BS Information Technology. Capstone Projects are important because it enhances the skills of the students, it provides a platform for the students to showcase their knowledge about the track that they are taking, and it also provides a vital role for the future of the students.

Numerous capstone projects from different batches of CICS graduates are accumulated every year, making it difficult to efficiently monitor and store all the projects. Currently, some capstone projects with hard bound copy are stored in the faculty room, some softcopies of abstract are stored in the IT Community Blackboard course site, and some full paper and abstracts are stored in a common Google Drive shared to capstone faculty coordinators. In order to address this problem, the proponents will develop an application that will help manage and store the IT capstone project into a

centralized repository. This will provide a mechanism for accessing capstone project information and content that will lessen the time and effort of the faculty members and students who need to refer to past capstone projects.

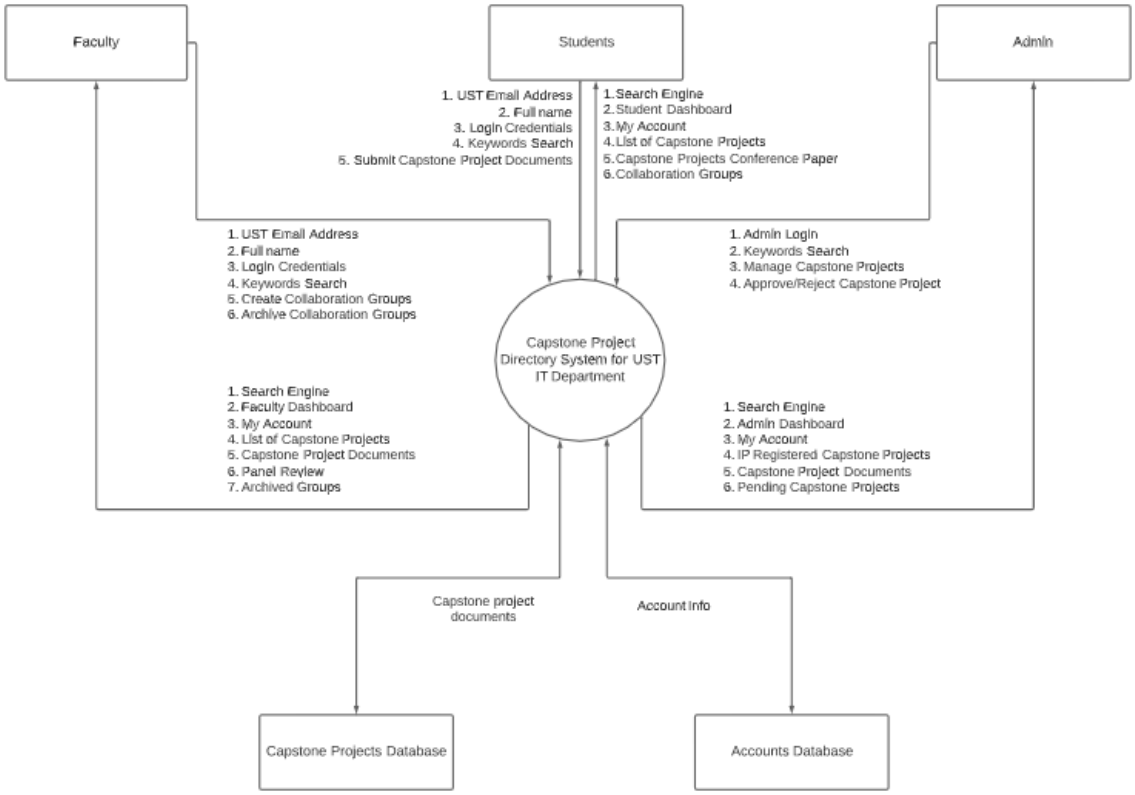


*Figure 1.1: Project Context Diagram for Capstone Project Directory System*

The target users of our system are students and professors under the University of Santo Tomas Information Technology Department. There are three types of users which are the Admin, Faculty, and Student accounts. Each account has a dashboard depending on what type of user they are, which they can use to do the specific functions that each type of user can do. The chairperson of the IT Department will be the admin and will have an administrator account which will help them manage the capstone projects to be

added to the system. Faculty accounts can create collaboration groups. Students can join the collaboration groups created by the Faculty account. Faculty accounts can also opt to archive groups and view them in the Archived Groups tab.

Students must register and log in using the email address that the University of Santo Tomas provided, which has the school domain (ust.edu.ph). Students can select a capstone project title and view the capstone project details and conference paper document. Admin and Faculty accounts can select a capstone project title and view the full documents of the capstone projects. All types of users can search and browse through the capstone projects and will also have the ability to sort the list of capstone projects by title, year published, specialization, and name of technical adviser. To avoid redundancy in proposals, the ACM will be the basis of the new students who will create proposals. The students will manually open the ACM of the IP registered capstone projects and see if their proposal is the same as the past project.

Student accounts can upload their capstone project details and documents through the submit final requirements tab. The admin needs to log in to the admin account to have the ability to manage the capstone projects on the website and to approve or decline pending capstone projects using the admin dashboard. All types of users also have the option to change the password of the account through the My Account section.

**Purpose and Description**

The Web-based application called Capstone Project Directory System will serve as a platform to provide an efficient way of managing and organizing the different

capstone projects. The system will be a centralized web page repository that will properly store each capstone project and will prevent them from keeping projects in the wrong compartments. It will also manage the IP registry of different IT specialization capstone projects and lastly, the panelist can review the uploaded capstone files of the students.

The application will be beneficial to the faculty members and students of UST Information Technology Department, especially those who are taking the capstone course because the system will serve as a basis to see if a proposal is already proposed by another group. This will prevent them from creating a similar topic and will avoid duplication. The Capstone Project Directory System for UST IT Department will also help the Faculty members and students facilitate the uploading of Capstone Project Documents for panel reviews.

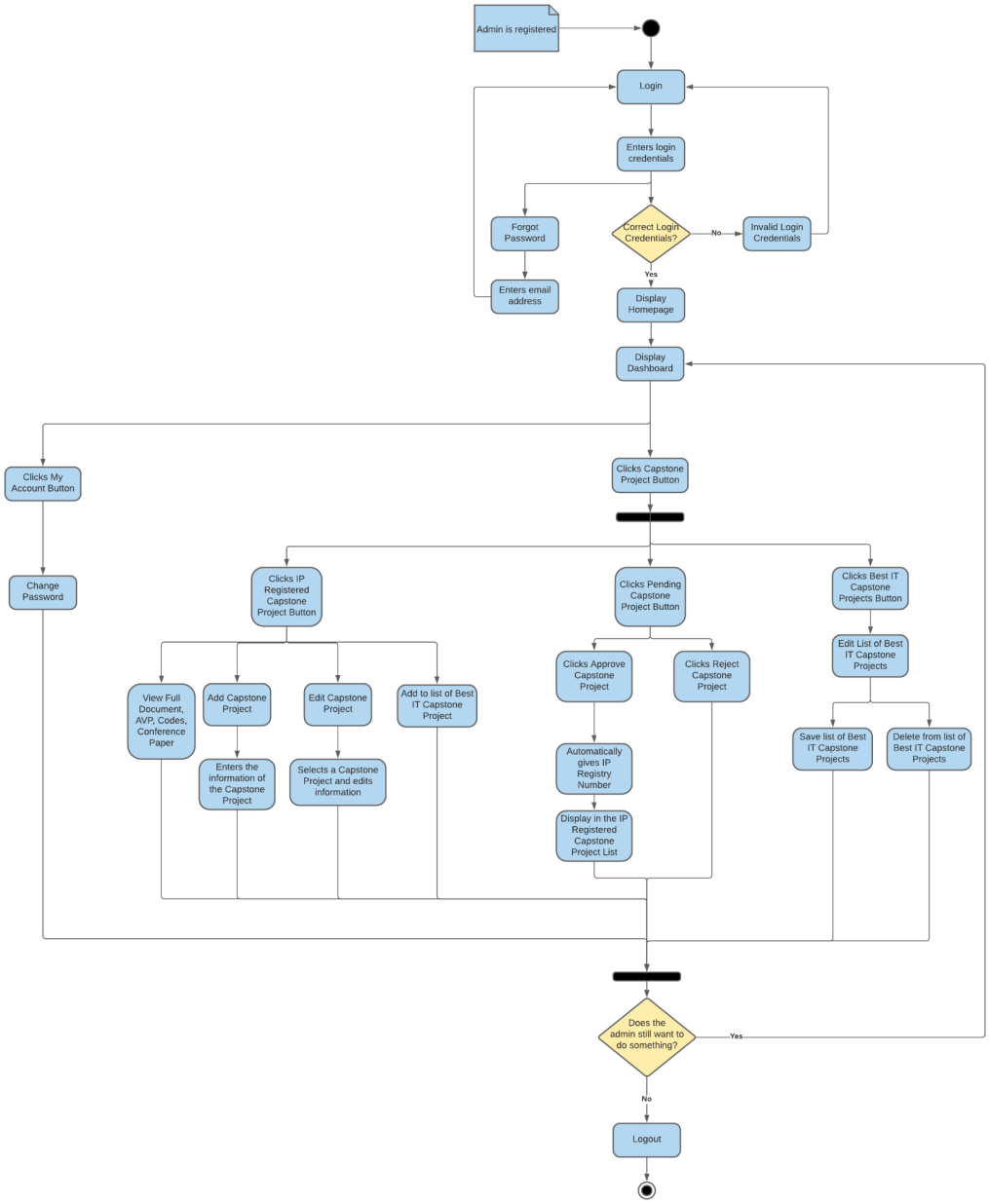


*Figure 1.2: UML Activity Diagram for Capstone Project Directory System (Admin Side)*

Figure 1.2. The diagram started when the admin opened the website. The admin is directed to the login page of the website. The admin needs to enter their correct login credentials first in order for them to access the website. If the login credentials are

correct, they will be redirected to the homepage. If they entered incorrect login credentials, they would not be able to access the website. This is to ensure the security of the system. If the admin forgot their password, there is an option to reset their forgotten password through an email. Once the admin entered their correct login credentials, they will be redirected to the website's homepage with the help of the dashboard. The dashboard contains four buttons: Homepage, My Account, Capstone Projects, and Sign Out button to help the admin manage the Capstone Projects in the system. The admin can go to the My Account section, where they can change their account password. The Capstone Project button is a drop-down button that contains three different buttons: IP Registered Capstone Projects, Pending Capstone Projects, and Best IT Capstone Projects. When the admin clicks the IP Registered Capstone Projects, it will display the table of all the IP Registered Capstone Projects where they can view and sort the Capstone Projects that are currently in the system. They can also click the view button at the right side of every Capstone Project in the table to display the full document, AVP, Conference Paper, and download the Source Code of the Capstone Project. On this page, the admin can also click the Add Capstone Project button, Edit Capstone Project button, and Add to the List of Best IT Capstone Projects. When the admin clicks the Add Capstone Project button, it will display a page where they are required to enter the information of the Capstone Project that they want to add to the system. When the admin clicks the Edit Capstone Project button, they need to select a capstone project that they want to edit, and the edit page will be displayed. The Edit Capstone Project function is included if the admin had a mistake when adding the capstone project to the system. When the admin clicks the Add to the List of Best IT Capstone Projects button, the capstone project will be displayed on

the Best IT Capstone Projects page. The other button in the dashboard is the Best IT Capstone Projects Button and when the admin clicks this button, it will display the Best IT Capstone Projects in the system. In this page, they can also click the Edit Best IT Capstone Project button where they can save and delete the Best IT Capstone Projects that is displayed in the page. The Pending Capstone Projects displays the list of all pending capstone projects that don't have IP Registry. When the admin clicks the Approve Capstone Project, the system will automatically give the capstone project an IP Registry number and it will be transferred to the list of IP Registered Capstone Projects. If the pending capstone project does not fulfill all of the requirements, the admin can click reject capstone project and if the admin clicks the reject capstone project, it will display a pop up that will ask the admin for confirmation. When the admin clicks yes, it will remove the capstone project in the list. When the admin is done with the system, they can click the signout button and they will be logged out into the system.

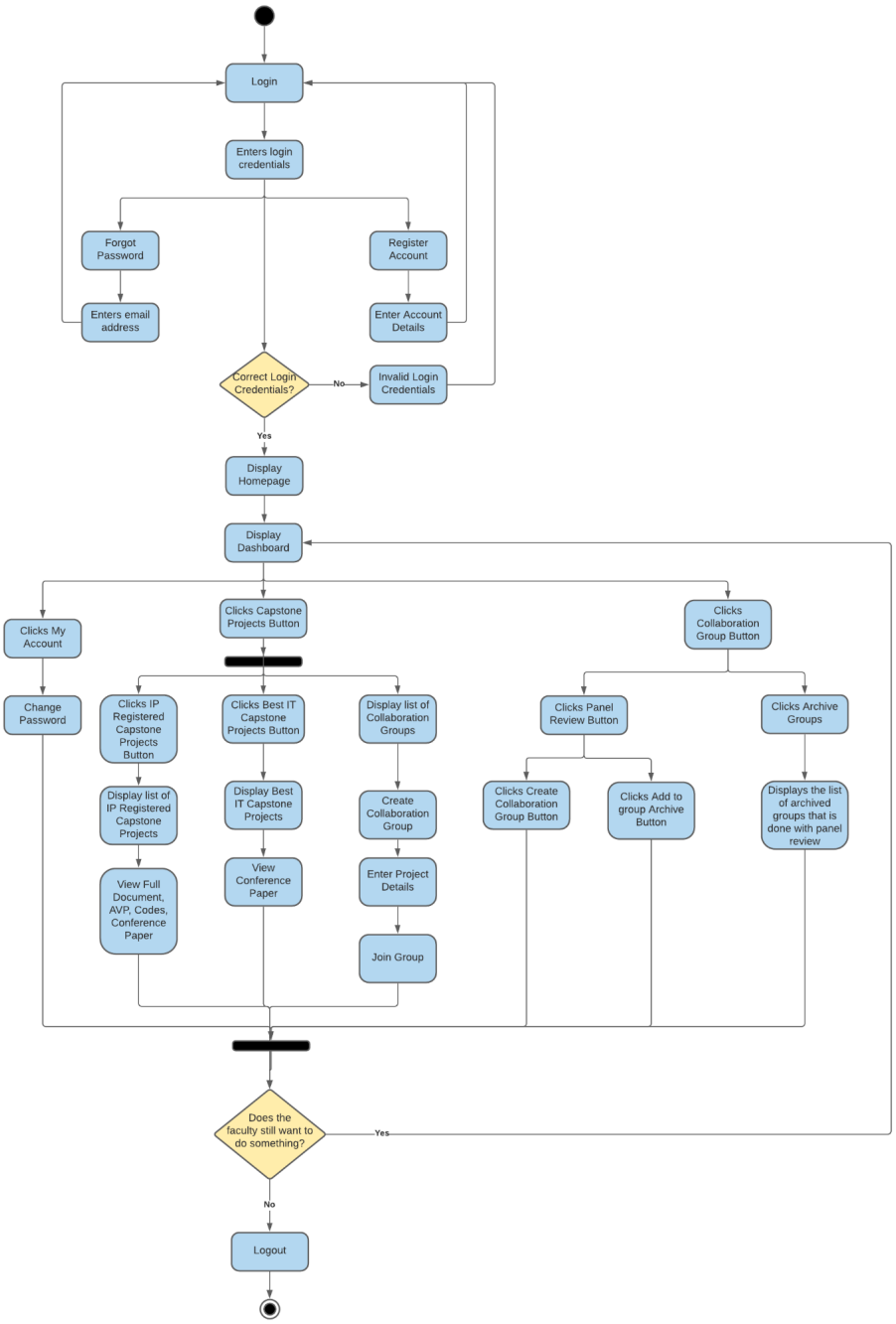


*Figure 1.3: UML Activity Diagram for Capstone Project Directory System (Faculty Side)*

Figure 1.3. The diagram started when the Faculty User opened the website. The Faculty User is directed to the login page of the website. The Faculty User needs to enter their correct login credentials first in order for them to access the website. If the login credentials are correct, they will be redirected to the homepage. If they entered incorrect login credentials, they will not be able to access the website. This is to ensure the security of the system. If in case the Faculty User forgot their password, there is an option to reset their forgotten password through an email. If the faculty doesn't have an existing account, they will be required to register into the system. Once the Faculty User entered their correct login credentials, they will be redirected to the homepage of the website with the help of the dashboard. The dashboard contains 5 buttons: Homepage, My Account, Capstone Project, Collaboration Group and Logout button. When the Faculty User clicks the My Account button, it will show them the page where they can change their password. The Capstone Projects button in the dashboard is a drop down button and if the Faculty User clicks the Capstone Project button, it will show them the different functions that they can use in viewing and sorting the different IP Registered Capstone Projects in the system. The Capstone Project Button has 2 different buttons: IP Registered Capstone Projects, Best IT Capstone Projects. When the Faculty User clicks the IP Registered Capstone Projects button, it will display the list of all IP Registered capstone projects in the system. The Faculty Accounts can view the full document, conference paper, AVP, and download the source code of the Capstone Project. When the Faculty User clicks on the Best IT Capstone Projects, it will display the Best IT Capstone Projects that are in the system. The Collaboration Group is a drop down button and when the faculty clicks the Collaboration Group button, it will display the button for Panel Review and Archive

Groups. When the Faculty User clicks the Panel Review Button, it will display all the list of capstone projects in the current semester that need panel review. With this button, it will help them to organize the capstone projects for panel review. At the Collaboration Group page, they can click the Create Collaboration Button and it will direct them to the Create Collaboration Group page where the Faculty Users need to input the information of the groups that is needed for panel reviews. At the Collaboration Group page, the Faculty Users can join the group where they are the Panelist, Technical Adviser, or Class Coordinator in order for them to view the link of the document of the group. When the Faculty clicks the Archive Groups button, it will display all of the archive groups that are done with the panel review. The groups will only be archived at the end of the school year. The archived group's purpose is to hide the archived groups in the past years. When the Faculty Users are done with the system, they can click logout and they will be logged out from their account.

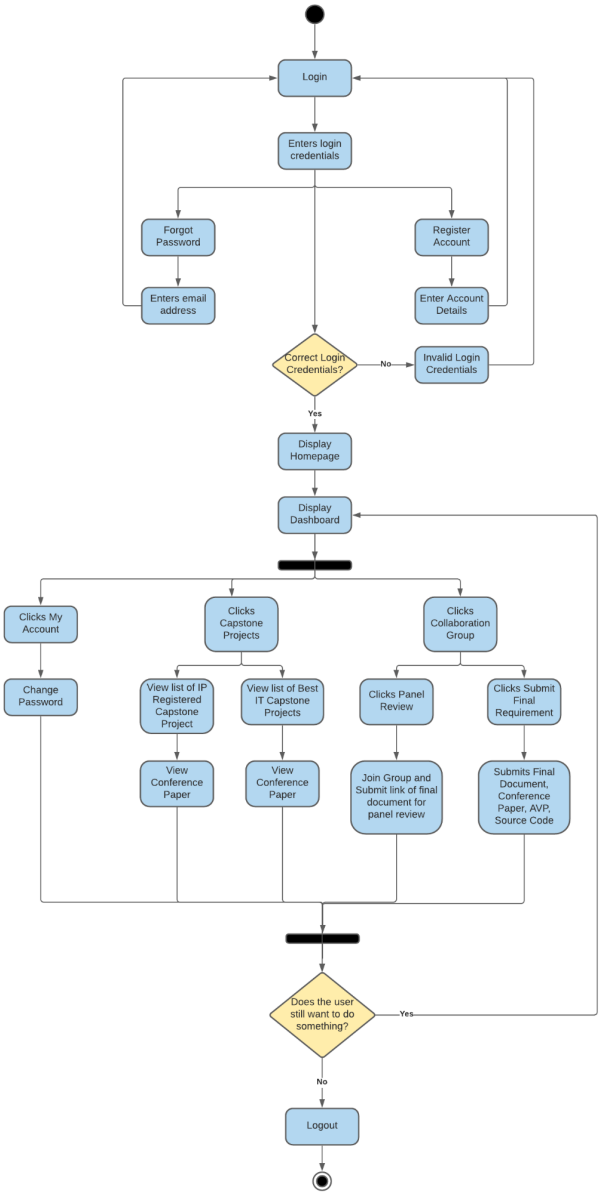


*Figure 1.4: UML Activity Diagram for Capstone Project Directory System (Student Side)*

Figure 1.4. The diagram of the student side starts also on the login page where they need to input their login credentials correctly so that they can access the website. In case the student doesn't have an existing account, they will need to register their account by clicking on the register button. If the user forgot their password, they can also reset it

by clicking on the forgot password button and it will send an email to them so that they can change their password. After they login in the login page with the correct login credentials, they will be redirected to the homepage of the website. At the right side of the homepage is the dashboard, which will help them navigate the system. The Dashboard contains 5 buttons: Homepage, My Account, Capstone Projects, Collaboration Group and Sign Out Button. The My Account button gives the Student a function where they can change their password. The Capstone Projects button is a drop down button that contains: IP Registered Capstone Projects, Best IT Capstone Projects. When the user clicks the IP Registered Capstone Projects button, the list of all the IP Registered Capstone Projects in the system will be displayed. The user can search and sort the list and if they click the view button, the Conference Paper of the capstone projects will be displayed. When the user clicks the Best IT Capstone Projects button, the page of all the Best IT Projects in the system will be displayed. The Collaboration Group is a drop down button that has 2 buttons: Panel Review and Submit Final Requirements button. When the user clicks on the Panel Review button, it will show all the lists of the groups that need a panel review. The Student can join a group where they belong and submit the link of their document. When the Student clicks the Submit Final Requirements button, it will display the page where they will need to input and upload the final requirements in their Capstone Project Subject such as Title of the Project, Authors, Year Published, Technical Adviser, AVP, Conference Paper, Source Code, and Keywords. When the Student is done with the system, they can click the logout button and they will be logged out into the system.

## Objective

### General Objective:

The general objective of this project is to develop a web application for managing and storing UST-IT capstone projects.

### Specific objectives:

1. To create a centralized repository of UST-IT capstone projects where users can access information on the list by logging in using their UST G-Suite Account.
2. To manage the IP Registry of different IT specialization capstone projects.
3. To facilitate the uploading of capstone files for IP registration and panel review.
4. To secure the database content using hashing function.

## Scope and limitations

### Scope

**The scope of the project covers the following:**

1. There will be three log-in accounts: Admin, Faculty, and Students.

   1.a. Registration of accounts will be available for the Faculty and the Students.

1.b. The administrator account will be created and will be handed to the IT Chairperson automatically.

2. The system will provide a list of IP registered capstone projects where the faculty can view the whole project and the final requirements while the students can only view the conference paper.
3. The system will provide a page for students which will allow them to submit their final project and the final requirements and wait for the approval of the administrator.
4. There will also be a pending capstone project page where the administrator will accept or decline the submitted final project of the students. Once accepted, the final project should be together with the final requirements such as the ACM and the full document which should be in PDF format, the source code which must be in ZIP file format, and the AVP which should be in MP4 file format. This will be listed in the IP registered capstone projects and an IP registration number will also be assigned to the project.
5. The system will also provide a page for the best capstone projects which is managed by the administrator.
6. The system will provide a group collaboration page in which students and faculty can join and share the link of their final document.

7. A create collaboration group will be available for the faculty in which they can accept members.
8. The administrator account will have the ability to add, edit, and delete in the lists of IP registered capstone projects.
9. For the past capstone projects with IP registration numbers, the administrator will manually input the registration numbers.
10. A dashboard will be available for the administrator, faculty, and the students which will help them to navigate into different pages.
11. The system will allow sorting past of capstone projects which will be done based on the IP registration number, project title, specialization, year published, and technical adviser.
12. The system will provide a my account page where all the users can see information about their account and change their password.
13. The system will secure the database using hashing function while the accounts will be secured by using the UST G-suite email.
14. The search function will be limited to searching by using IP registration number, title, specialization, year published, technical adviser, and keywords.

## Limitations

**The limitations of the study are as follows:**

1. The Administrator is the only one who will approve the submitted final projects by the students and will be able to add, edit, and delete in the past capstone projects.
2. The students can only view details such as specialization, author/s, year published, technical adviser, and the conference paper of a project.
3. The chairperson of the Information Technology Department will be the only one who will have access to the administrator account.
4. The system will require students to register themselves using their UST G-Suite account in order to view the system.
5. For the ACM and Full Document of the Capstone Project, only the PDF file type will be accepted by the system.
6. The students will only be able to attach the link of their document for panel reviewing.
7. The system will not have a file viewer in which the faculty members can comment or edit.

## Chapter 2: Review of Related Literature

Capstone Project is a requirement for the graduating students in the UST IT Department. It is essential for every IT student as it plays a vital role in the confidence and competence of the students and is a valuable resource for evaluating the amount of achievement of student outcomes as well as the majority of the knowledge gained by students during their studies (Abu Salem et al., 2020). A study by Wieck, M in 2003 titled “The Capstone Project - A Foundation for Work?” tested the Information and Communication students at Christchurch Polytechnic Institute of Technology, based in New Zealand and it shows that at the very least, the result of the Capstone Project was pleasing that the changes in confidence and competence demonstrated by the chosen measures were in the right direction. Considering the amount of UST IT Department graduates, the proponents thought of making a website that can help the UST IT Department in managing their data by making a centralized repository for all of the capstone projects.

Having a centralized repository for the UST IT Department will benefit the IT students to fastly gather ideas and help them avoid duplication of projects. It will be easy for the students to gather information and have access to the projects of other students. This will help students to have an efficient workflow researching (Hruby, et al., 2013). According to (Malik, et al., 2018), the students were asked if they had read the previous thesis of previous students who had already graduated in a survey performed by the researchers. According to the poll, 91.9 percent of respondents stated that they read previous students' work, and 95.2 percent felt that a platform where students' projects can be posted is required. The researchers anticipate that by building this platform, students

will save time by not having to look at their previous projects. Students will be able to locate projects much more quickly if they have access to a platform that allows them to search and sort. According to (Rouse, 2018), it will be necessary to have a searchable file for the students where they can easily access, locate, and retrieve information. Having a searchable feature in the system will help the students to save time, because once the student searches for the specific capstone project that they are looking for, the system will automatically find that specific project and show it to the student. Hence, the students will not have a hard time scrolling and finding the project they were looking for.

Data archiving is one of the best ways to handle the different capstone projects in the centralized repository. It is one of the best practices in storing and Managing Data. According to Alokluk (2019), data archiving and document management is one of the most effective techniques to deal with excessive data accumulation and is critical for firms that generate new data but need to keep older data on hand. This means that data archiving is essential when it comes to preserving data. This may be one of the methods that may be used in storing capstone projects. This will ensure that new and old projects will be stored in a repository and will be accessible when needed. Also, another study by Tibbo, H in 2003 titled “On the Nature and Importance of Archiving in the Digital Age” tells that the archiving of data is important and present in all of the generations. It was used for discoveries, inventions, and even by reconstructing the past. This shows the importance of having a repository in which ideas may be stored. This means that storing capstone projects for the past and present projects may be as important as any data in the past because it may be a stepping stone to a new creation in the future.

Managing capstone projects involves monitoring the data displayed within the system and implementing the characteristics of a database management system (DBMS). It will help in efficiently centralizing data and in managing all of the procedures involving the system (Susanto & Meiryani, 2019). Capstone projects involve a lot of data as it is comprised of the documents and details within a project which highlights another benefit of implementing the DBMS, which is the ability to quickly search through multiple amounts of data (Luthor, 2019), and efficient access to papers at any given time (Costoiu et al., 2012). Data storage will be centrally stored through a server (Matheu, 2005) and will be accessible through a web application. Storing virtual copies of capstone project documents will also prove useful in preventing the difficulties of monitoring and loss of data of physical copies from human errors such as misplacement and from natural causes like natural disasters (Caluza, 2017).

**Synthesis of the Related Literature and Studies**

*Table 2.1 - Synthesis Table*

| Number | Author | Title | Content | Relation |
|---|---|---|---|---|
| 1 | Abu Salem et. al, (2020) | Effective Assessment of Computer Science Capstone Projects and Student Outcomes | The positive effects of Capstone Projects in Students | The reason why is Capstone Project Important for Students |
| 2 | Wieck, M., (2003) | The Capstone Project - A foundation for work? | Capstone Project is requirements for Students | The reason why there are many Capstone Projects in UST IT Department |
| 3 | Hruby et. al, (2013) | A centralized research data repository enhances | Implementing an open source centralized research data | The use of centralized repository for the UST IT |

| | | | | |
|---|---|---|---|---|
| | | retrospective outcomes research capacity: A case report | repository | Department |
| 4 | Malik et. al, (2018) | Web-based Archive Management and Student Guidance for Final Year Projects | Difficulty for the students on reading the past projects of the students. | The reason why students spend more time on finding the projects of the previous students. |
| 5 | Rouse, M., (2018) | Use of Online Public Access Catalogue (OPAC) in Selected University Libraries in South- South Nigeria | How other universities in South south Nigeria efficiently use the OPAC to retrieve the data they're looking for. | Shows how to easily locate and retrieve the data. |

| | | | | |
|---|---|---|---|---|
| 6 | Alokluk, J., (2019) | Archiving and Document Management at Taibah University: A Case Study | Methods used and practiced in Archiving and Managing Documents in Taibah University | Shows how to handle data effectively and how we can apply it in our system |
| 7 | Tibbo, H., (2003) | On the Nature and Importance of Archiving in the Digital Age | How archiving affected the past generations and its importance in the digital age. | Shows the importance of Data Archiving and how can it help in managing the Capstone Projects |
| 8 | Susanto et. al., (2019) | Database Management System | The functionalities of a database management system | The storing of all the data needed for the capstone project directory system. |

| | | | | |
|---|---|---|---|---|
| 9 | Matheu, N., (2005) | Life Cycle Document Management System for Construction | The definition and advantages of a document management system. | The abstract of capstone projects are written in text documents which would be the file type that would be stored in the system. |
| 10 | Luthor, J., (2019) | Why Are Database Management Systems Important to Business Organizations? | Explains the importance of a database management system for reducing difficulties in data sharing in an organization. | The data sharing of capstone projects would make things simpler in terms of handling capstone projects for those under the UST IT |

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|---|---|---|---|---|
| | | | | Department. |
| 11 | Caluza, L., (2017) | Development of Electronic Document Archive Management System (EDAMS): A Case Study of a University Registrar in the Philippines | Importance of developing an EDAMS for the Leyte Normal University's Office of the Registrar | Explains why it is important to preserve documents due to storage space and physical restrictions. |
| 12 | Costoiu et. al., (2012) | Electronic Document Management Information System for Universities | Implementation of a document management system in universities to boost performance on education. | Shows how effective a document management system is with regards to performance and could be especially useful in |

| | | | | |
|---|---|---|---|---|
| | | | | research tasks such as the Capstone Project. |

# Chapter 3: Technical Background

## Requirement Analysis

### Functional Requirements

- **Login** - A function that lets the user access the system.
- **Register** - A function that allows the user to create an account for the system.
- **Forgot Password** - A function that lets the user reset their password using their registered email.
- **Change Password** - A function that allows the user to change their password.
- **View list of IP Registered Capstone Projects** - A function that lets the administrator view the list of IP registered capstone projects and edit the list.

- **Approval of Pending Capstone Projects -** A function that allows the administrator to check the submitted projects if complete. Once checked, they may approve or reject the project.
- **Submission of Capstone Projects** - A function that allows the students to submit their final project and final requirements for approval.
- **Best IT Capstone Projects**- A function that allows the administrator to view and edit the list of best IT capstone projects.
- **Collaboration Group** - A function that shows the list of groups created and allows users to join a group and share links for their documents for panel review.
- **Search Button** - A function that allows users to search for a project's IP registration number, title, specialization, year published, technical adviser, and keyword.
- **Logout** - A function that allows the user to end their access to the system.

**Non-Functional Requirements**

- **Functionality** - The functions of the system are able to fulfill the project's purpose and should be functional.
- **Manageability** - The system is easy to use and has all the functions needed in managing capstone projects.
- **Security** - The system requires an account that uses UST email in order to have access to the system.

- **Reliability** - The system is consistently performing all the functions accurately, including the searching and submitting of requirements.
- **Data Integrity** - The data is overall accurate, complete, and consistent.
- **Scalability**- The system is able to handle a high amount of workload by using servers that can be upgraded in the future.

**System Requirements**

**A. Hardware Requirements**

The following were the minimum and optimal requirements for the web browser:

*Table 3. 1 - Minimum and optimal requirements for web browser*

| | **Minimum** | **Optimal** |
|---|---|---|
| **OS** | Windows XP | Windows 10 |
| **CPU** | Intel Core i3 | Intel Core i5 |

The minimum requirement of the OS for the web browser is Windows XP as Windows XP is the minimum requirement of a web browser. The minimum CPU must be Intel Core i3. For the optimal requirements, the optimal OS for the web browser is Windows 10, and for the CPU is Intel Core i5.

### B. Software Requirements

The following were the software requirement for a web browser:

*Table 3. 2 - Software requirements for web browser*

| | | |
|---|---|---|
| **Software Tools** | | Web Browser |
| | Backend Programming Language | Java |
| | Integrated Development Environment | Visual Studio Code |
| | Version Control System | GitHub |
| | Frontend | CSS |
| | Database | MongoDB |

For the web browser, both java and javascript were utilized as the programming language. CSS is used for our frontend, MongoDB for our database, and Visual Studio Code as an IDE, and GitHub for the version control system.

## I. Design Methodology

### A. Methodology

The proponents decided to use the Iterative Waterfall Development Model in developing the project. This method allows the proponents to fully understand and develop the project. Additionally, this method gives feedback from the previous phase allowing the errors to be corrected early. The Iterative Waterfall Development Model consists of 6 phases: Requirements Gathering, Software Design, Coding/Implementation, Testing, Deployment, and Maintenance.

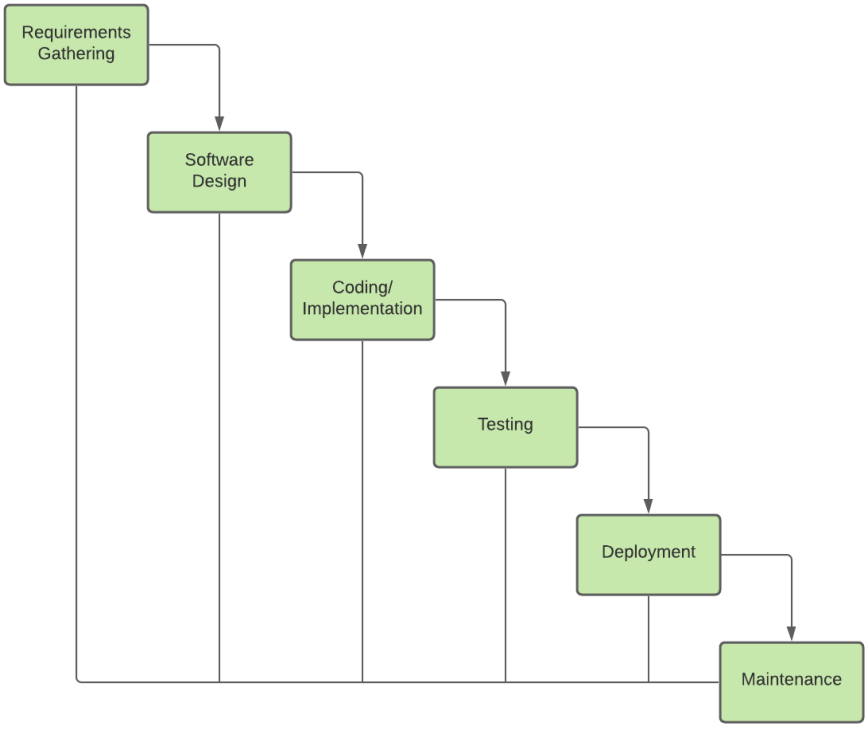


*Figure 3. 1: Iterative Waterfall Development Model*

Phase 1: Requirements Gathering

This is the phase where the developers and the client identify the requirements of the system. The developers had a meeting with the client to list all the functional and non-functional requirements of the system that will be implemented in the system. The group and the client came up with the decision to create a centralized repository of Capstone Projects for the UST IT Department in order to manage the IP registry of different capstone projects, to facilitate the uploading of capstone projects for panel review and IP registration, and to secure the database using a hashing function.

Phase 2: Software Design

This is the phase where the developers started to decide how the system will look like to its target users. This is also the stage where the developers identify the hardware and software requirements that are needed in developing the system. In this phase, the developers created a mockup design of the system.

Phase 3: Coding/Implementation and Testing

This is the phase where the developers will start the development of the system based on the results of requirements gathering and software design. The developers will use Visual Studio Code for the front end of the

system and MongoDB for the backend and for the version control of the system the developers will use GitHub.

Phase 4: Testing

This is the phase where the Quality Assurance officer tests all the functions developed in the system using test cases making sure that it satisfies all of the requirements specified in the Requirements Gathering Phase. Once a function is complete, unit testing will be performed to ensure that it meets the system's functional and non-functional criteria. After passing unit testing, the function will be integrated with other functions via Integration Testing to ensure the functions' integrity in groups. After this phase, the system should have gone through Alpha Testing, which is a series of test cases to identify any bugs or problems in the system. The developers will need to correct and fix the bugs if they are found in the system. The proponents may now proceed to deployment if the client is satisfied with the outcome. If the client is not satisfied with the testing result, the proponents will have to recode the project based on the client’s suggestions and conduct another set of tests.

Phase 5: Deployment

The project will be deployed when the Alpha testing is completed successfully and the client is satisfied with the result. Following Alpha

Testing, the system will go to User Acceptance Testing to ensure that the end user can achieve the goals set in the system requirements. User Acceptance Testing includes a User Acceptance Test Plan and a Feedback Form to ensure that the system meets all functional and non-functional requirements.

Phase 6: Maintenance

The proponents will monitor the system for possible bugs or errors that will occur during the deployment of the system.

## System Design Diagrams

### Activity Diagram

Refer to figure 1.2, chapter 1, page 5. For the admin side of the activity diagram, the admin needs to enter their correct login credentials first in order for them to access the website. If the login credentials are correct, they will be redirected to the homepage. If they entered incorrect login credentials, they will not be able to access the website. This is to ensure the security of the system. If in case the admin forgot their password, there is an option to reset their forgotten password through an email. Once the admin entered their correct login credentials, they will be redirected to the homepage of the website with the help of the dashboard. The dashboard contains four buttons: Homepage, My Account, Capstone Projects, and Sign out button that can help the admin in managing the Capstone Projects in the system. The admin can go to the My Account section, where they can change the password of their account. The Capstone Project button is a drop-down button that contains three different buttons: IP Registered Capstone Projects, Pending Capstone Projects, and Best IT Capstone Projects. When the admin clicks the IP Registered Capstone Projects, it will display the table of all the IP Registered Capstone Projects where they can view and sort the Capstone Projects that are currently in the system. They can also click the view button at the right side of every Capstone Project in the table to display the full document, AVP, Conference Paper, and Source Code of the Capstone Project. In this page, the Admin can also click the Add Capstone Project button, Edit Capstone Project button, Delete Capstone Project button, and add to the list of Best IT

Capstone Projects. When the admin clicks the Add Capstone Project button, it will display a page where they are required to enter the information of the Capstone Project that they want to add to the system. When the admin clicks the Edit Capstone Project button, they need to select a capstone project that they want to edit, and the edit page will be displayed. When the admin clicks the Add to Best IT Capstone Project button, the capstone project will be displayed on the Best IT Capstone Project page. The other button in the dashboard is the Best IT Capstone Project Button, and when the admin clicks this button, it will display the Best IT Capstone Projects in the system. On this page, they can also click the Edit Best IT Capstone Project button where they can save and delete the Best IT Capstone Projects that is displayed on the page. The Pending Capstone Projects displays the list of all pending capstone projects that don't have an IP Registry. When the admin clicks the Approve Capstone Project, the system will automatically give the capstone project an IP Registry number and it will be transferred to the list of IP Registered Capstone Projects. If the pending capstone project does not fulfill all of the requirements, the admin can click reject capstone project, and if the admin clicks the reject capstone project, it will display a pop-up that will ask the admin for confirmation. When the admin clicks yes, it will remove the capstone project from the list. When the admin is done with the system, they can click the sign out button and they will be logged out into the system.

Refer to figure 1.3, chapter 1, page 8. For the faculty user of the activity diagram, the faculty needs to enter their correct login credentials first in order for them to access

the website. If the login credentials are correct, they will be redirected to the homepage. If they entered incorrect login credentials, they will not be able to access the website. This is to ensure the security of the system. If the Faculty User forgot their password, there is an option to reset their forgotten password through an email. If the faculty doesn't have an existing account, they will be required to register into the system. Once the Faculty User entered their correct login credentials, they will be redirected to the homepage of the website with the help of the dashboard. The dashboard contains five buttons: Homepage, My Account, Capstone Project, Collaboration Group, and Logout button. When the Faculty User clicks the My Account button, it will show them the page where they can change their password. The Capstone Projects button in the dashboard is a drop-down button and if the Faculty User clicks the Capstone Project button, it will show them the different functions that they can use in viewing and sorting the different IP Registered Capstone Projects in the system. The Capstone Project Button has two different buttons: IP Registered Capstone Projects and Best IT Capstone Projects. When the Faculty User clicks the IP Registered Capstone Projects button, it will display the list of all IP Registered capstone projects in the system. The Faculty Accounts can view the full document, conference paper, AVP, and Source Code of the Capstone Project. When the Faculty User clicks on the Best IT Capstone Projects, it will display the Best IT Capstone Projects that are in the system. The Collaboration Group is a drop-down button, and when the faculty clicks the Collaboration Group button, it will display the button for Panel Review and Archive Groups. When the Faculty User clicks the Panel Review Button, it will display the list of capstone projects in the current semester that needs panel review. This button will help them to organize the capstone projects for panel review. At

the Collaboration Group page, they can click the Create Collaboration Button and it will direct them to the Create Collaboration Group page where the Faculty Users need to input the information of the groups that is needed for panel reviews. On the Collaboration Group page, the Faculty Users can join the group where they are the Panelist, Technical Adviser, or Class Coordinator in order for them to view the link of the document of the group. When the Faculty clicks the Archive Groups button, it will display all of the archive groups that are done with the panel review. When the Faculty Users are done with the system, they can click logout, and they will be logged out from their account.

Refer to figure 1.4, chapter 1, page 11. For the student side of the activity diagram, the student needs to input their login credentials correctly so that they can access the website. In case the student doesn't have an existing account, they will need to register their account by clicking on the register button. If the user forgot their password, they can also reset it by clicking on the forgot password button, and it will send an email to them so that they can change their password. After they login in the login page with the correct login credentials, they will be redirected to the homepage of the website. At the right side of the homepage is the dashboard, which will help them navigate the system. The Dashboard contains five buttons: Homepage, My Account, Capstone Projects, Collaboration Group and Sign Out Button. The My Account button gives the Student a function where they can change their password. The Capstone Projects button is a drop-down button that contains: IP Registered Capstone Projects, and Best IT Capstone Projects. When the user clicks the IP Registered Capstone Projects button, the list of all the IP Registered Capstone Projects in the system will be displayed where the

user can search and sort the list, and if they click the view button, the Conference Paper of the capstone projects will be displayed. When the user clicks the Best IT Capstone Projects button, the page of all the Best IT Projects in the system will be displayed. The Collaboration Group is a drop-down button that has two buttons: Panel Review and Submit Final Requirements button. When the user clicks on the Panel Review button, it will show all the lists of the groups that need a panel review. The Student can join a group where they belong and submit the link of their document. When the student clicks the Submit Final Requirements button, it will display the page where they will need to input and upload the final requirements in their Capstone Project Subject such as Title of the project, Authors, Year Published, Technical Adviser, AVP, Conference Paper, Source Code, and keywords. When the Student is done with the system, they can click the logout button, and they will be logged out into the system.

**Use Case Diagram**

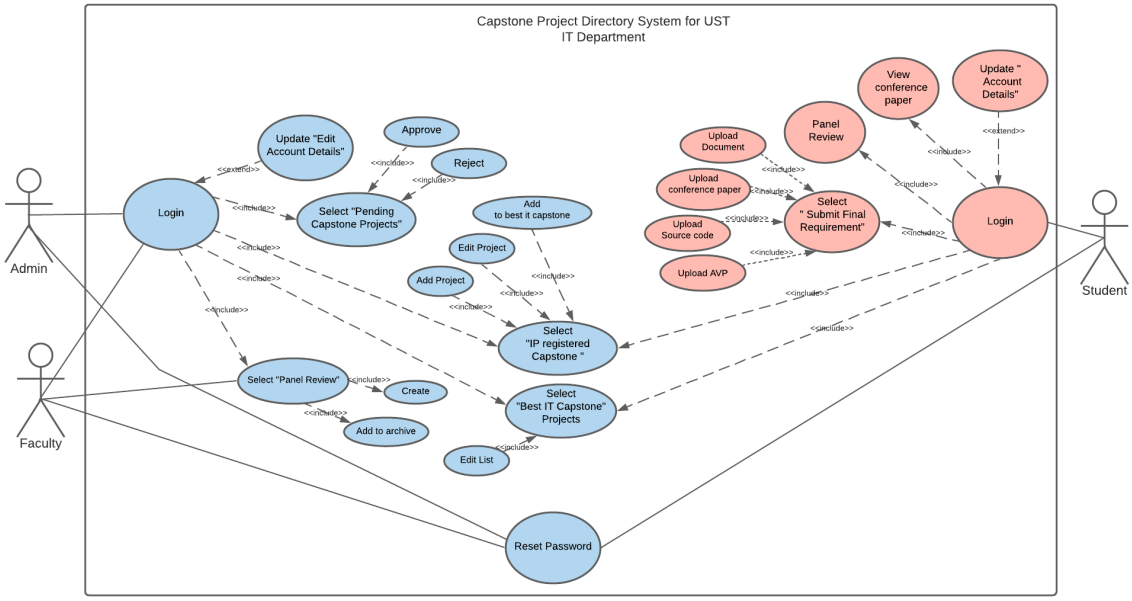


*Figure 3. 2: Use Case Diagram*

The Use Case Diagram presents the functions of three actors named: The Admin, Faculty, and Student. The Admin has the following functions: Login, Add, Edit Capstone Projects, Edit Account Details, Browse/Sort Capstone Projects, Generate IP number, upload project file, add best IT capstone, and Reset Password. While the Faculty side has the following functions: Login, Register account, Browse/Sort Capstone projects, View Best IT Capstone Project, Create, Request, View Full Capstone Project, and Reset Password. Lastly, the Student Side has the following functions: Login, Register Account, Browse/Sort Capstone Projects, Edit Account Details, View Best IT Capstone Project, Join Collaboration Group, Upload Full Capstone Project Document, AVP, Source Code, Conference Paper, and Reset password.

## System Sequence Diagram

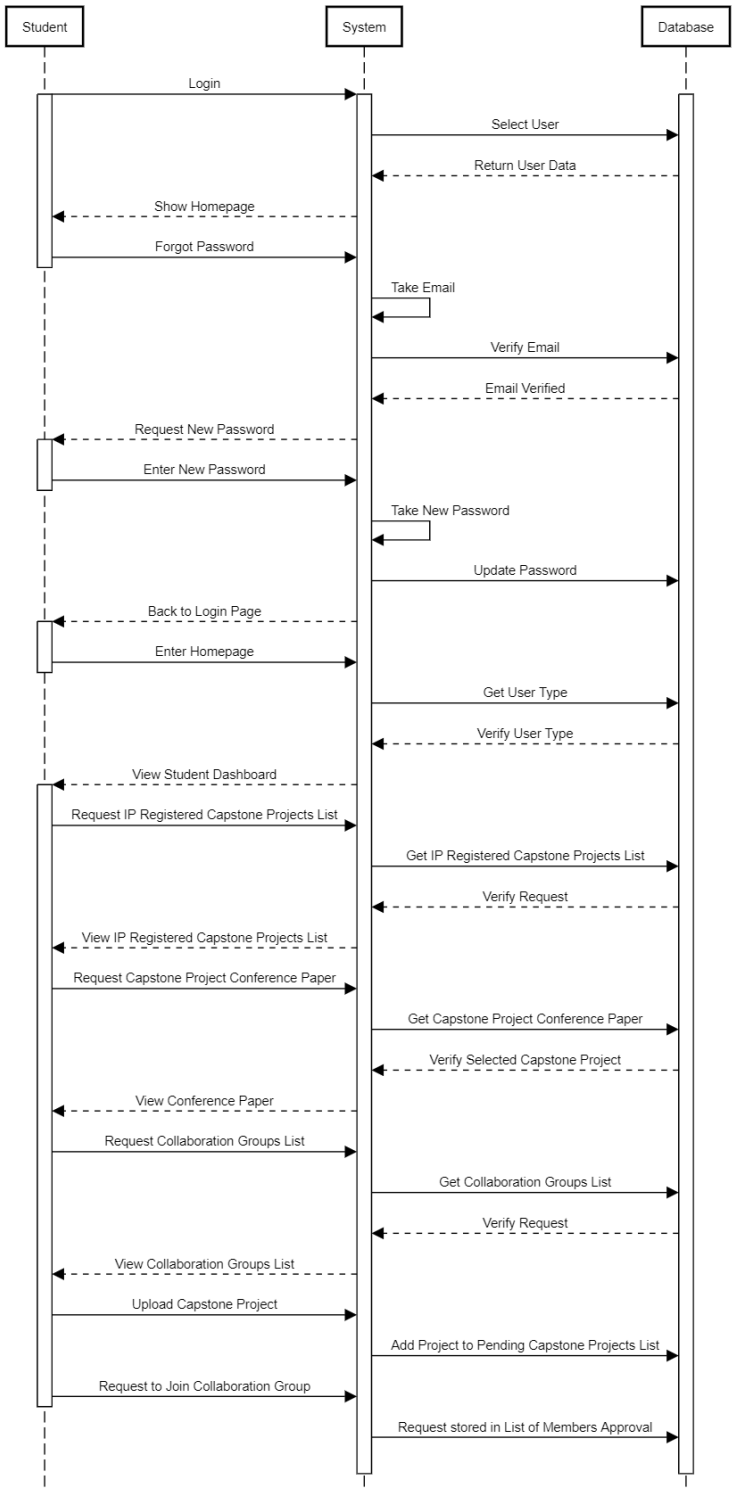


*Figure 3.3: System Sequence Diagram for Student Account*

In figure 3.6, the student has to log in using their account or click ‘forgot password’ should they need to reset their password. In order to reset their password, the user will be prompted to send their registered email where the reset link will be sent. Upon logging in, the system will send the user type of the account to the database to verify which type of dashboard will be displayed for the user.

Once logged in, the student dashboard will be displayed. The student dashboard will allow the user to navigate to the capstone projects list where the user has the option to view the conference paper document that is included in the capstone projects.

The students can upload their capstone project documents to queue it for pending approval by the IT chairperson. The student can also opt to join a collaboration group which is created by faculty accounts.

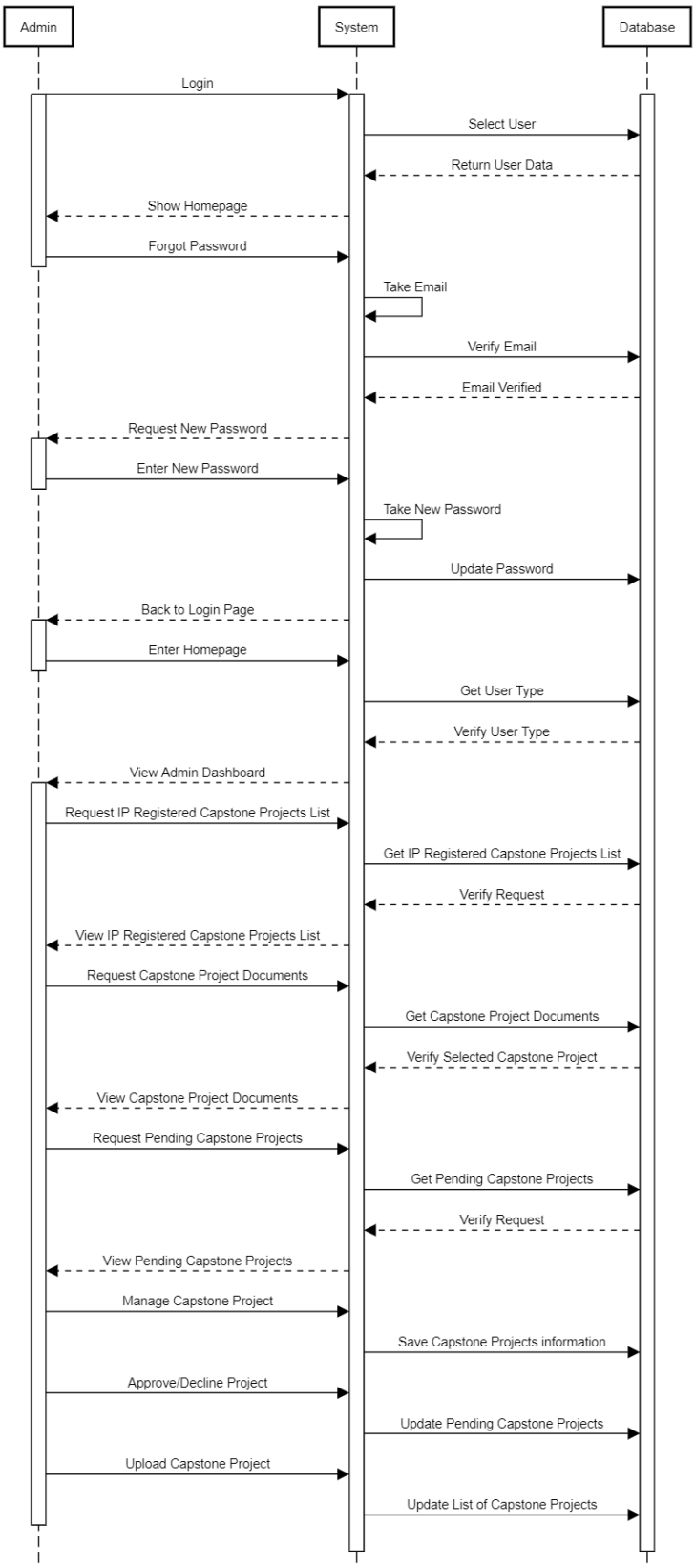


*Figure 3.4: System Sequence Diagram for Administrator Account*

In figure 3.7, the IT chairperson, which is the administrator, has to log in using their account or click ‘forgot password’ should they need to reset their password. In order to reset their password, the user will be prompted to send their registered email where the reset link will be sent. Upon logging in, the system will send the user type of the account to the database to verify which type of dashboard will be displayed for the user.

Once logged in, the admin dashboard will be displayed. The admin dashboard will allow the user to navigate to the capstone projects list where the user has the option to view the full capstone project documents that are included in the capstone projects.

The admin can manage the capstone projects by having the option to add, edit, or delete capstone projects. The admin can also add a capstone project to the list of best capstone projects. The admin can also select a capstone project from the pending capstone projects list to approve or reject.

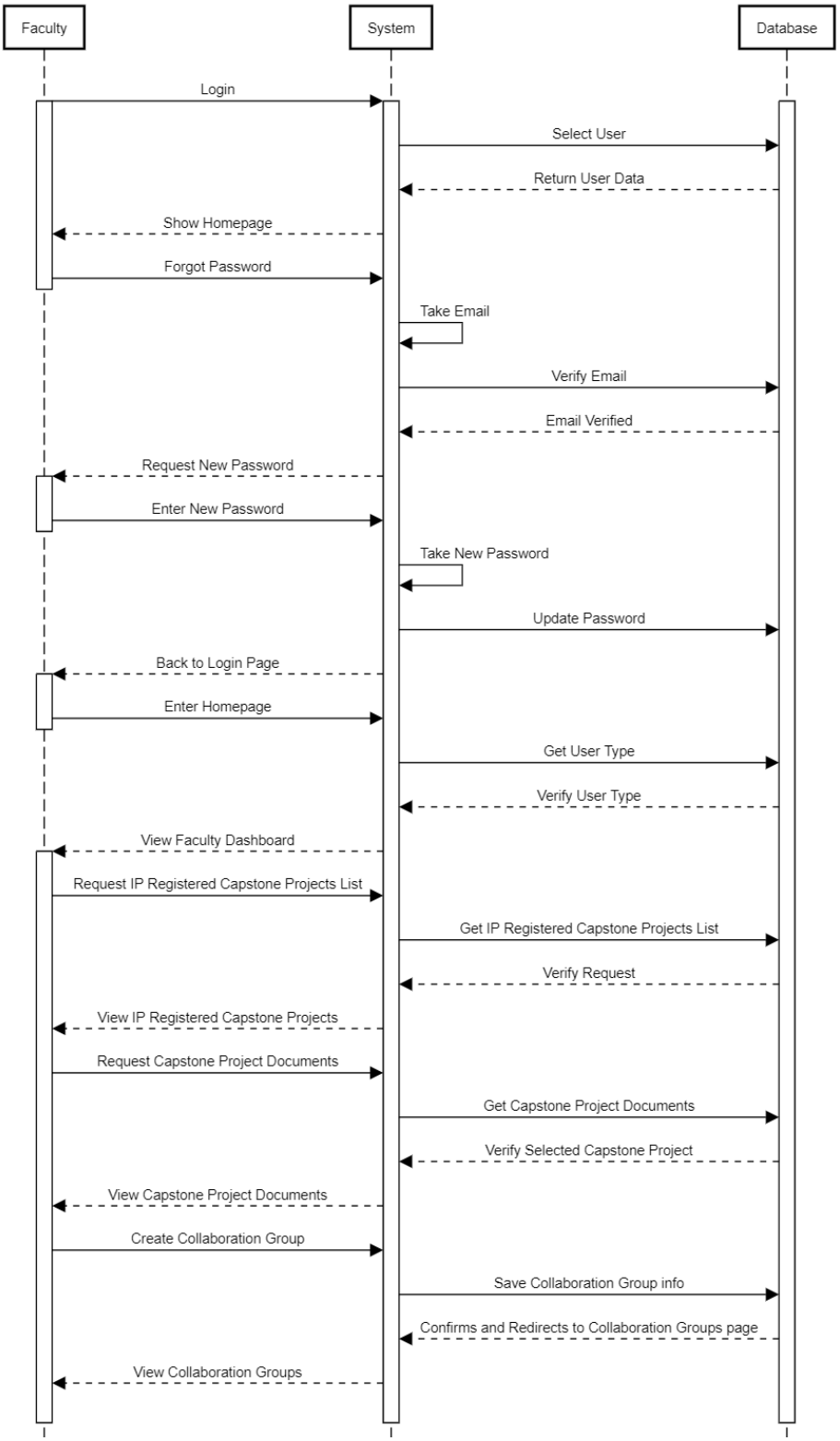


*Figure 3.5: System Sequence Diagram for Faculty Account*

In figure 3.8, the faculty has to log in using their account or click ‘forgot password’ should they need to reset their password. In order to reset their password, the user will be prompted to send their registered email where the reset link will be sent. Upon logging in, the system will send the user type of the account to the database to verify which type of dashboard will be displayed for the user.

Once logged in, the faculty dashboard will be displayed. The faculty dashboard will allow the user to navigate to the capstone projects list where the user has the option to view the full capstone project documents that are included in the capstone projects.

The faculty can create collaboration groups where they must input the details of a capstone project group and its components. The faculty can also request to join other collaboration groups.

**Class Diagram**

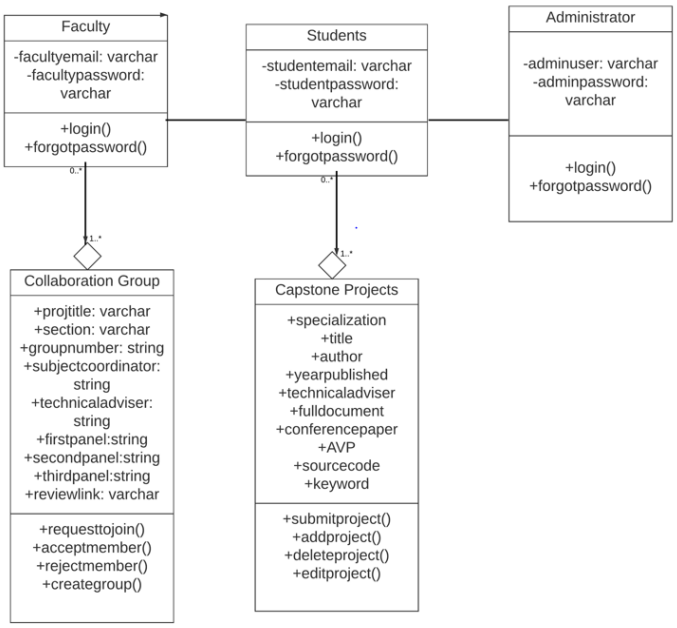


*Figure 3. 6: Class Diagram*

Figure 3.7 shows three types of users in this system: Administrator, Faculty, and the Students. The diagram shows how each class connects to one another and shows how the whole structure and flow of the system will work. Both the students and the faculty members will be required to register in order to access the system. After registration, the student will have the option to view the list of past and approved capstone projects, submit their final requirements, and the collaboration groups in which they have the option to join a group and upload their documents for panel review. While for the faculty, they will have the option to create a collaboration group and to view the list of past and approved capstone projects. For the administrator, they may only add, edit, and view the list of capstone projects and approve the submission of the students.

**Entity Relationship Diagram**

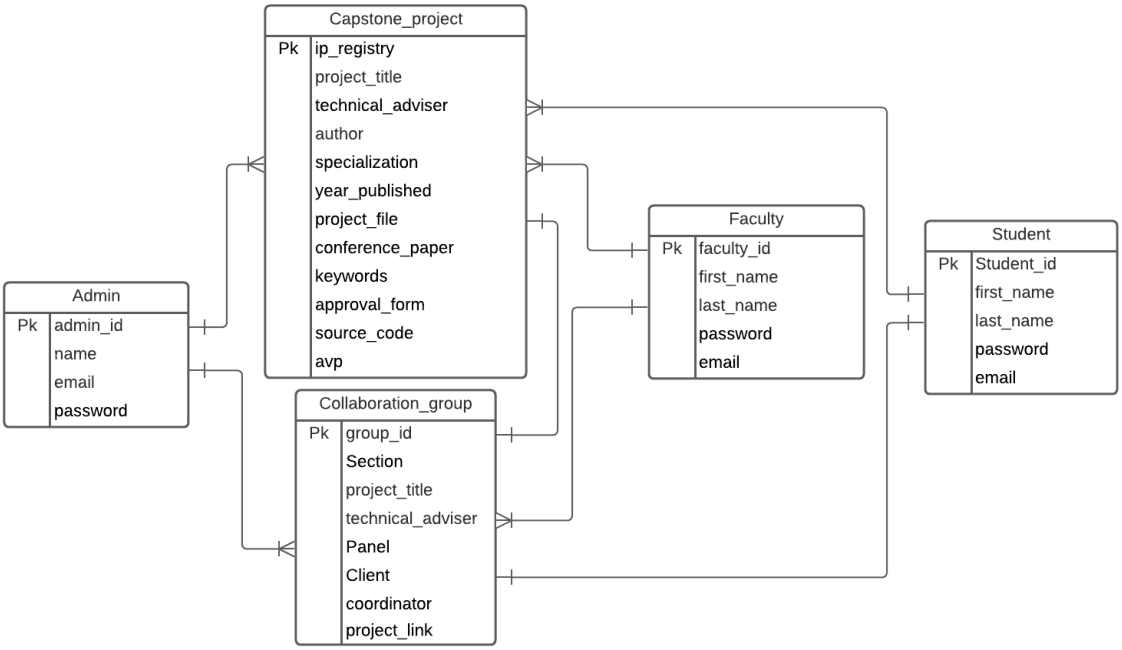


*Figure 3. 7: Entity Relationship Diagram*

The system used an Entity Relationship Diagram. The database comprises five tables that include “Students” who can join one collaboration group and view multiple Capstone projects. “Faculty” who can view multiple capstone projects and join multiple collaboration groups. “Admin” who can view multiple capstone projects and can join multiple collaboration groups. “Capstone project” where anyone can view the project of other students. “Collaboration group” where the students will input the link of their document to be checked by their assigned panel.

**Data Dictionary**

List of the system entities or major data along with their types and descriptions. Include attributes, methods, and method parameters.

| **Admin** | | | |
|---|---|---|---|
| **Name** | **Type** | **Length** | **Acceptable Value** |
| admin_id | Object Id | none | Randomly generated 12-byte alphanumeric value(a-zA-Z0-9) |
| name | string | 1-15 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| email | email | 6-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| password | string | 8-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |

| Collaboration group | | | |
|---|---|---|---|
| **Name** | **Type** | **Length** | **Acceptable Value** |
| group_id | Object Id | none | Randomly generated 12-byte alphanumeric value(a-zA-Z0-9) |
| section | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| project title | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| technical adviser | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| panel | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| client | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| coordinator | string | none | Combination of Uppercase and |

| | | | |
|---|---|---|---|
| | | | Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| project link | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |

| **Capstone Project** | | | |
|---|---|---|---|
| **Name** | **Type** | **Length** | **Acceptable Value** |
| ip_registry | Object Id | none | Randomly generated 12-byte alphanumeric value(a-zA-Z0-9) |
| project title | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| technical adviser | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| author | string | 8-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| specialization | string | none | Combination of Uppercase and |

| | | | |
|---|---|---|---|
| | | | Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| year published | Object Id | none | Randomly generated 12-byte alphanumeric value(a-zA-Z0-9) |
| project file | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| conference paper | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| keyword | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| approval form | string | none | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| source code | string | None | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| avp | string | none | Combination of |

| | | | |
|---|---|---|---|
| | | | Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |

| Faculty | | | |
|---|---|---|---|
| **Name** | **Type** | **Length** | **Acceptable Value** |
| faculty_id | Object Id | none | Randomly generated 12-byte alphanumeric value(a-zA-Z0-9) |
| first name | string | 1-15 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| last name | string | 1-15 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| email | email | 6-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| password | string | 8-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |

| Student | | | |
|---|---|---|---|
| **Name** | **Type** | **Length** | **Acceptable Value** |
| student_id | Object Id | none | Randomly generated 12-byte alphanumeric value(a-zA-Z0-9) |
| first name | string | 1-15 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| last name | string | 1-15 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| email | email | 6-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |
| password | string | 8-25 characters | Combination of Uppercase and Lowercase Letter (A-Z) or (a-z), numeric values (0-9) and some special characters. |

**Mockups**

**Admin Side**

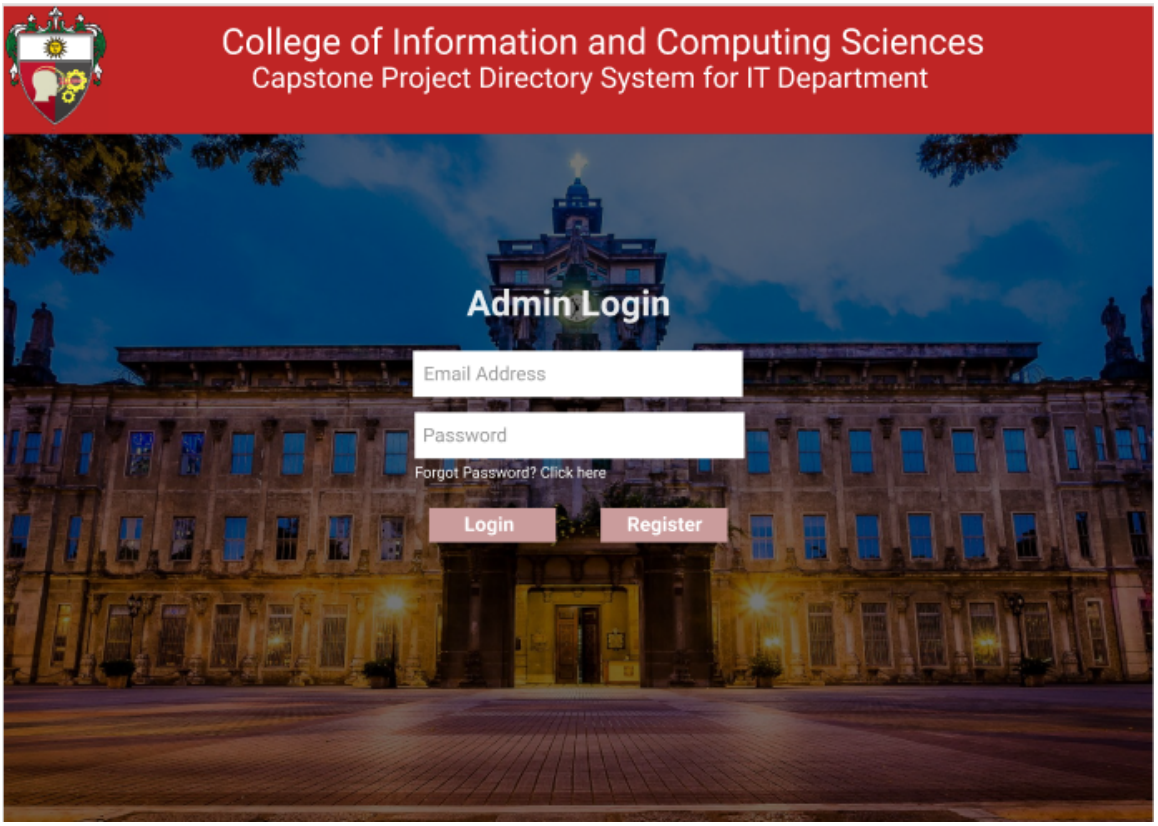


*Figure 3. 8: Login Page (Administrator Side)*

The administrator needs to enter his correct login credentials to access the website.

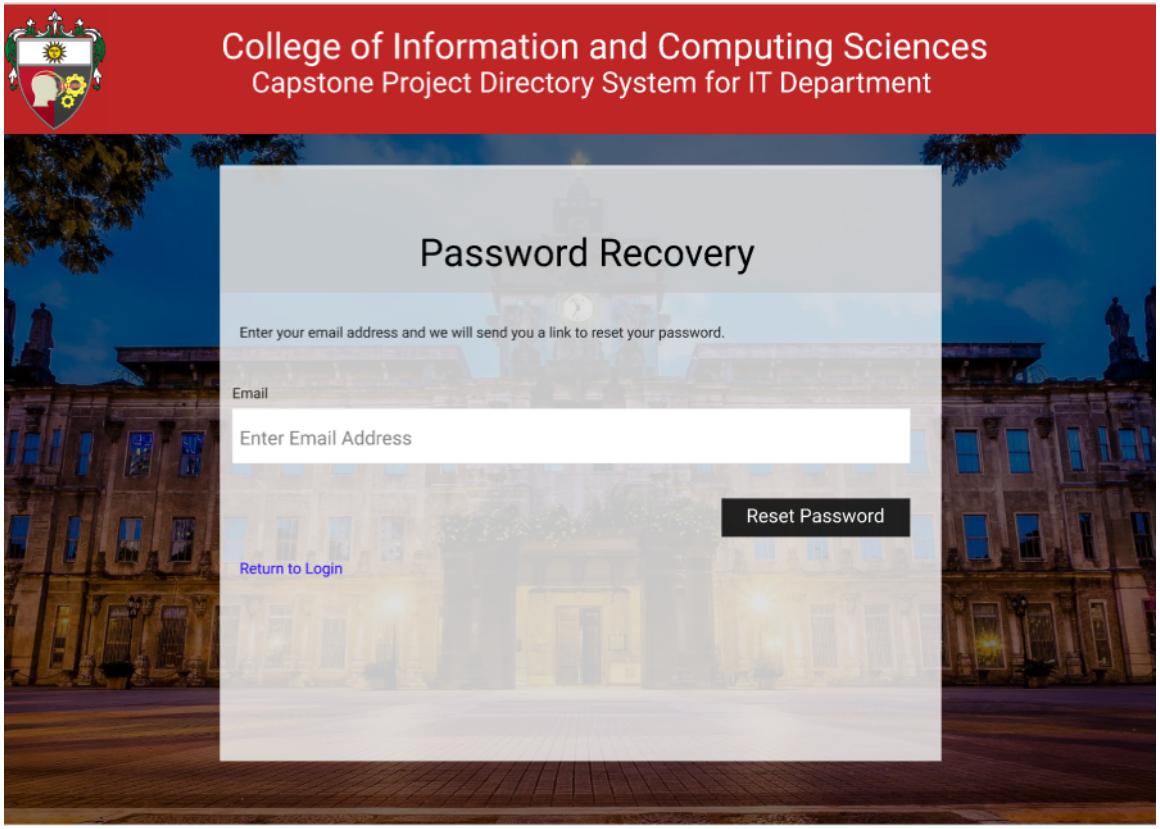


*Figure 3. 12: Forgot Password Page (Administrator Side)*

If the administrator forgot their password and clicked the forgot password link at the login page, they will be asked to enter their email. Afterward, a link will be sent to their email where they can opt to reset their password.

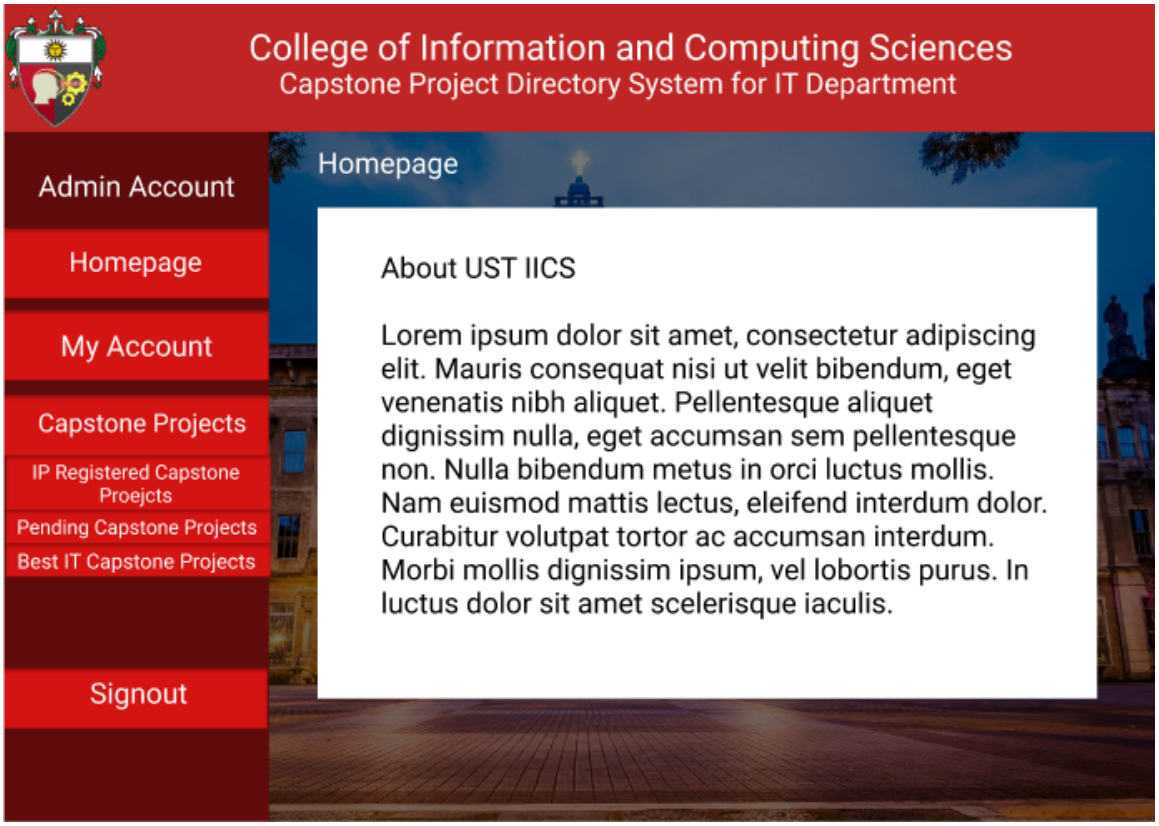


*Figure 3. 13: Homepage (Administrator Side)*

The Homepage shows information about UST CICS and UST IT Department.

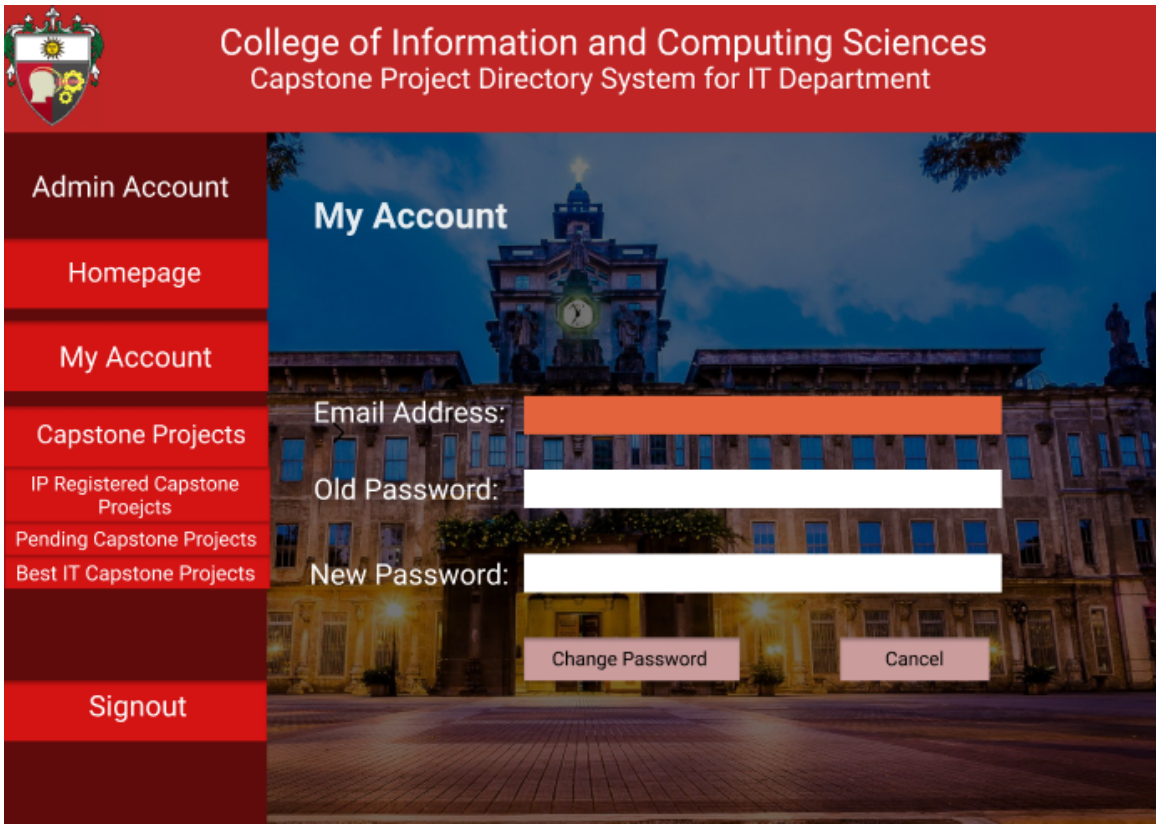


*Figure 3. 14: Change Password (Administrator Side)*

The My Account page allows the administrators to change their password by inputting their old password and their new desired password. The email address textbox is disabled and just shows the email address used in the account.

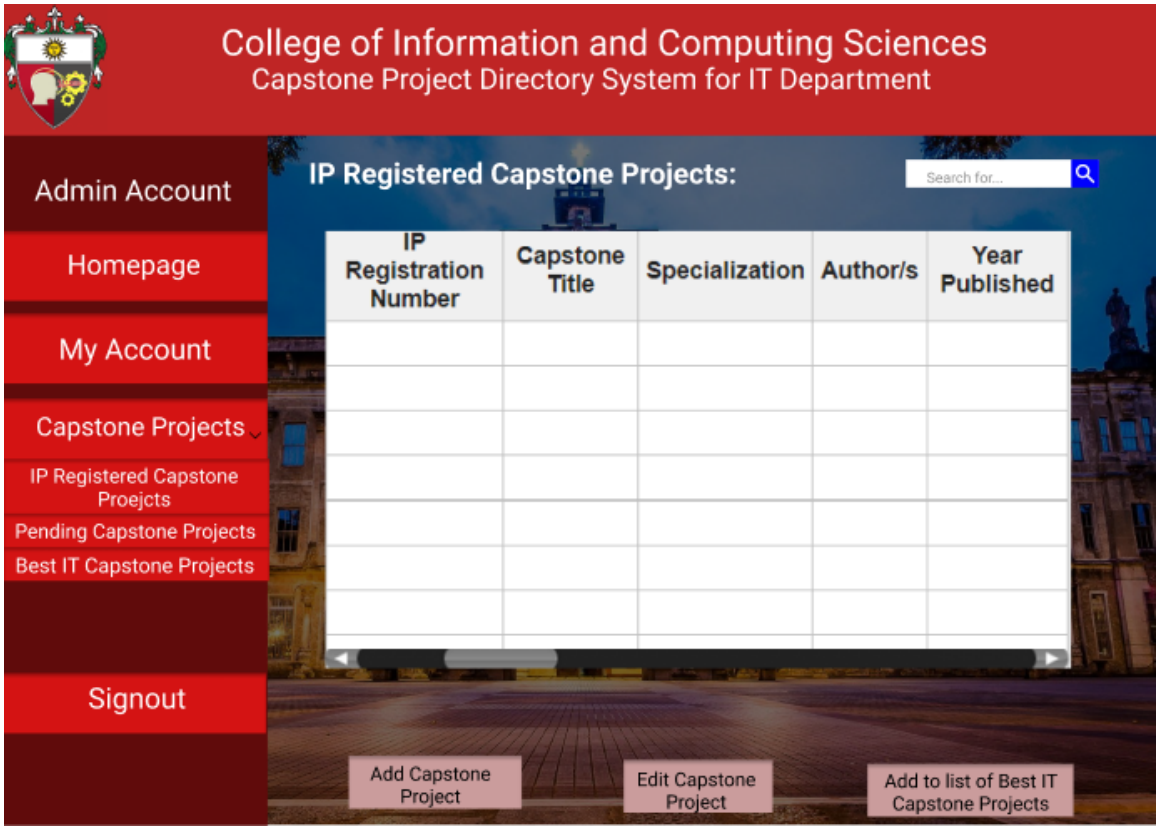


*Figure 3. 15: IP Registered Capstone Projects(Administrator Side)*

This page shows the list of IP Registered capstone projects. The table will show the IP registration number, title, specialization, author/s, year published, technical adviser, abstract, and keywords for searching. An add, edit and delete feature is added in the administrator in case the admin wants to add, edit, or delete past capstones. He may also add a project to the list of best capstone projects.

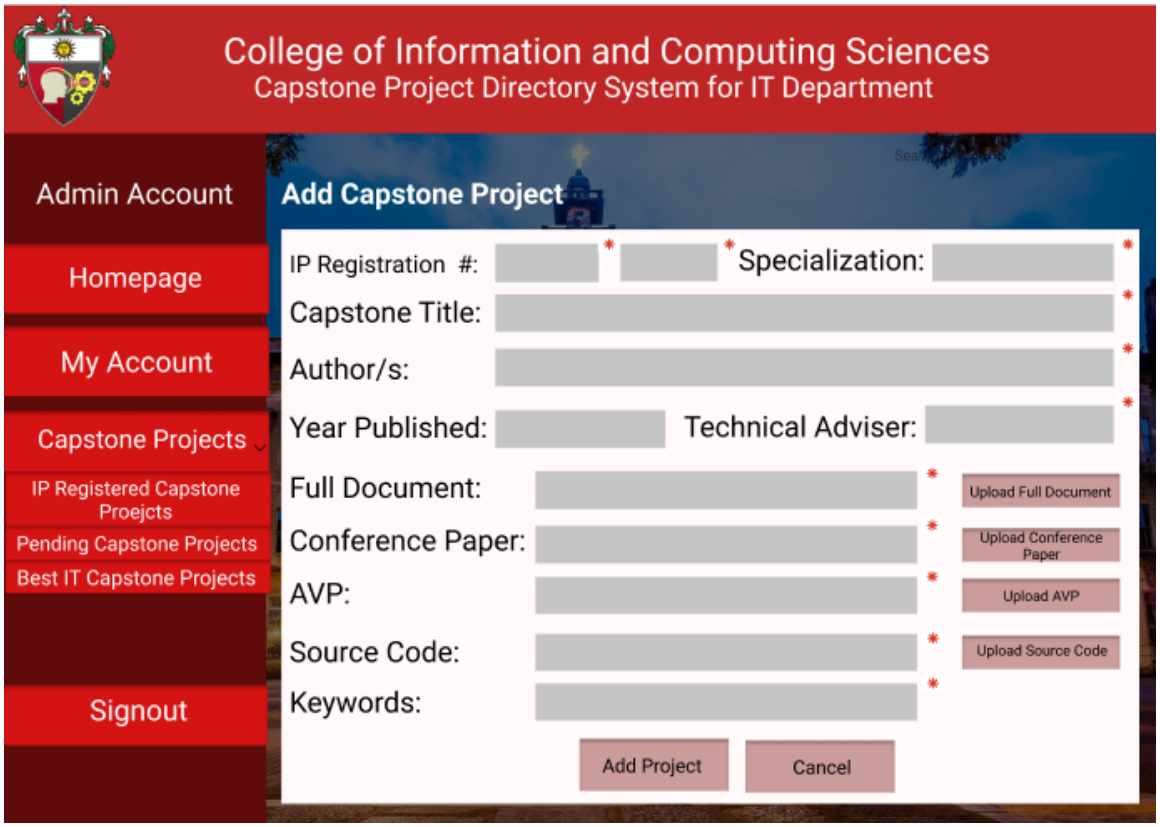


*Figure 3. 16: Add Capstone Project Page (Administrator Side)*

This page will appear when the administrator wants to add a past capstone project. He will need to input and upload all the required information in order for it to be added to the list.

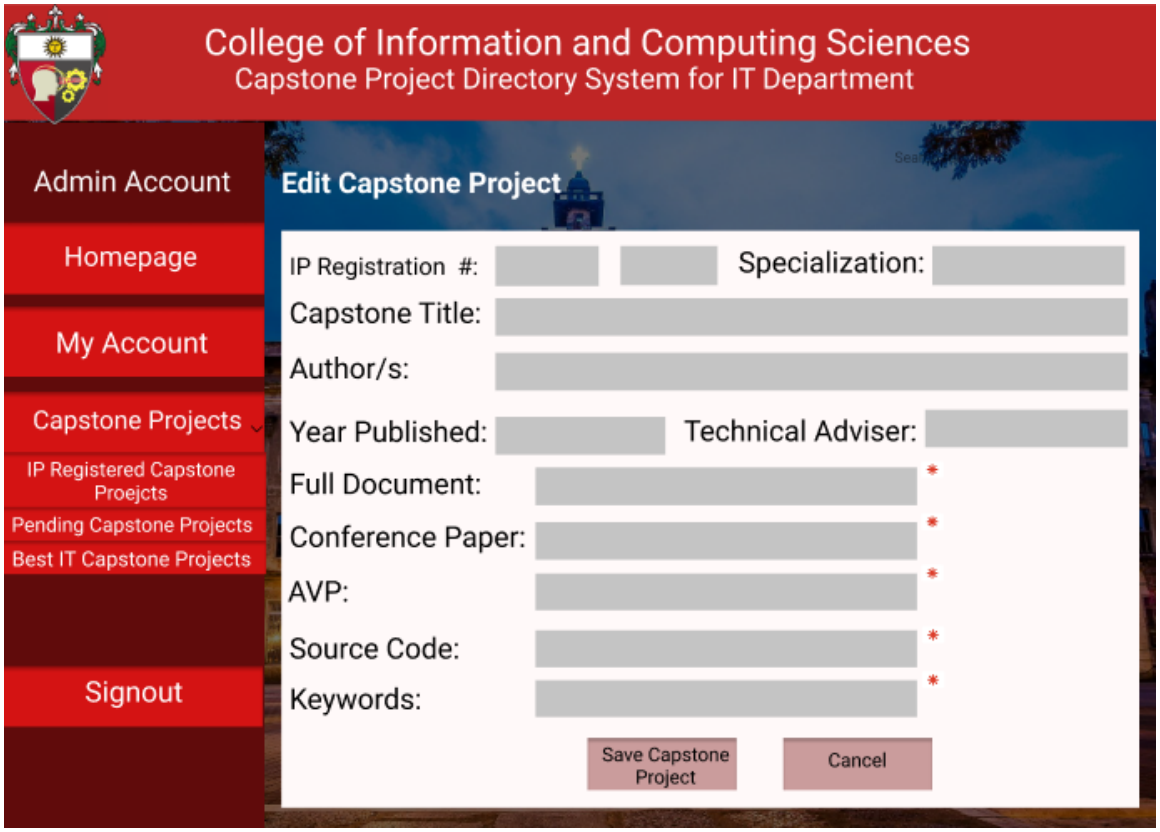


*Figure 3. 17: Edit Capstone Project (Administrator Side)*

This page is shown when the administrator clicks the edit capstone project button. The administrator will be allowed to edit the title, author, year published, technical adviser, and specialization. The IP registration and the final file requirements will not be editable and will be disabled on the edit page.

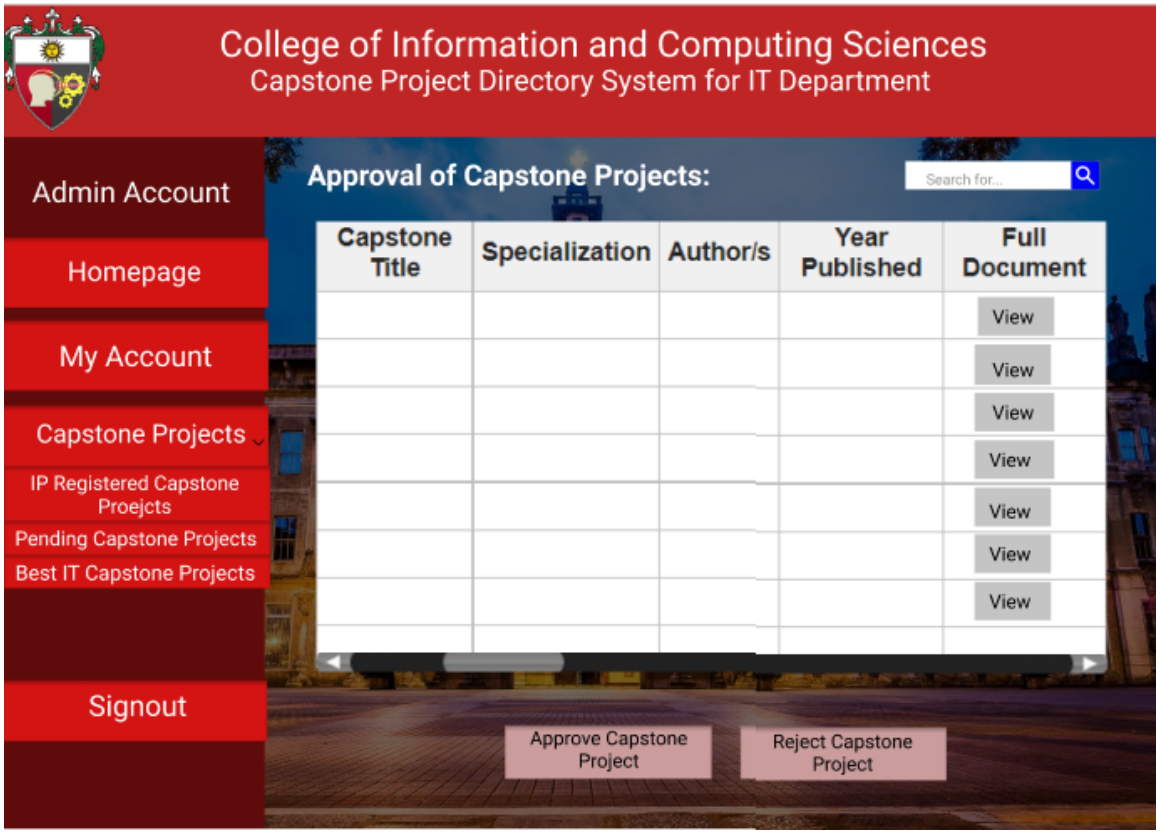


*Figure 3. 18: Pending Capstone Projects (Administrator Side)*

This page is shown when the administrator clicks on the Pending Capstone Projects tab. The administrator will have the list of the projects submitted, and he will be able to view all the submitted requirements. If the administrator approves a project, it will be transferred to the list of IP registered capstone projects, and an IP registration number will be automatically assigned to the project.

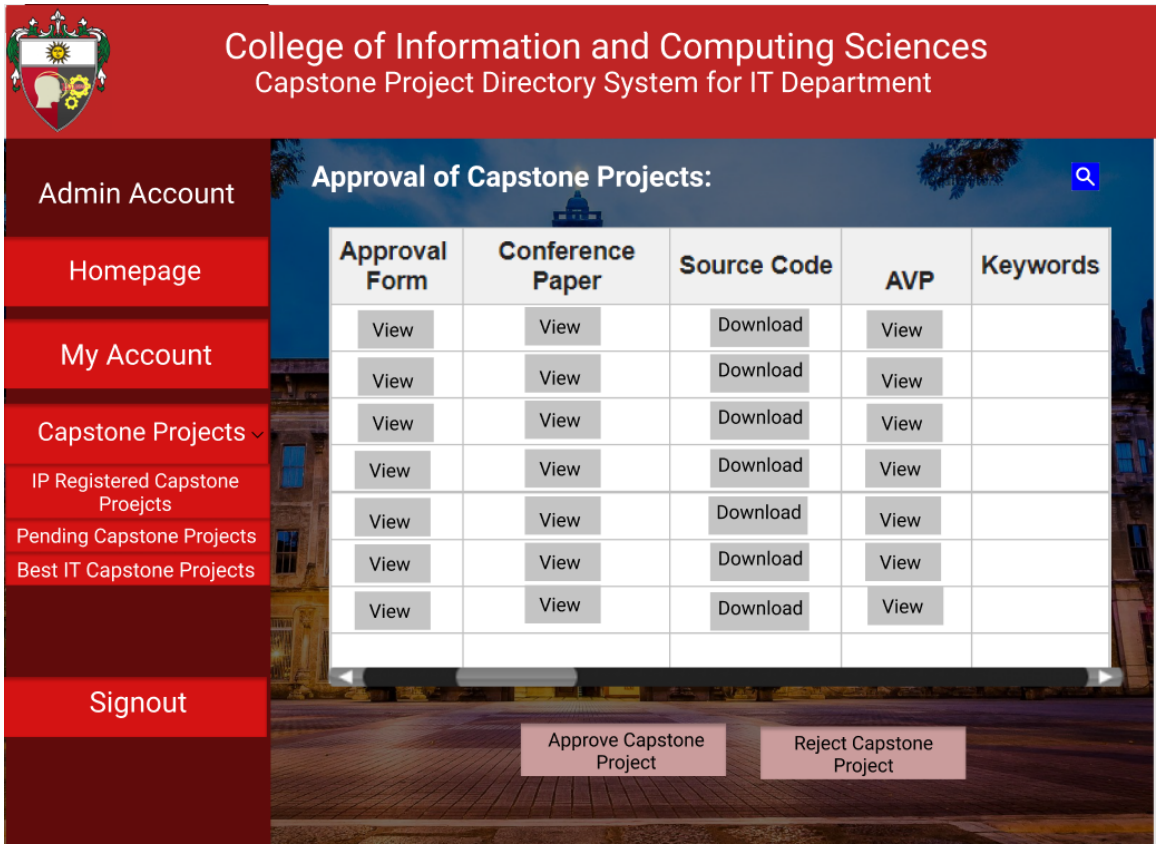


*Figure 3.19: Pending Capstone Projects cont. (Administrator Side)*

This page is shown when the administrator clicks on the Pending Capstone Projects tab. The administrator will have the list of the projects submitted, and he will be able to view all the submitted requirements. If the administrator approves a project, it will be transferred to the list of IP registered capstone projects, and an IP registration number will be automatically assigned to the project.

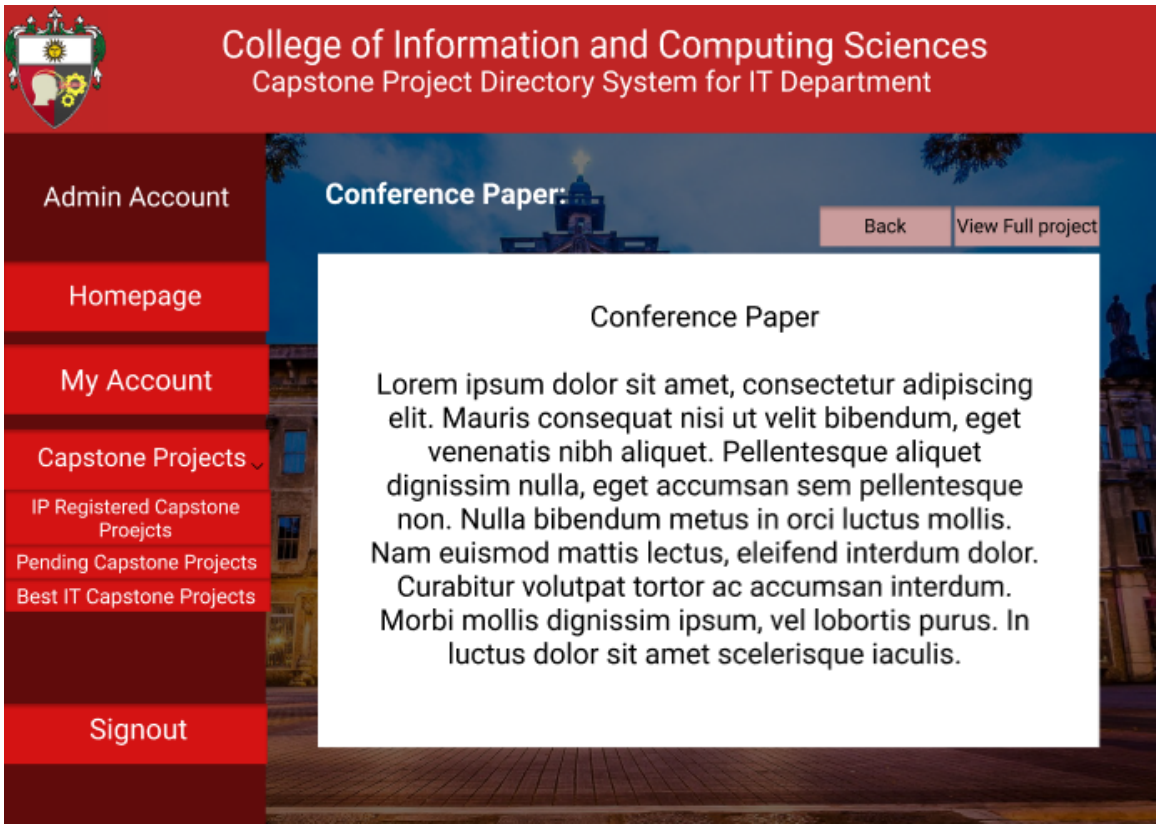


*Figure 3.20: View conference paper page (Administrator Side)*

This page is shown when the administrator clicks on the view button in the conference paper category. This will show the conference paper that is submitted by the students.

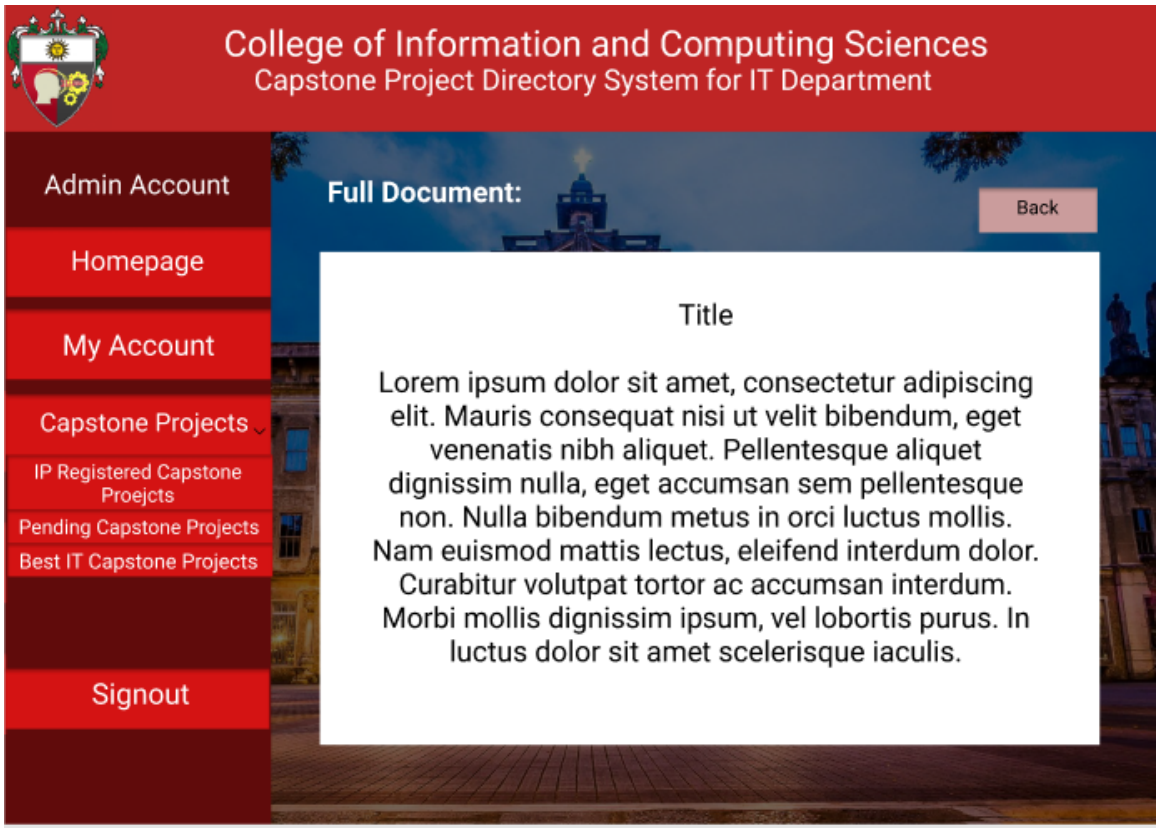


*Figure 3.21: View full document page (Administrator Side)*

This page is shown when the administrator clicks on the view button in the full document category. This will show the full document that is submitted by the students.

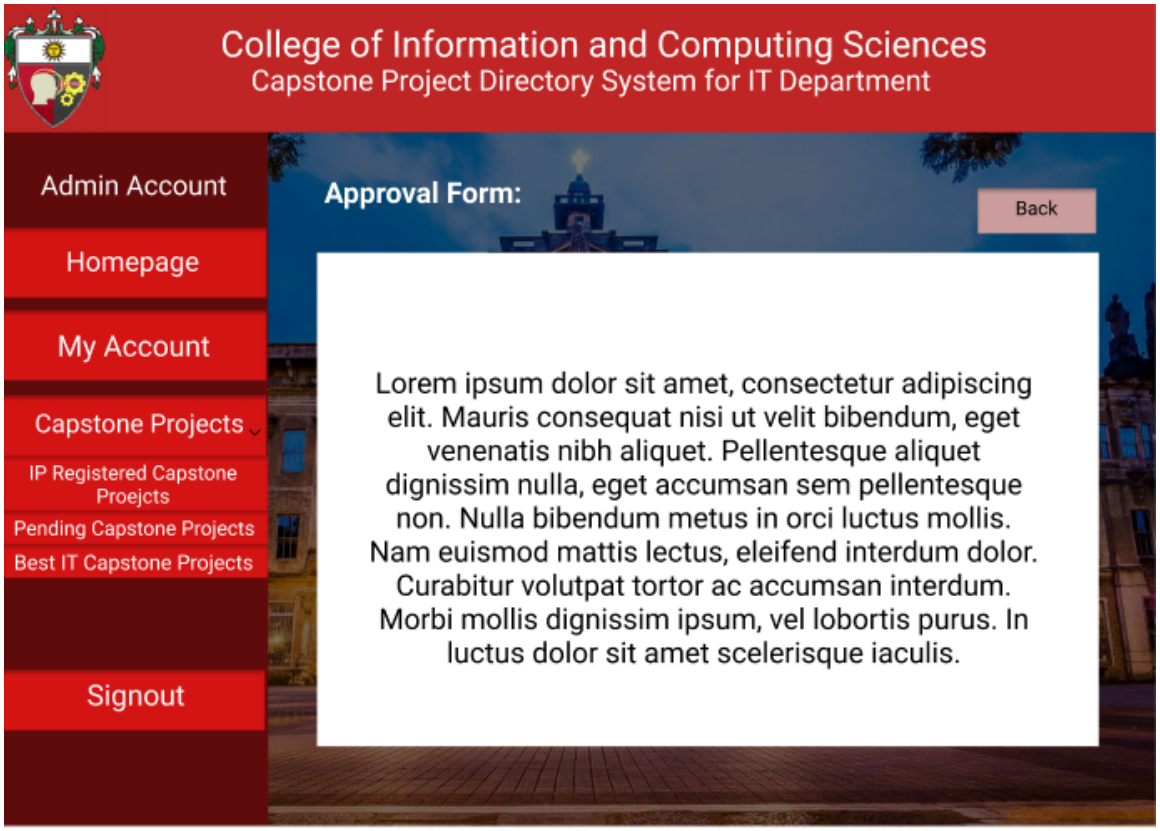


*Figure 3.22: View approval form page (Administrator Side)*

This page is shown when the administrator clicks on the view button in the approval form category. This will show the approval form that is submitted by the students.

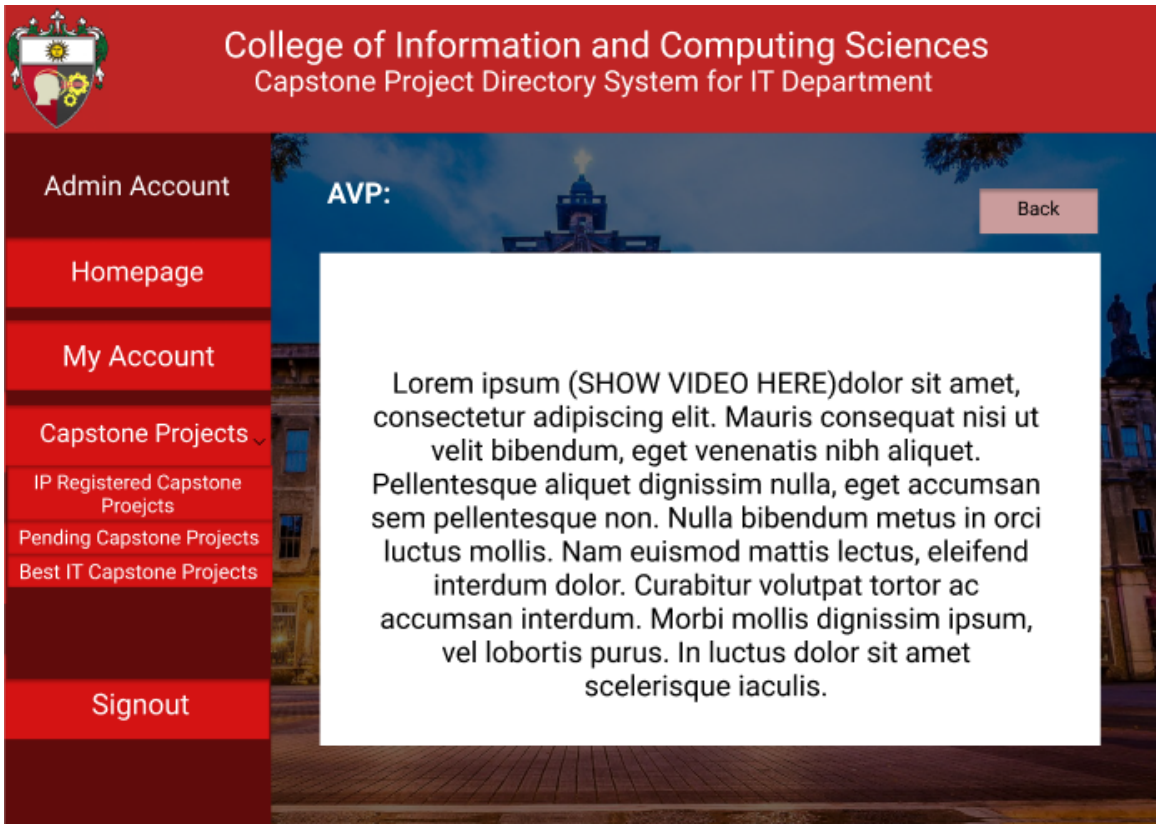


*Figure 3.24: View AVP Page (Administrator Side)*

This page is shown when the administrator clicks on the view button in the AVP category. This will show the AVP that is submitted by the students.

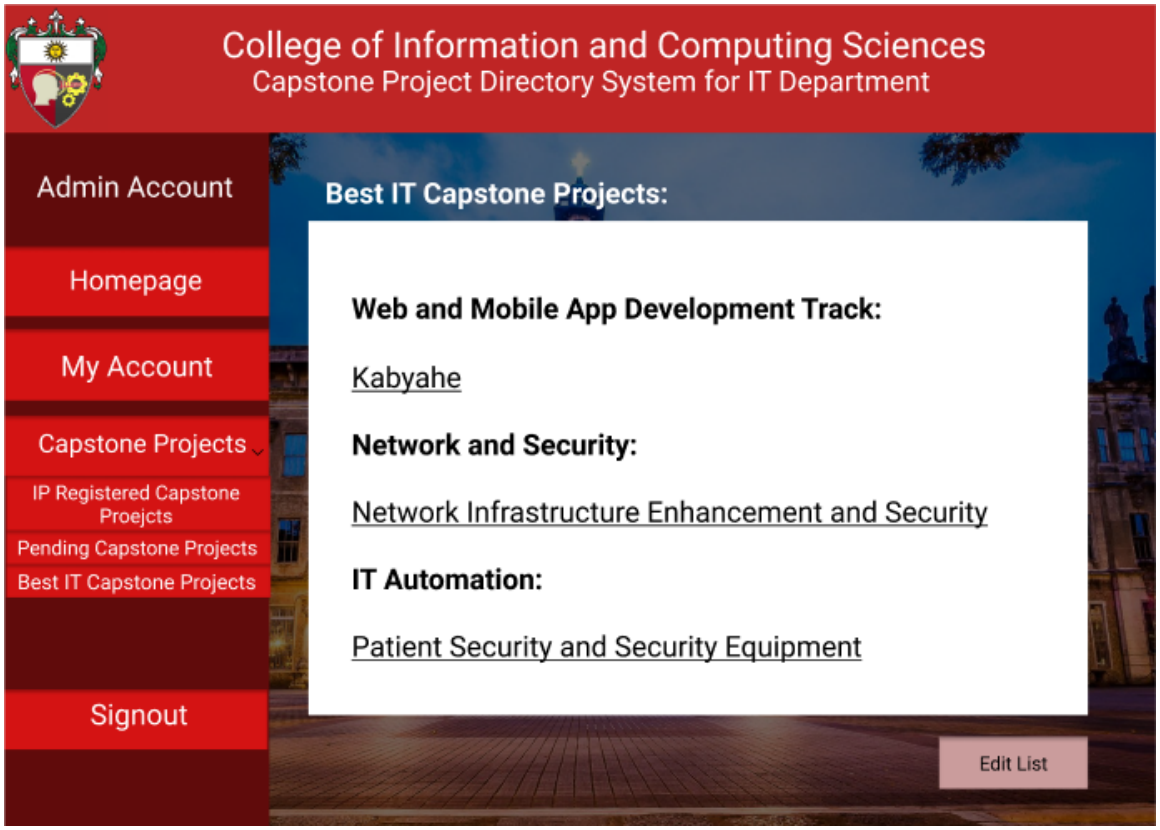


*Figure 3.25: Best IT Capstone Projects Page (Administrator Side)*

This page shows the list of best capstone projects. The administrator will be able to edit the list by clicking on the button in the bottom right corner of the page.

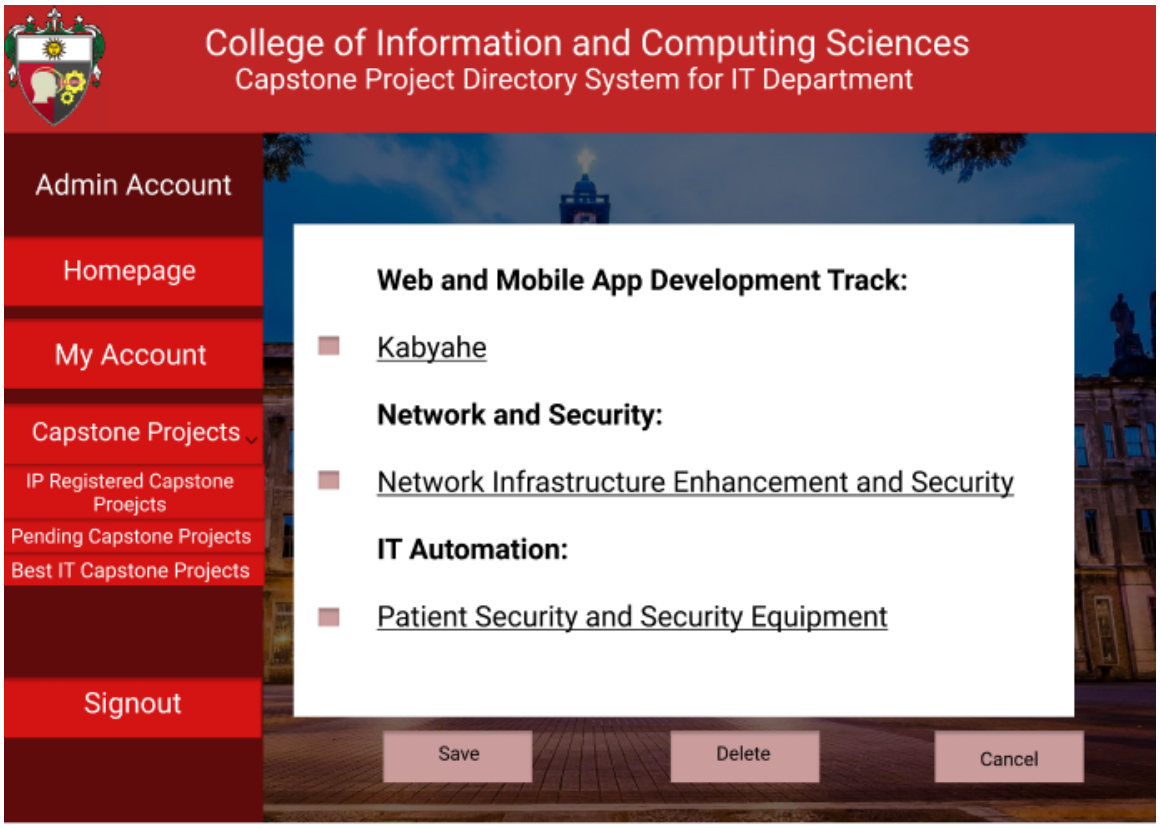


*Figure 3.26: Edit Best Capstone Projects (Administrator Side)*

This page shows when the edit list button in the best IT capstone projects page is clicked. This will allow the administrator to click on a capstone project and remove it from the list.

**Faculty Side**

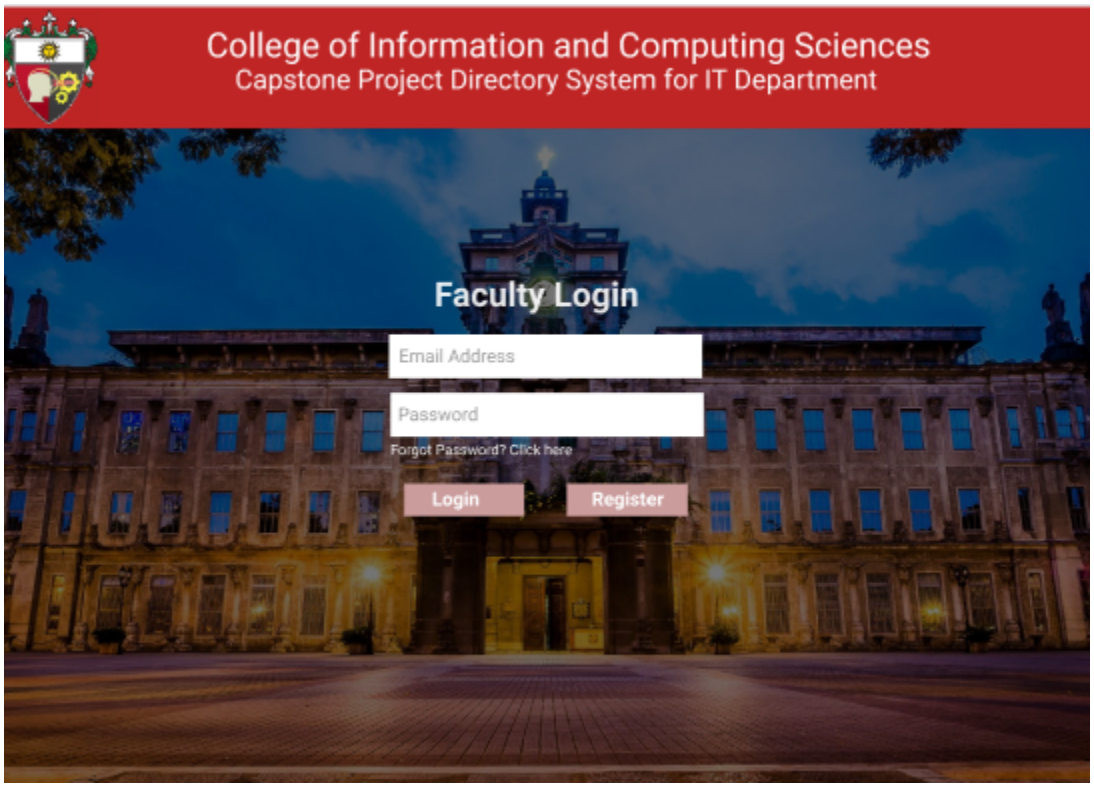


*Figure 3.27: Login Page (Faculty Side)*

This is the page that will first show up after loading the website. The system will require the faculty to input their email address and password. In case the faculty forgets their password, they may retrieve their account by clicking the forgot password link.

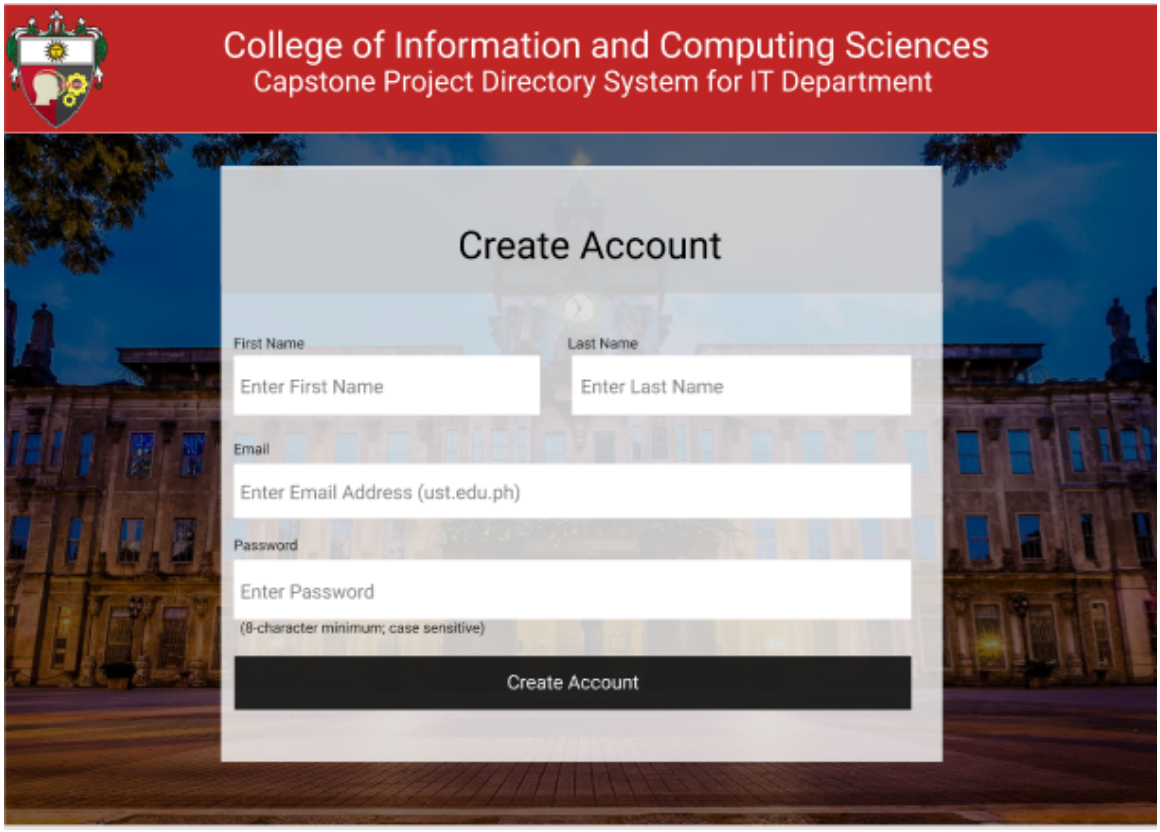


*Figure 3. 28: Register Page (Faculty Side)*

If the faculty clicks the register button, they will be redirected to the Create Account page. The faculty will enter their full name, their school email, and their password to create their own account.

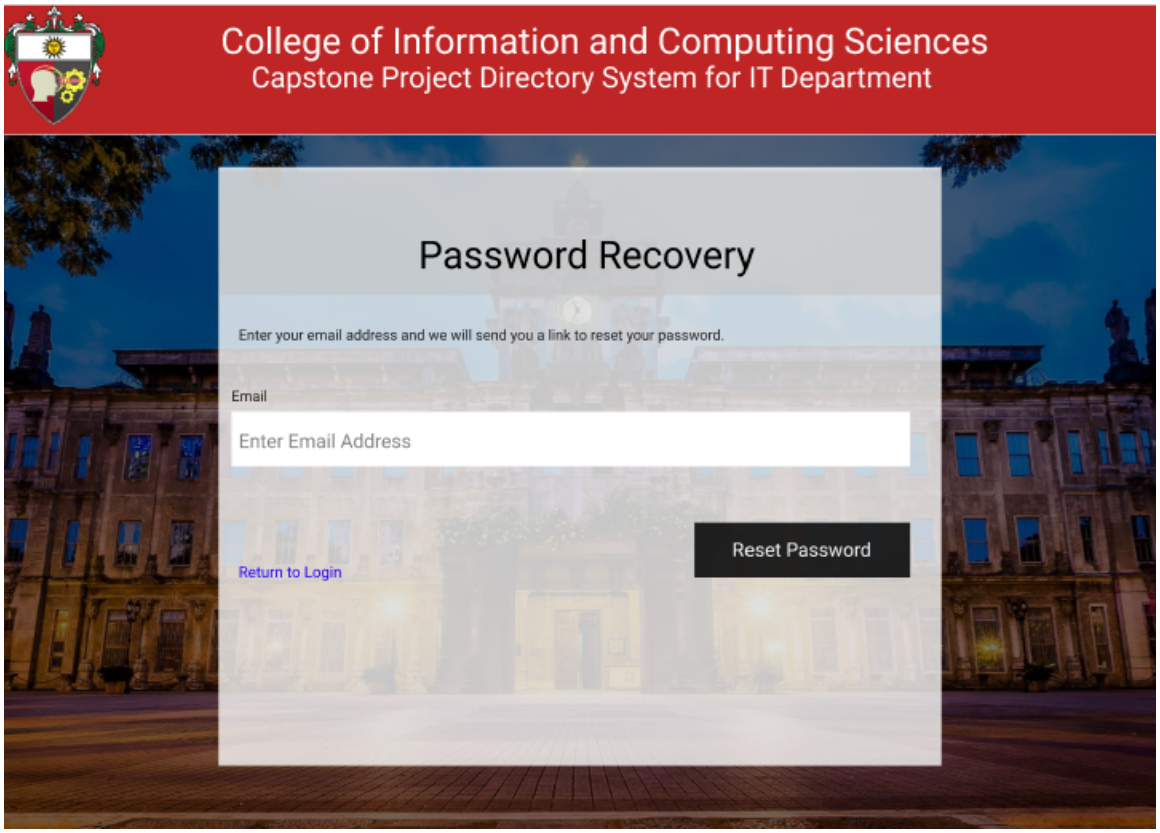


*Figure 3.29: Forgot Password Page (Faculty Side)*

If the faculty forgot their password and clicked the forgot password link at the login page, they will be asked to enter their email. Afterward, a link will be sent to their email where they can opt to reset their password.

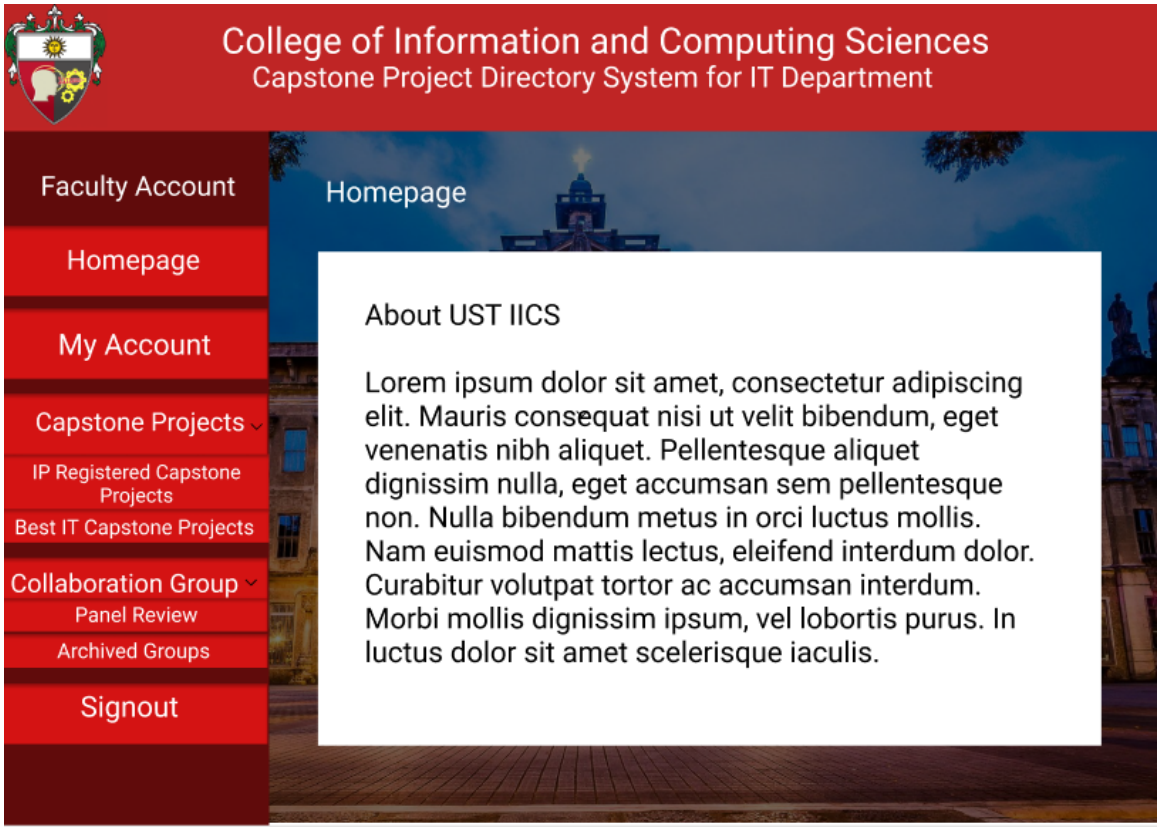


*Figure 3.30: Homepage (Faculty Side)*

The Homepage shows information about UST CICS and the IT Department.

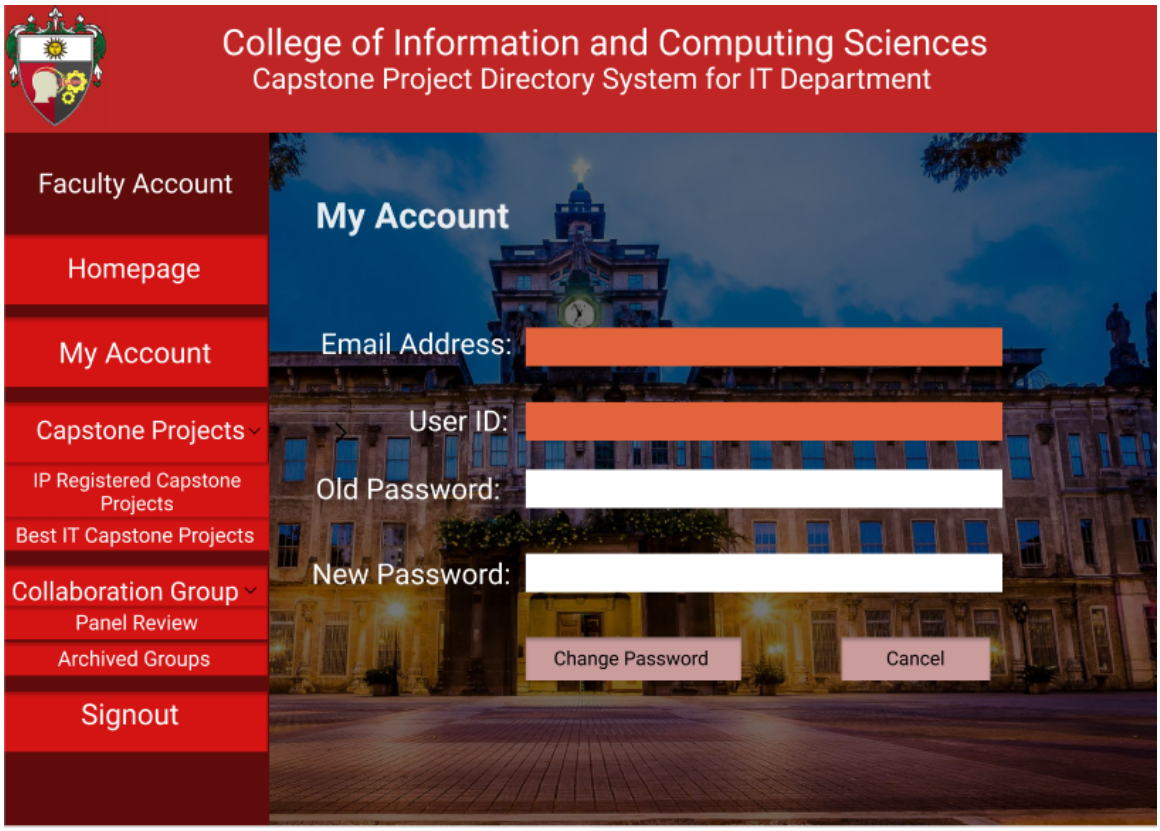


*Figure 3.31: My Account Page (Faculty Side)*

The My Account Page will let the faculty view his email address and user ID. Also, the change password function will be located on this page.

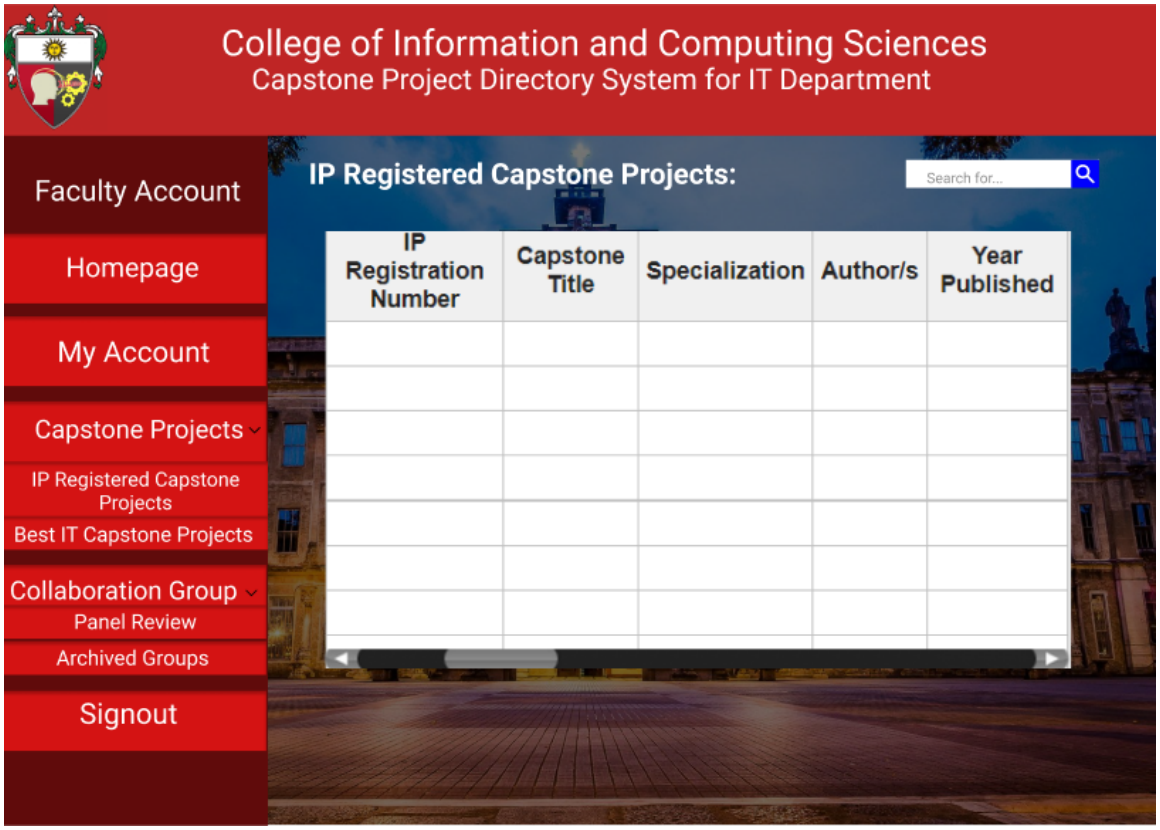


*Figure 3.32: IP Registered Capstone Projects (Faculty Side)*

This page allows the faculty member to view the IP Registered Capstone Projects. Also, they may be able to view the submitted requirements by the students by clicking on the view button depending on what the faculty member wants to view.

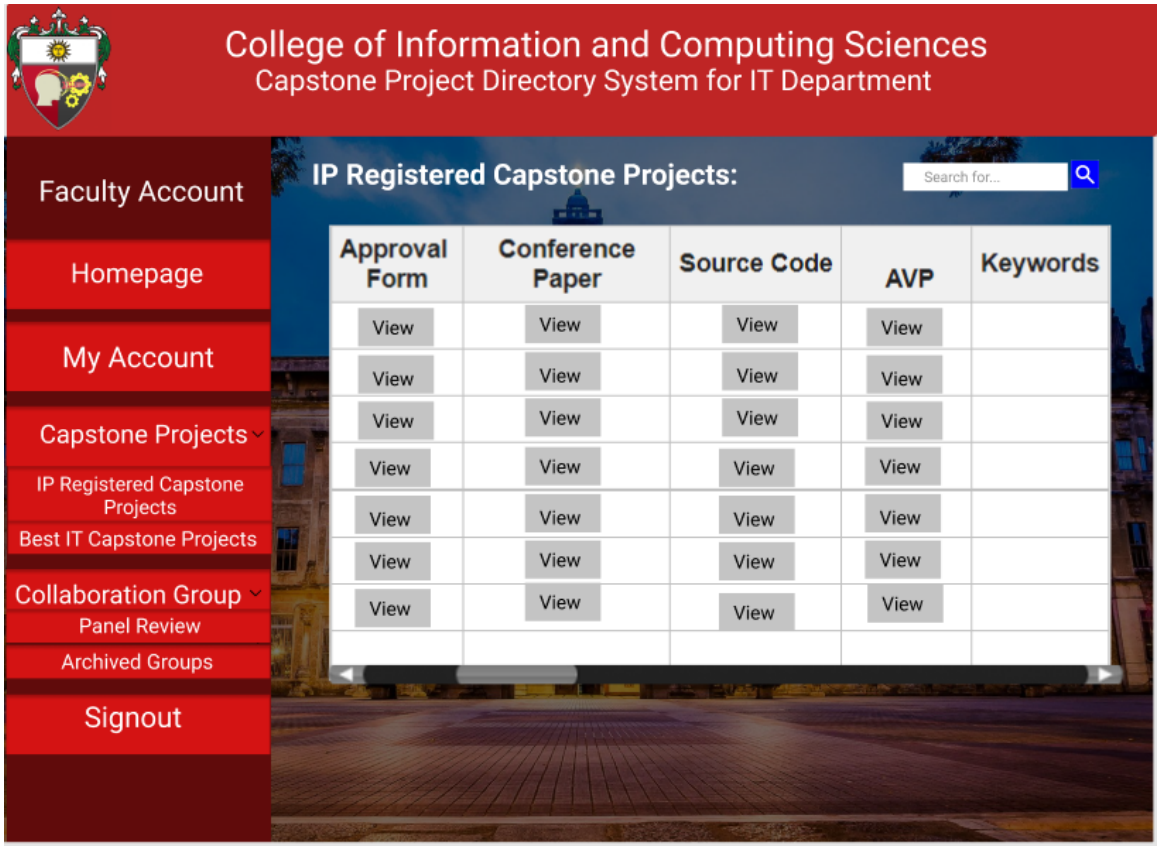


*Figure 3.33: IP Registered Capstone Projects cont. (Faculty Side)*

This page allows the faculty member to view the IP Registered Capstone Projects. Also, they may be able to view the submitted requirements by the students by clicking on the view button depending on what the faculty member wants to view.

*Figure 3.34: View Conference Paper (Faculty Side)*

This page is shown when the faculty clicks on the view button in the conference paper category. This will show the conference paper that is submitted by the students.

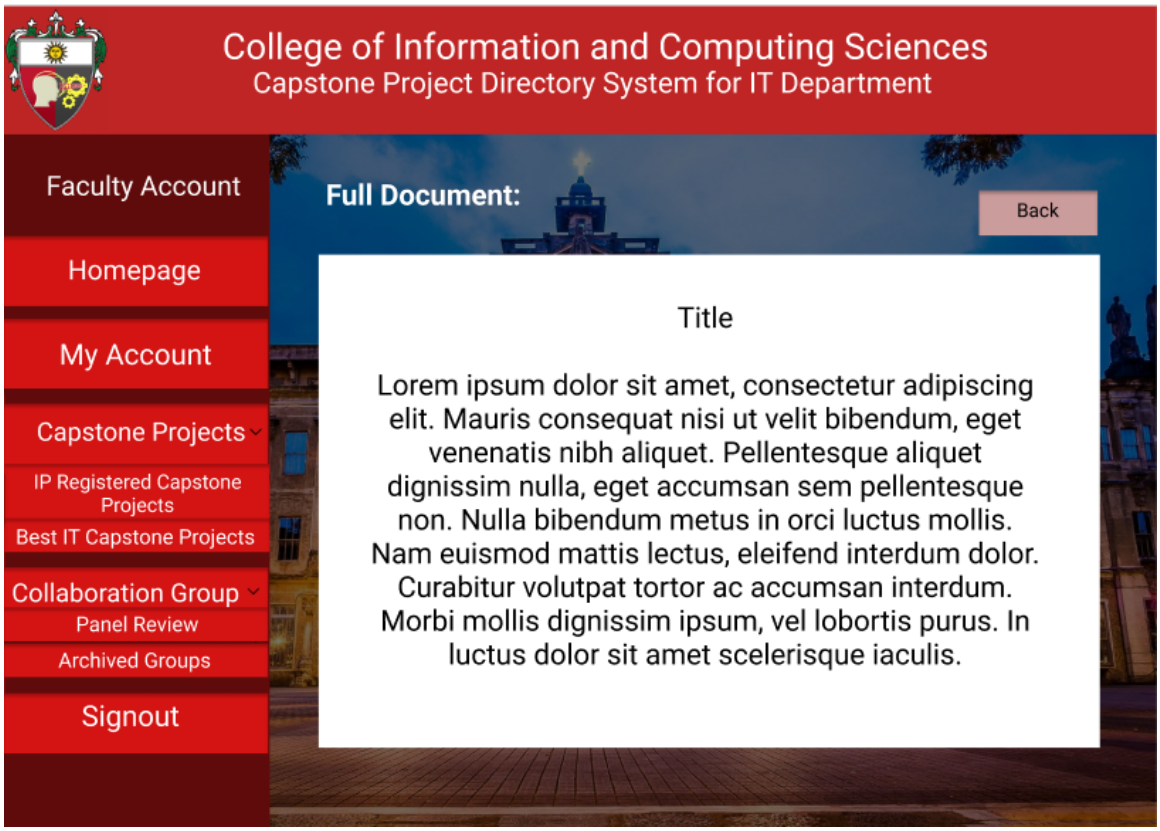


*Figure 3.35: View Full Document (Faculty Side)*

This page is shown when the faculty clicks on the view button in the full document category. This will show the full document that is submitted by the students.

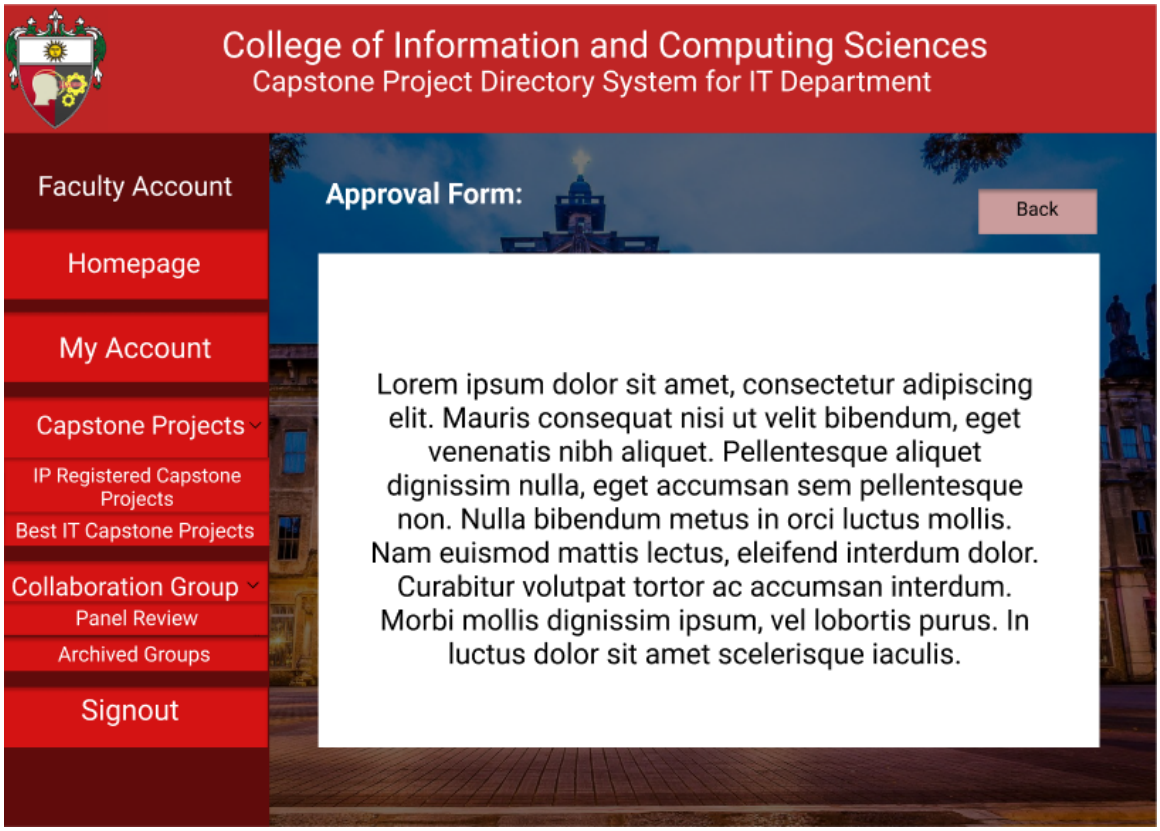


*Figure 3.36: View Approval Form (Faculty Side)*

This page is shown when the faculty clicks on the view button in the approval form category. This will show the approval form that is submitted by the students.

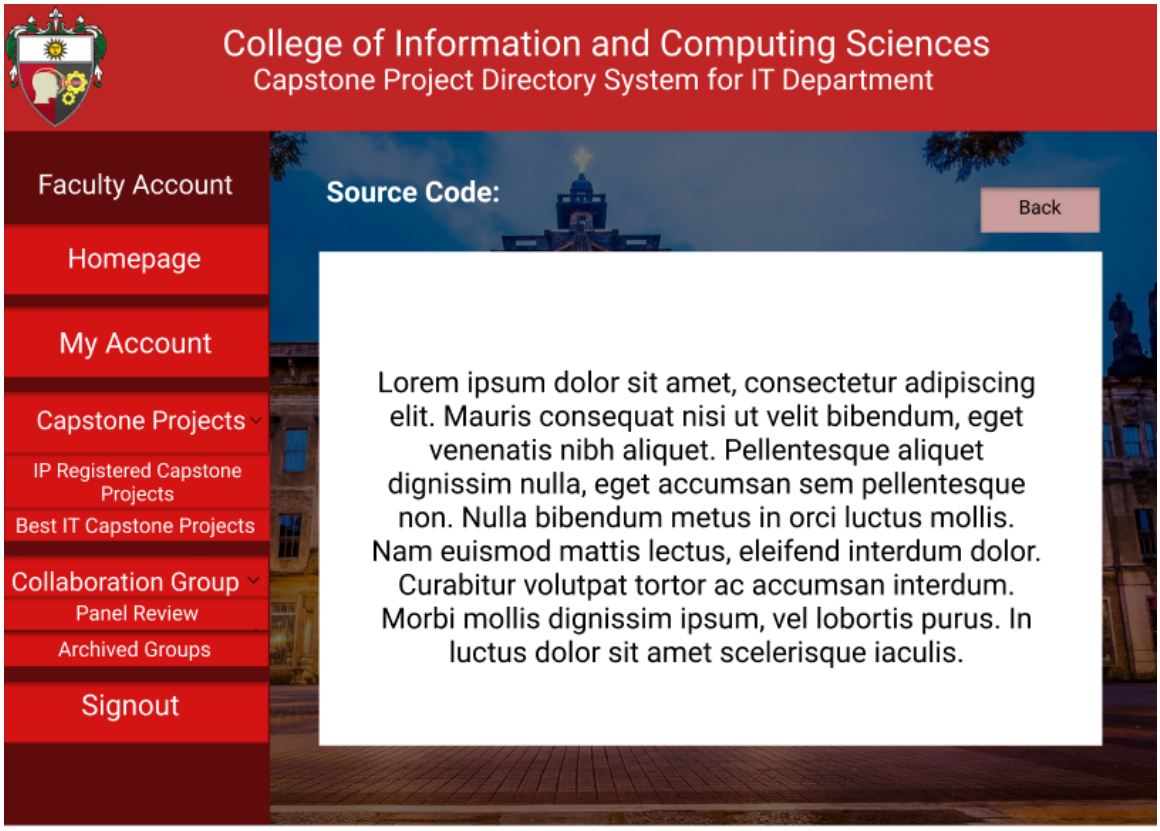


*Figure 3.37: View Source Code (Faculty Side)*

This page is shown when the faculty clicks on the view button in the source code category. This will show the source code that is submitted by the students.

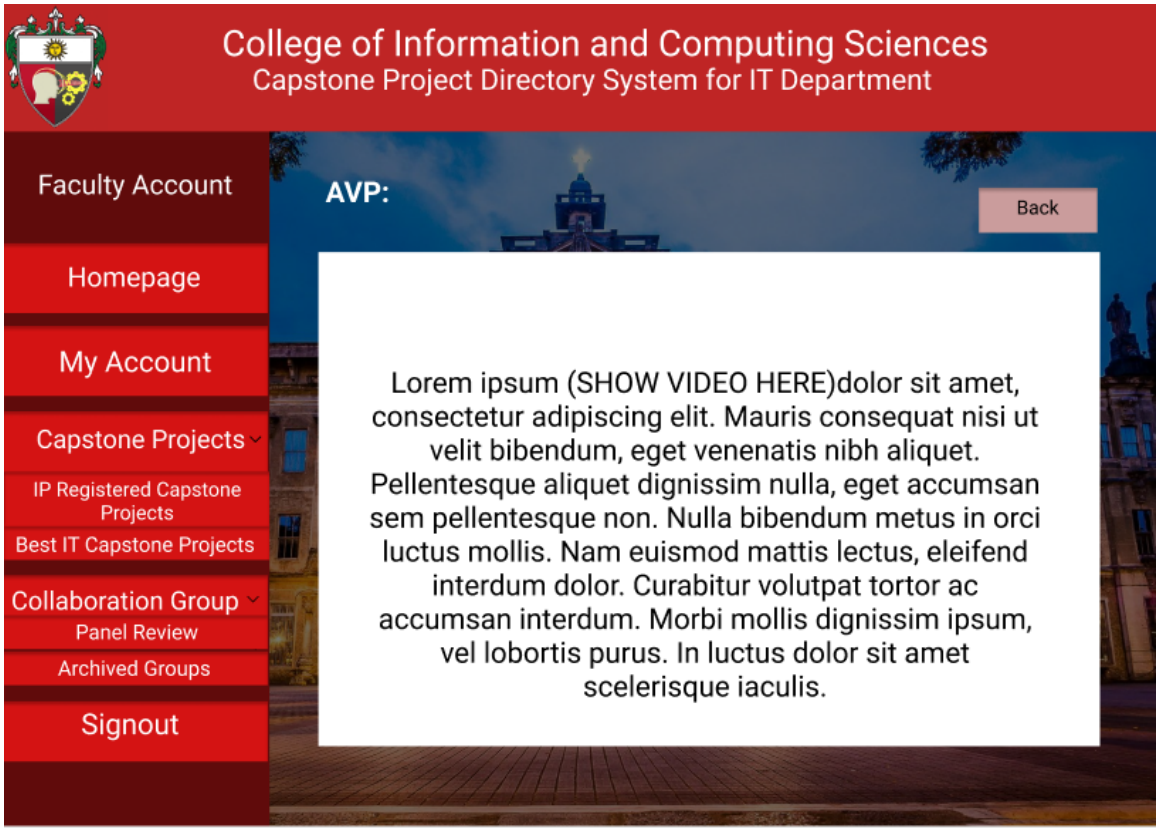


*Figure 3.38: View AVP (Faculty Side)*

This page is shown when the faculty clicks on the view button in the AVP category. This will show the AVP that is submitted by the students.

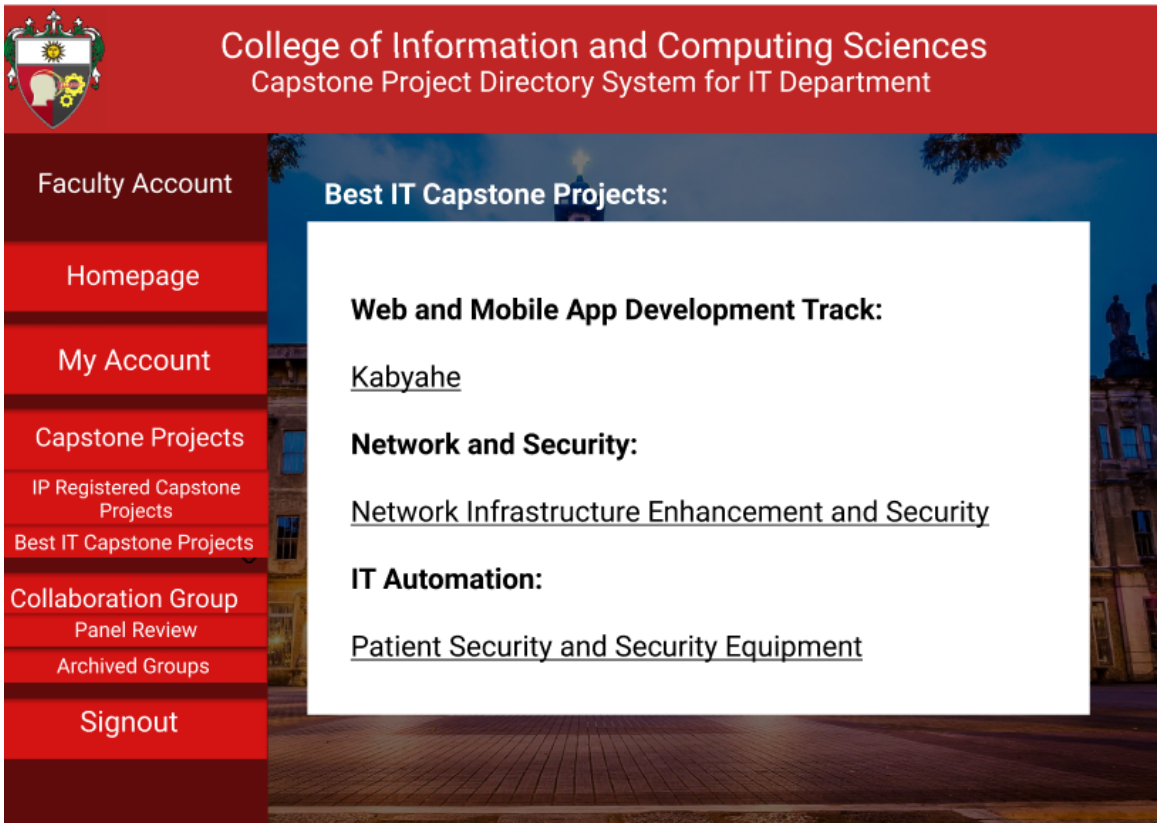


*Figure 3.39: Best IT Capstone Projects (Faculty Side)*

This page shows the list of best capstone projects. When the faculty clicks on the project, the conference paper of the project will be displayed.

*Figure 3.40: Collaboration Group (Faculty Side)*

This page will be shown when the faculty member clicks on a project in the list of best capstone projects.

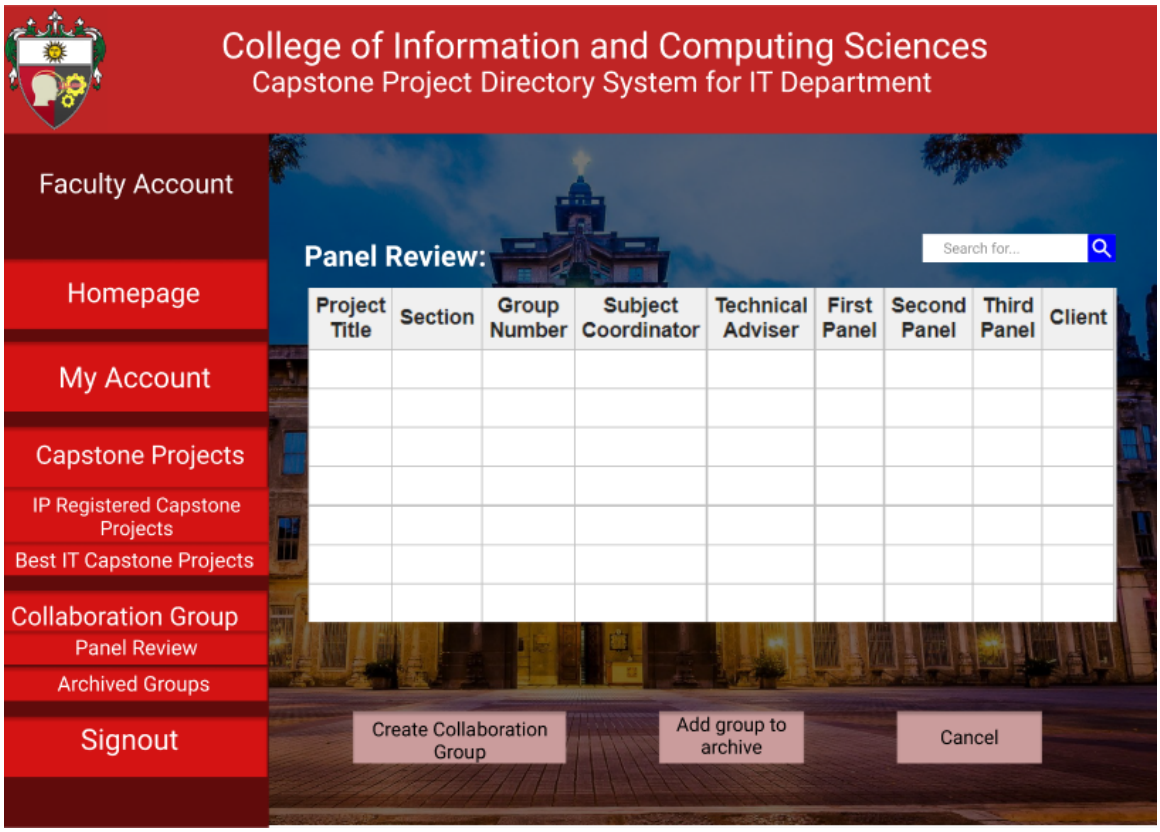


*Figure 3.41: Panel review page (Faculty Side)*

This page is shown when the faculty member clicks on the panel review page. This will allow the faculty member to create a group, delete a group, or delete all groups. The table will be shown with the list of groups in which the faculty member will join if they are a subject coordinator, technical adviser, or panel of the group.

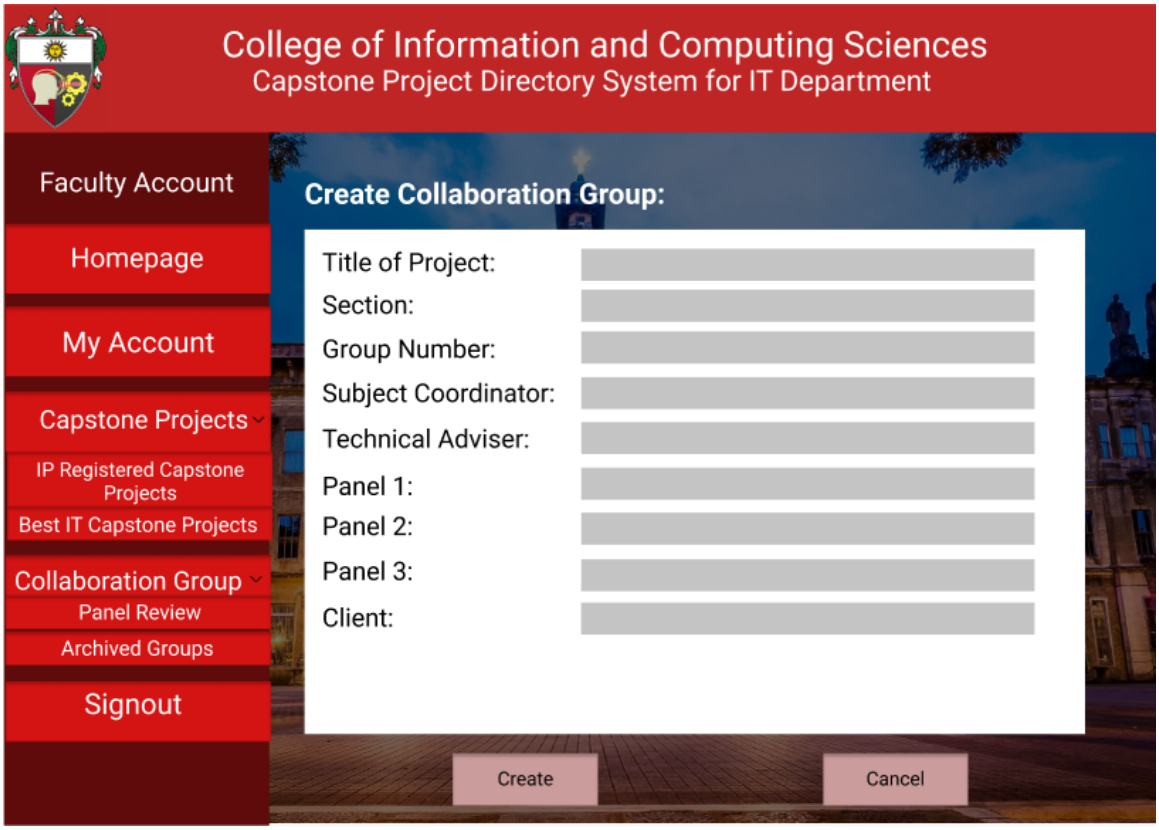


*Figure 3.42: Create collaboration group (Faculty Side)*

This page will be shown when a faculty clicks on the create collaboration group button. The faculty member will be required to input the title of the project, the section of the group, the group number, subject coordinator, technical adviser, panel 1, panel 2, panel 3, and the client.

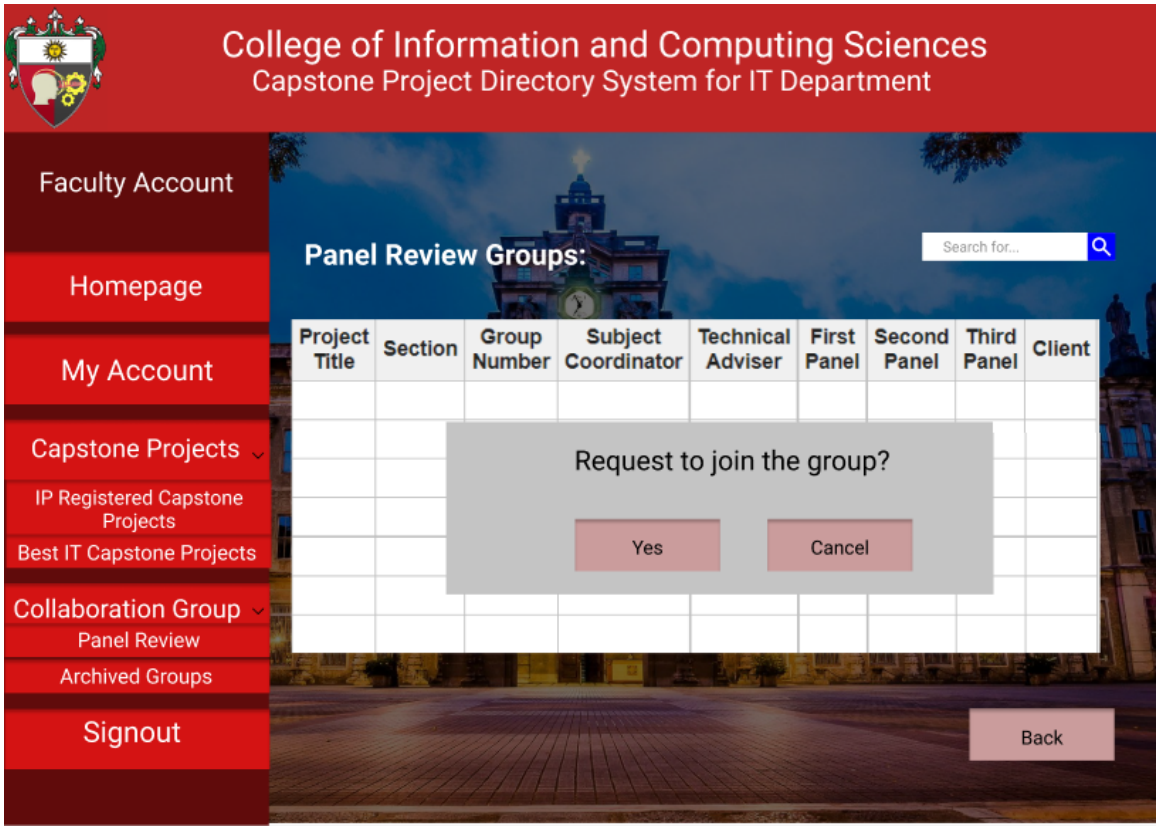


*Figure 3.43: Request to join group (Faculty Side)*

This page will be shown when a faculty member wants to join a group. When a faculty member sees their name that they are a subject coordinator, technical adviser or a panel of a group, the faculty member will click on the project title and this question will appear. They will be accepted by the one who created the group and will see the details about the project and the link for panel review.

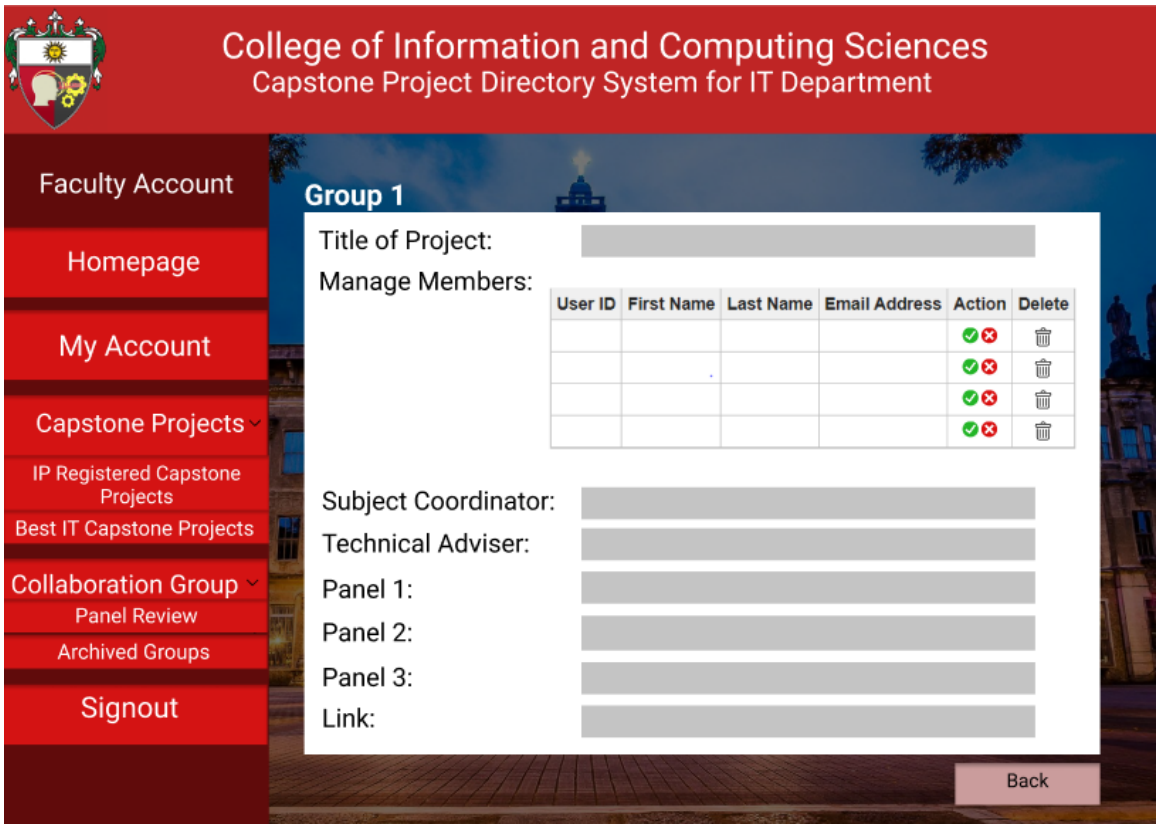


*Figure 3.44: Collaboration Group(Faculty Side)*

This page will be shown when the faculty member is the one who created the group or is accepted in a group. They will have the ability to manage the members inside the group and they will be able to see the link for panel review which is uploaded by the students.

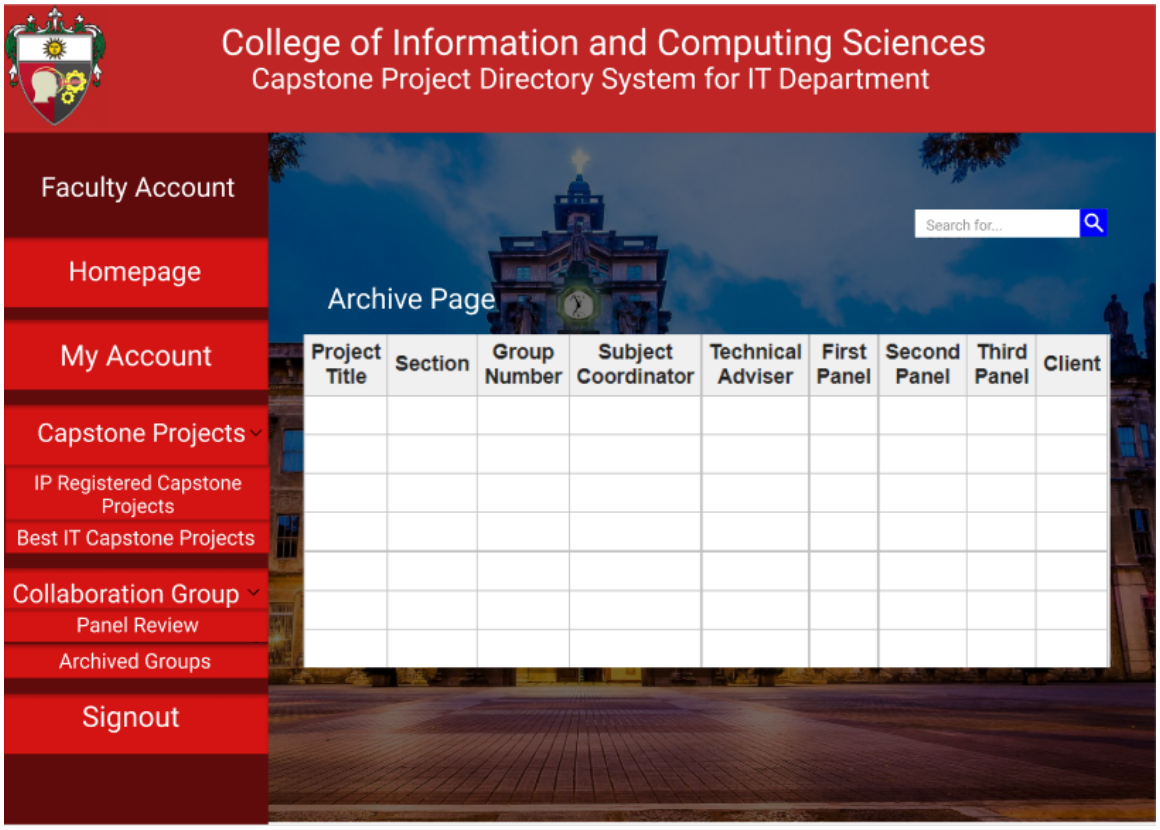


*Figure 3.45: Archive Page(Faculty Side)*

This page will be shown when the faculty member opens the archived groups. This is where the groups from previous batches are placed. This will prevent faculty from seeing groups in the past years.

**Student Side**

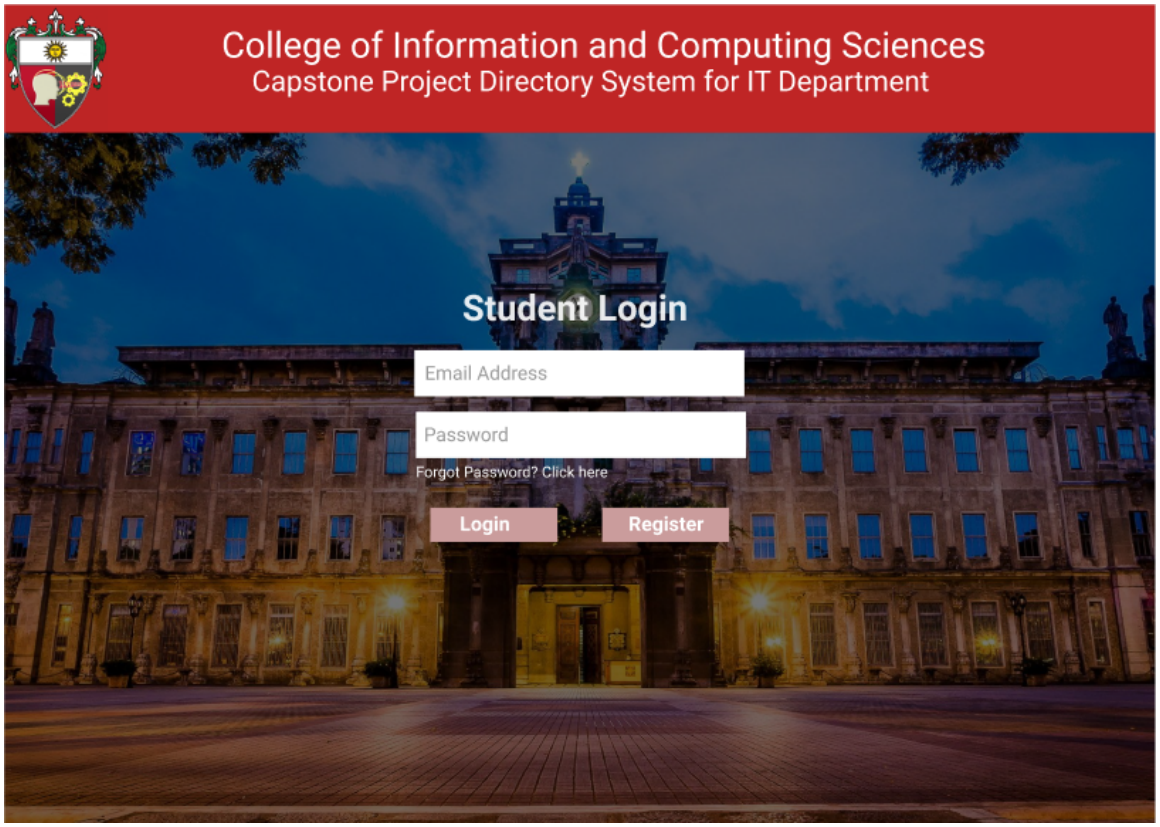


*Figure 3.46: Login (Student Side)*

This is the page that will first show up after loading the website. The system will require the user to input their email address and password. In case the user forgets their password, they may retrieve their account by clicking the forgot password link.

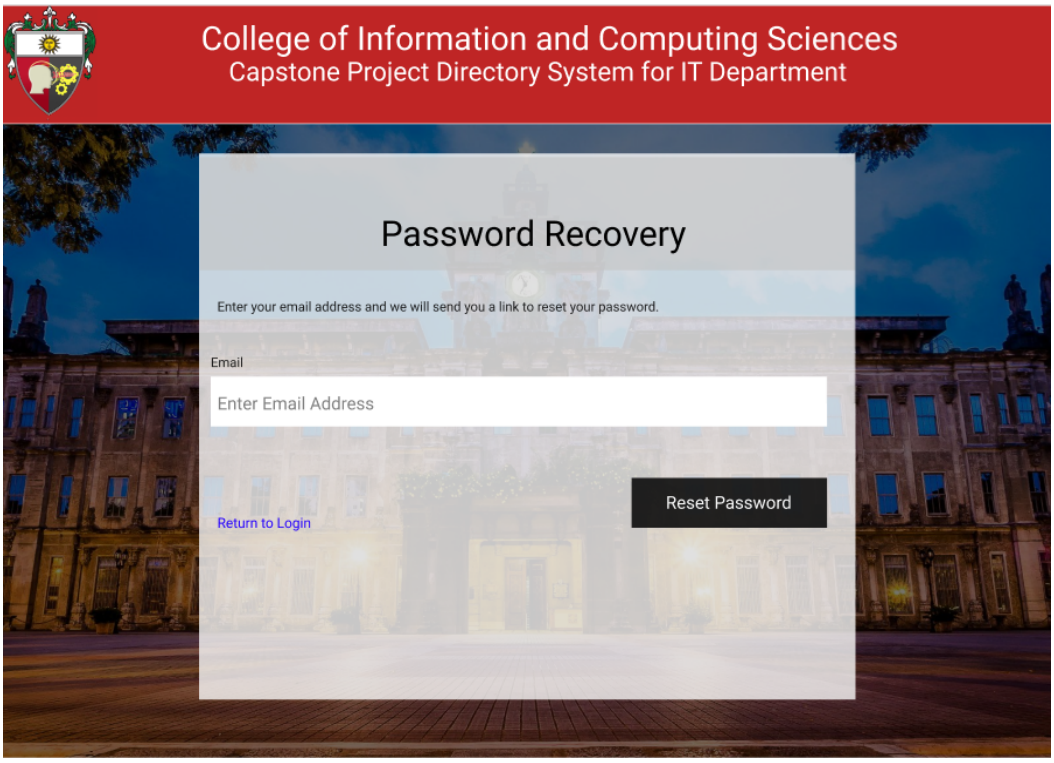


*Figure 3. 47: Forgot Password page (Student Side)*

If the student forgot their password and clicked the forgot password link on the login page, they will be asked to enter their email. Afterward, a link will be sent to their email where they can opt to reset their password.

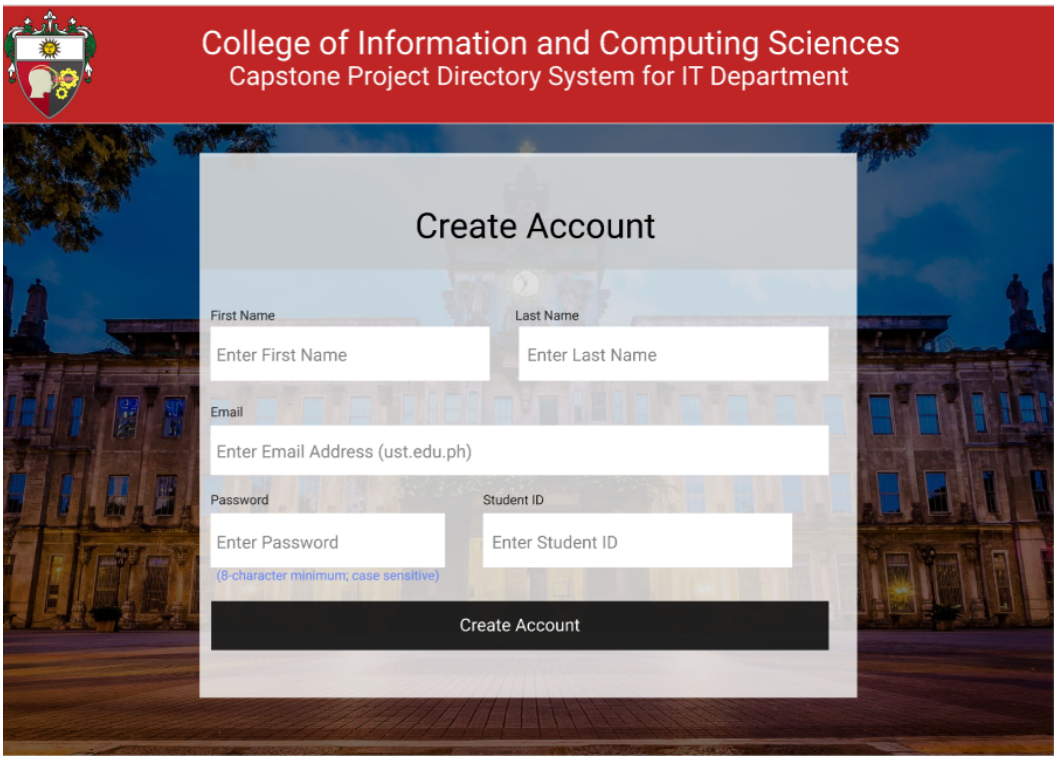


*Figure 3. 48: Register Page (Student Side)*

If the student clicks the register button, they will be redirected to the Create Account page. The student can enter their full name, their school email, and their password to create their own account.

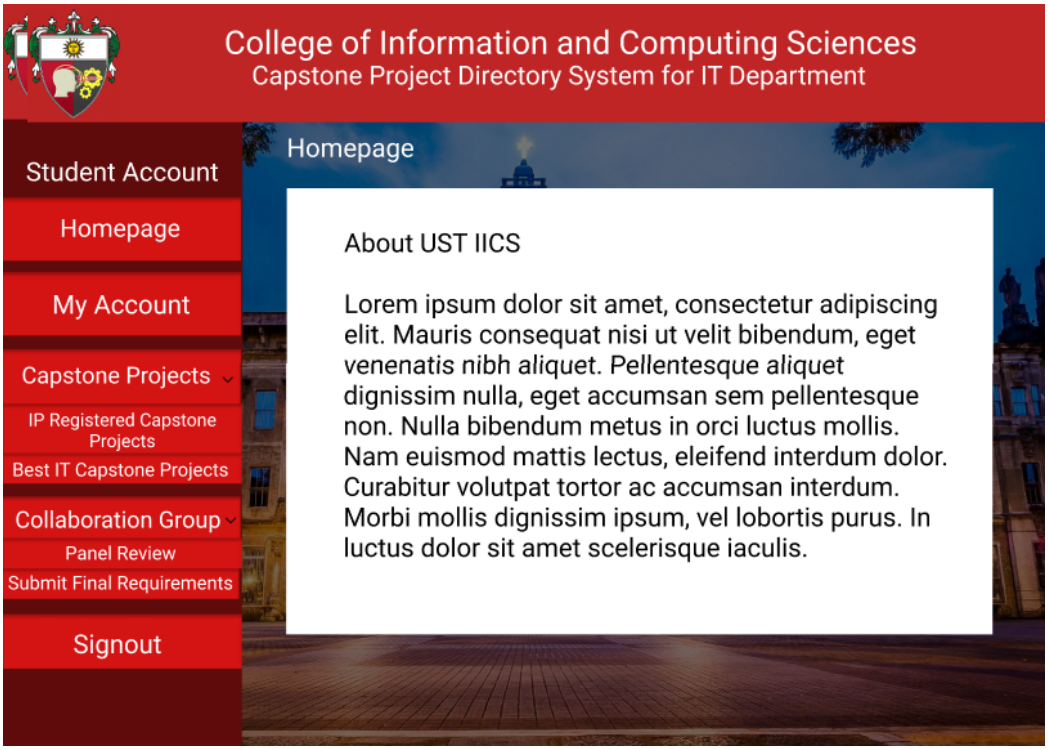


*Figure 3.49: Homepage (Student Side)*

The Homepage shows information about UST CICS and the IT Department.

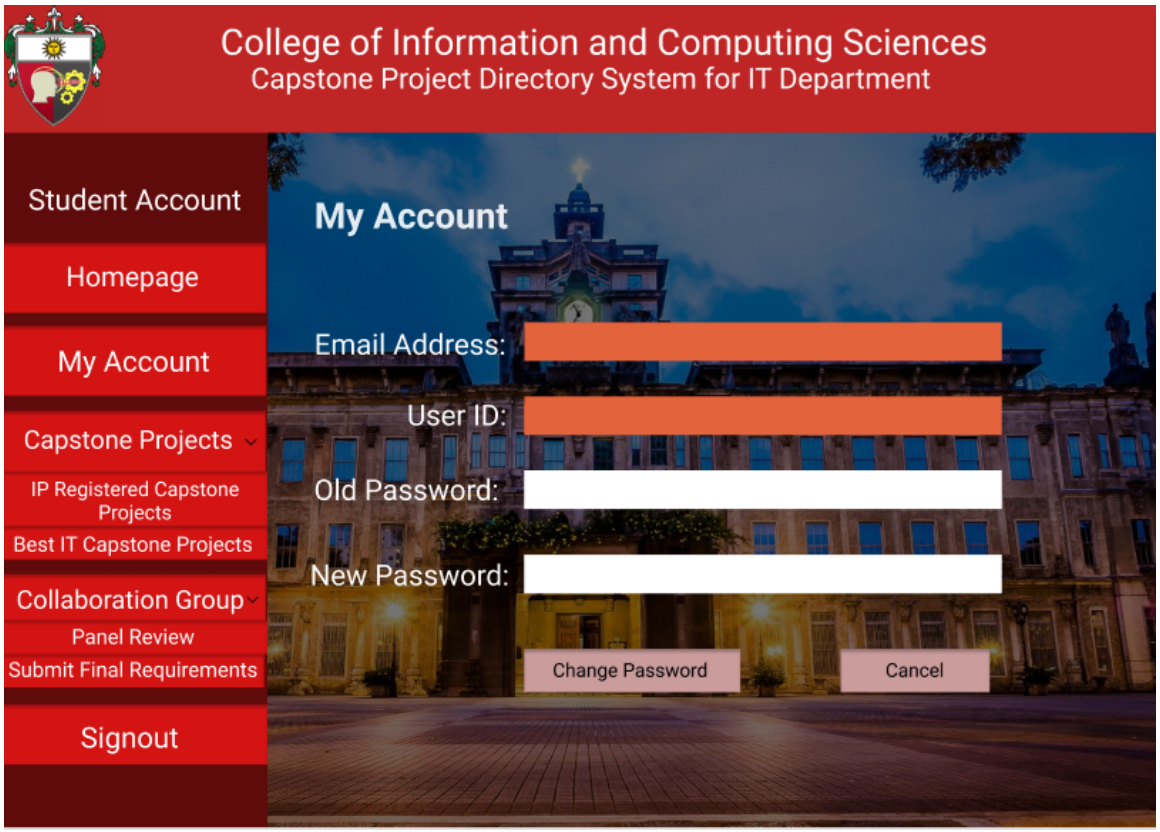


*Figure 3.50: Change Password (Student Side)*

My Account page allows the user to change their password by inputting their old password and their new desired password.

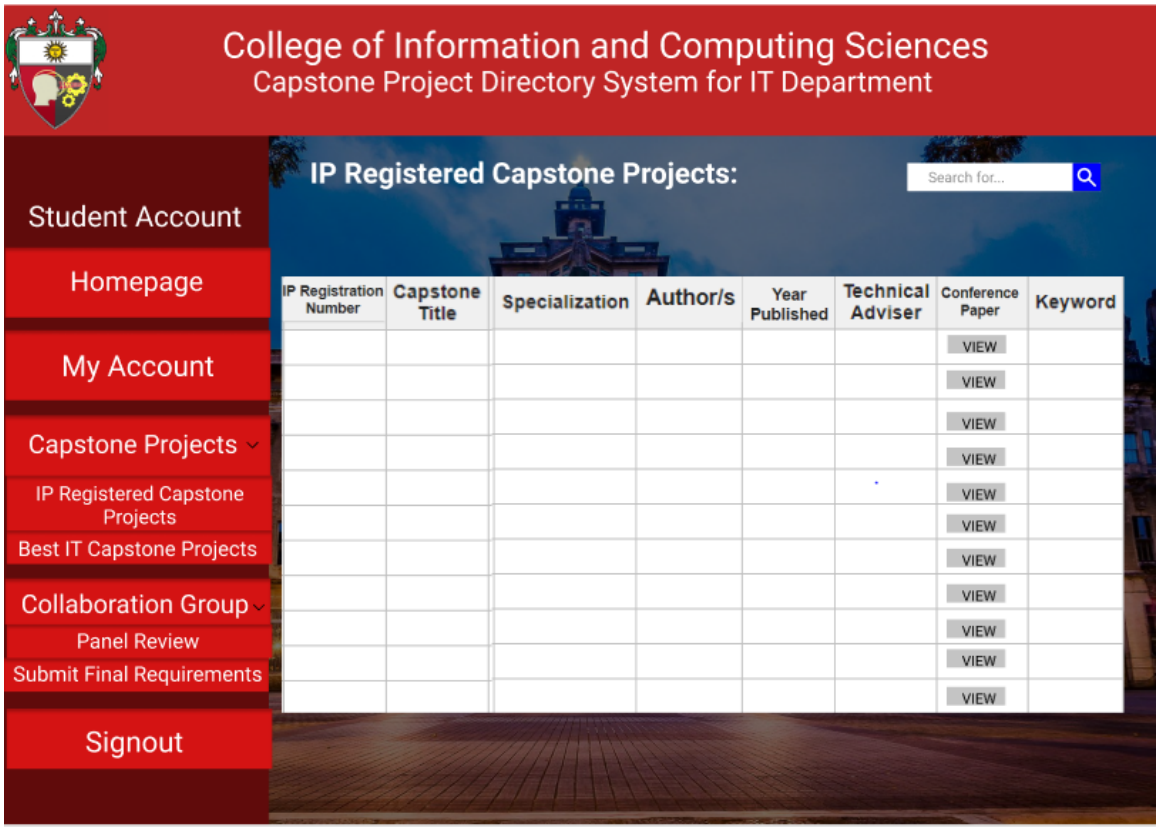


*Figure 3. 51: Capstone Projects (Student Side)*

This page allows the user to view the List of Capstone Projects. They may use keywords to search for specific capstone projects and may sort the projects by IP registry number, Title, Specialization, Year submitted, and name of Technical Adviser.

*Figure 3. 52: View Conference Paper (Student Side)*

This page is shown after clicking the view button in the list of capstone projects. This will show the Conference paper of the chosen project. This is to give the users a short overview of the project in order to ascertain the user's purpose.

*Figure 3.53: Best IT Capstone Projects (Student Side)*

This page shows the user the list of best IT Capstone projects. The user may click the particular project, and it will show the conference paper.

*Figure 3.54: View Conference Paper (Student Side)*

This page will appear after the student click the chosen best IT capstone project. The conference paper will be shown and give the users a short overview of the project in order to ascertain the user's purpose.

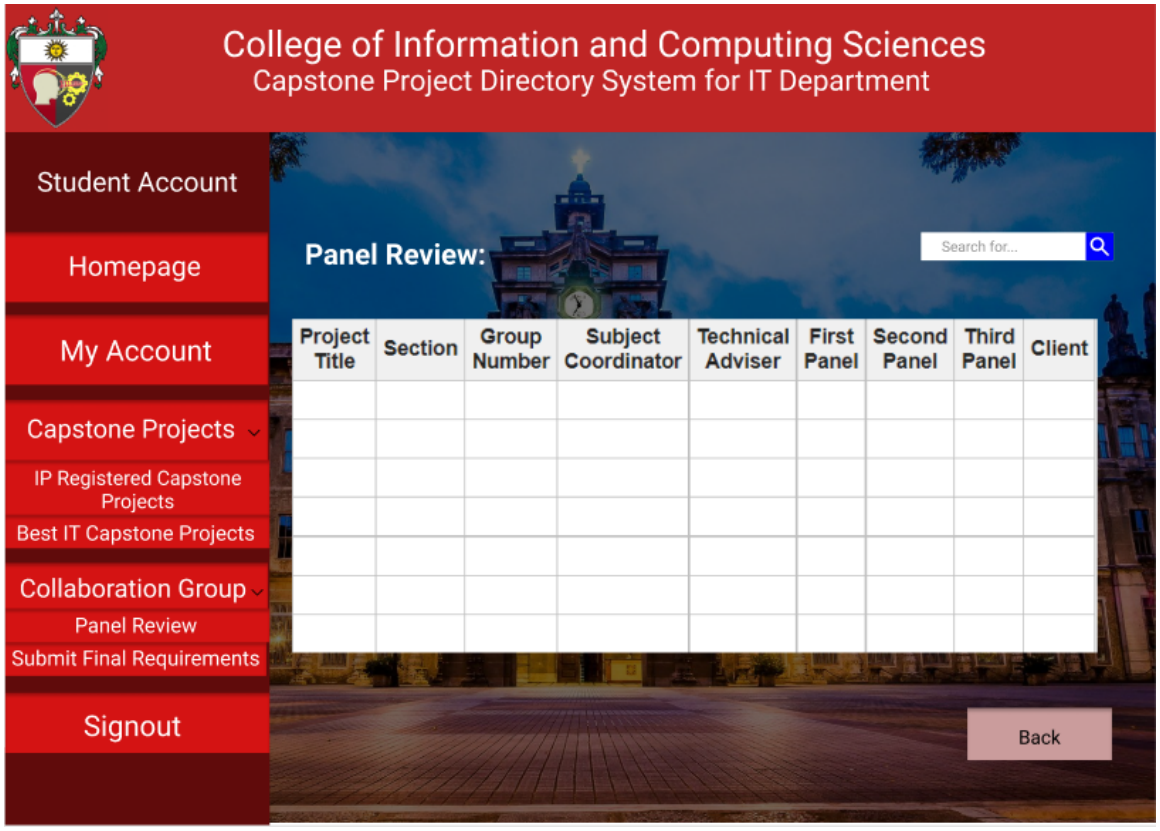


*Figure 3.55: Panel Review (Student Side)*

This page is shown when the student member clicks on the panel review page. When the student clicks the project title in the list, a pop-up box will appear asking them if they want to join the group. When the student clicks yes it will make a request to the group members that are already inside the group. The request must be approved first in order for them to access the group.

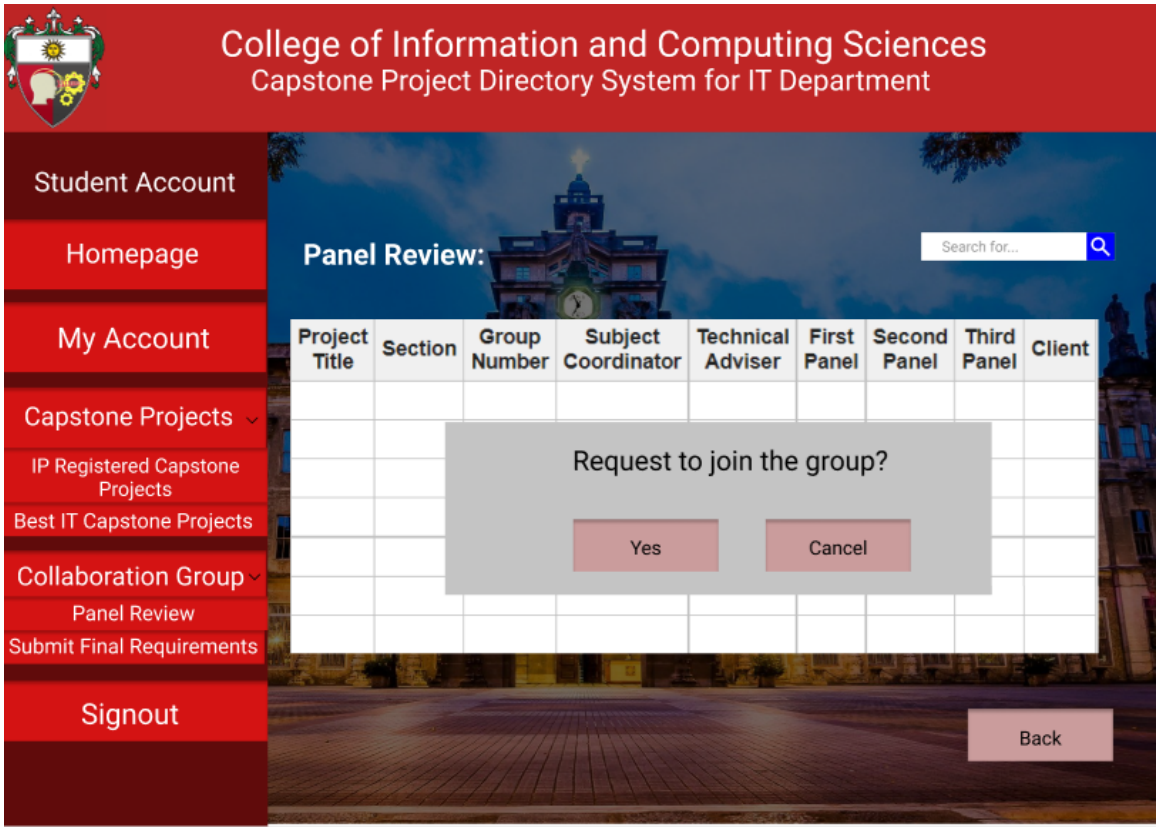


*Figure 3.56: Collaboration Group Request (Student Side)*

This page will be shown when a student member wants to join a group. When a student member knows that they're part of the project, the student member will click on the project title and this question will appear. They will be accepted by the one who created the group and will see the details about the project and the link for panel review.

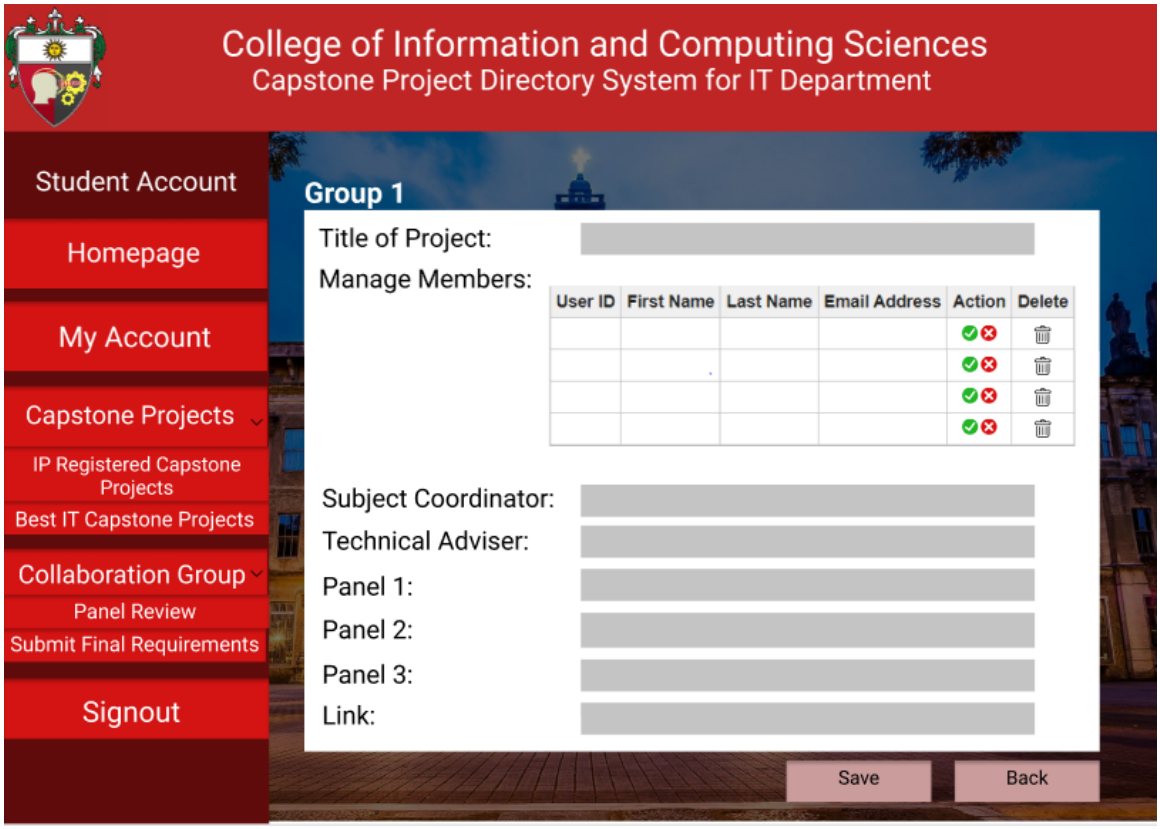


*Figure 3.57: Collaboration Group (Student Side)*

When the student request to join is approved, it will display this page where they can upload the link of their project document so that the panelist can review their document.

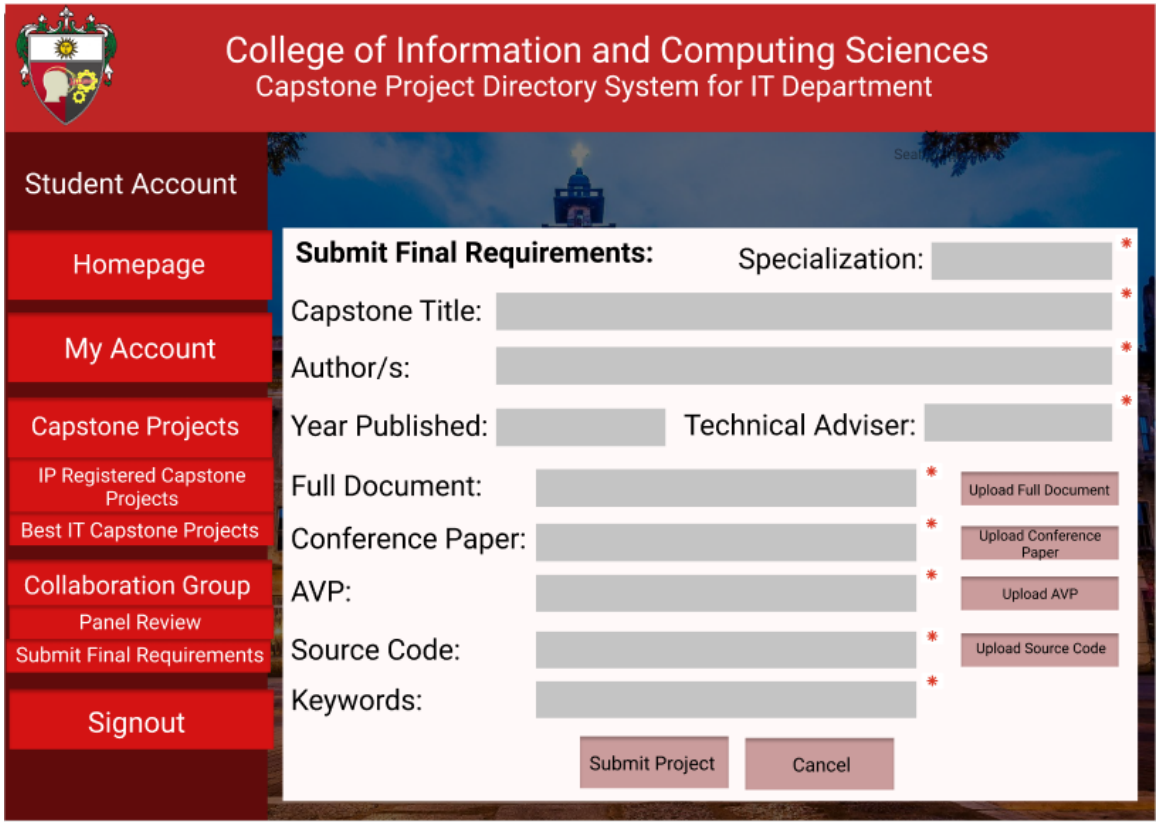


*Figure 3.58: Submit Final Requirement (Student Side)*

When the student clicks the Submit Final Requirement button, This page will appear and needs to accomplish the following: Capstone title, specialization, author/s, year published, technical adviser, upload full document, AVP, Source code, Conference paper, and keywords.

## Implementation Plan

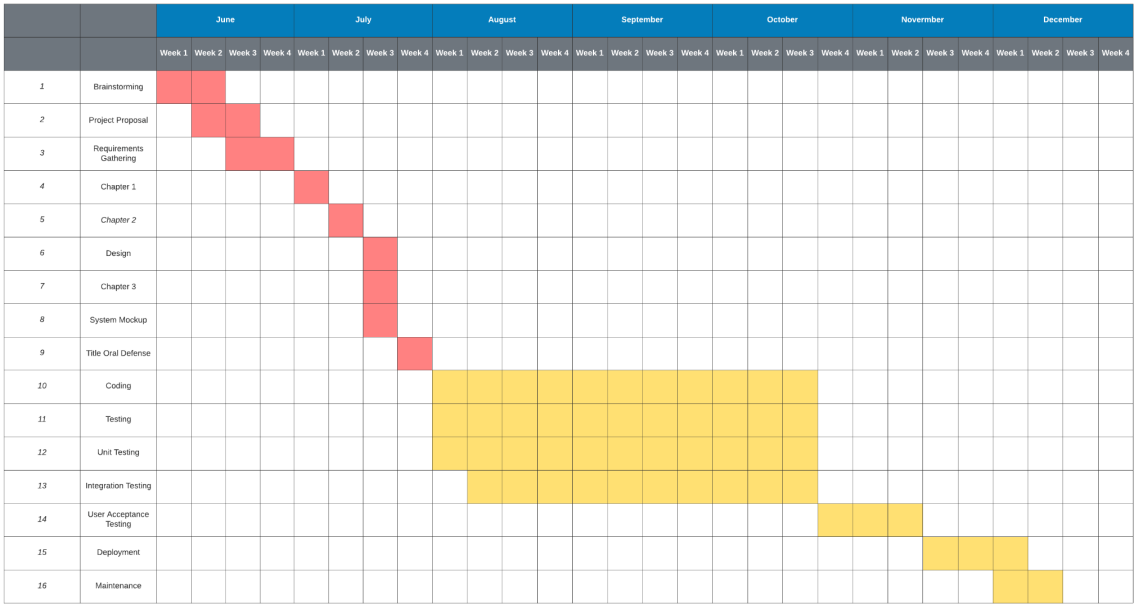


*Figure 3. 59: Gantt Chart*

The figure above shows the time allocation for the project titled: Capstone Project Directory System. The Capstone Project Directory System is expected to be completed for two semesters. The first semester, which runs from June 2021 to July 2021, is the third term of the Academic Year 2020-2021. The Second Semester, which runs from August 2021 to December 2021, is the first term of the Academic Year 2021-2022.

**Test Plan**

Testing will be done in a modular process. The system has three actors who are the student, faculty, and the administrator. For the functional requirements, unit and integration testing were implemented.

**Unit Testing**

Unit testing will be done through the project's software developers, who will run each code and page of the website to check for bugs and errors. The unit testing will be done starting from the login page, homepage, view capstone projects list page, manage (add/edit/delete) capstone project page, view capstone project documents, manage (approve/decline) pending capstone projects, create collaboration groups, view collaboration groups, join collaboration groups, forgot password, and change password. The database will also be checked to see if the updates done with the data of the contents of the website will be successfully reflected in the database.

**Integration Testing**

Integration testing is used to check the behavior of the entire system as well as its interface with the system software modules. Suppose the system is found to have no errors. In that case, the Integration testing stage will be conducted, including checks for possible bugs and environment issues such as memory allocation failures.

**Alpha Testing**

Alpha testing will be done by the quality assurance team and will be done in order to test the system for performance issues and bugs through a user's point of view of the system which will allow the needed improvements to be applied before going through the User Acceptance Test.

**User Acceptance Test**

System tests will be approached through unit testing, integration testing, and user acceptance testing (UAT). In UAT, actual users will test the system to determine if it performs its necessary tasks designed to give the right solutions to the situations experienced by the department.

**Features to be Tested**

The following are the functional and non-functional requirements that will be tested for the Capstone Project Directory System for UST IT Department:

**Functional Requirements based on Administrator's Perspective**

1. Login

    1.1 Forgot Password

    1.2 Logout

2. My Account

2.1 Change Password

3. Admin Dashboard

3.1 Add Capstone Project

3.2 Edit Capstone Project

3.3 Delete Capstone Project

4. List of Capstone Projects

4.1 View Capstone Project documents

4.2 Sort Capstone Projects (IP Registration Number, Title, Specialization, Year Published, Technical Adviser)

**Functional Requirements based on Student's Perspective**

1. Login

1.1 Register

1.2 Forgot Password

1.3 Logout

2. My Account

2.1 Change Password

3. Student Dashboard

3.1 Homepage button

3.2 Capstone Projects button

4. List of Capstone Projects

4.1 View Conference Paper button

4.2 Sort Capstone Projects (Title, Specialization, Year Published, Technical Adviser)

5. Collaboration Groups

5.1 Panel Review

5.2 Join Collaboration Groups

5.3 Submit Final Requirements

**Functional Requirements based on Faculty's Perspective**

1. Login

1.1 Register

1.2 Forgot Password

1.3 Logout

2. My Account

2.1 Change Password

3. Faculty Dashboard

3.1 Homepage button

3.2 Capstone Projects button

4. List of Capstone Projects

4.1 View Capstone Project documents

4.2 Sort Capstone Projects (Title, Specialization, Year Published, Technical Adviser)

5. Collaboration Groups

5.1 View Collaboration Groups

5.2 Create Collaboration Groups

**Non-functional Requirements**

1. Manageability - Test if the system performs all its functions needed to easily manage the capstone projects

2. Security - Test if the system only accepts users that register using the email provided by the University of Santo Tomas with the domain ust.edu.ph.

3. Reliability - Test the system's accuracy in performing its functions which includes the searching and submitting of documents.

4. Scalability - Test the system if it can handle a high amount of workload.

## Test Cases

*Table 3.3: Administrator Valid Login Test Plan*

| **Test Case ID: TC01** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Login Page | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test system response for valid admin login | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the login page | | Users will be directed to the login page. | | | |
| 2 | Input valid email address and password | Email, Password | The input fields for the email address and password should accept the user's input. | | | |
| 3 | Click login button | | The user will be redirected to the homepage of the website.<br><br>The admin dashboard should be visible. | | | |

*Table 3.4: Invalid Login Test Plan*

| **Test Case ID: TC02** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Invalid Login Error Catching | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test system response for invalid input to login. | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the login page | | Users will be redirected to the login page. | | | |
| 2 | Input one or more invalid email address and/or password | Email, Password | The input fields for the email address and password should accept the user's input. | | | |
| 3 | Click login button | | The system will display an alert stating "Invalid email/pass word". | | | |

*Table 3.5: Student Register Test Plan*

| **Test Case ID: TC03** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Student | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Student Register Account | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the student register function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the login page | | The user will be redirected to the login page. | | | |
| 2 | Click the Register button | | The user will be redirected to the Create Account page. | | | |
| 3 | Input valid details on all required fields (First Name, Last Name, School Email Address, Password) | | The text and password fields will accept all of the user's inputs. | | | |
| 4 | Click the Create Account button | | The user's account will successfully be created and saved in the account database with the unique User ID. | | | |

*Table 3.6: Forgot Password Test Plan*

| **Test Case ID: TC04** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Reset forgotten password of valid account | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test Forgot Password function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Click Forgot Password | | The user should be redirected to the Forgot Password page. | | | |
| 2 | Enter registered email address | Email | The text field should accept the user's input. | | | |
| 3 | Click Reset Password | | A link should be sent to the user's registered email address which they can click to change their account's password. | | | |

*Table 3.7: Change Password Test Plan*

| **Test Case ID: TC05** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Change password of valid account | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test change password function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Click the My Account tab on the dashboard | | The user will be redirected to the My Account page. | | | |
| 2 | Enter current password of account on the Old Password field | Password | The password field will accept the user's input. | | | |
| 3 | Enter new desired password on New Password field | Password | The password field will accept the user's input. | | | |
| 4 | Click Change Password | | The user's account will successfully be changed to the new password. | | | |

*Table 3.8: Logout Test Plan*

| **Test Case ID: TC06** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Logout of account | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the Signout button. | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Click the Signout button on the dashboard. | | The user should be successfully logged out from the website. | | | |

*Table 3.9: Admin Dashboard Test Plan*

| **Test Case ID: TC07** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Dashboard | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the admin dashboard | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the admin dashboard visible. | | | |

*Table 3.10: Admin Capstone Projects List Test Plan*

| **Test Case ID: TC08** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Capstone Projects List | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the admin view of the capstone projects list | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Click the Capstone Projects dropdown on the admin dashboard | | | | | |
| 3 | Click the IP Registered Capstone Projects button | | The user will be redirected to the List of Capstone Projects page with the administrat or buttons visible below the list. | | | |

*Table 3.11: Add Capstone Project Test Plan*

| **Test Case ID: TC09** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Add Capstone Project | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the add capstone project function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the IP Registered Capstone Projects tab | | The user will be redirected to the list of capstone projects page | | | |
| 3 | Click the Add Capstone Project button | | The user will be redirected to the Add Capstone Project page | | | |
| 4 | Input all required fields | Capstone Project details | The user will be able to input on all fields and will be able to upload files successfully. | | | |
| 5 | Click the Add Project button | | The capstone project should now be added to the list of capstone projects that are displayed on the | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | website. | | | |

*Table 3.12: Edit Capstone Project Test Plan*

| **Test Case ID: TC10** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Edit Capstone Project | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the edit capstone project function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the IP Registered Capstone Projects tab | | The user will be redirected to the list of capstone projects page | | | |
| 3 | Select a Capstone Project in the list | | The row of the selected capstone project will be highlighted. | | | |
| 4 | Click the Edit Capstone Project button | | The user will be redirected to the Edit Capstone Project page where all the details of the selected capstone project are | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | displayed and can be edited on the input fields. | | | |
| 5 | Change the text in the input fields. | Capstone Project details | The input fields will accept the user's input. | | | |
| 6. | Click Save Capstone Project | | All changes made with the capstone project details must be saved and must reflect on the list of the capstone projects. | | | |

*Table 3.13: Delete Capstone Project Test Plan*

| **Test Case ID: TC11** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Delete Capstone Project | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the delete capstone project function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the IP Registered Capstone Projects tab | | The user will be redirected to the list of IP registered capstone projects page. | | | |
| 3 | Select a Capstone Project in the list | | The row of the selected capstone project will be highlighted. | | | |
| 4 | Click the Delete Capstone Project button | | The system will display a confirmatio n alert. | | | |
| 5 | Click Confirm | | The selected capstone project will be deleted. | | | |

*Table 3.14: Administrator Add Best IT Capstone Projects Test Plan*

| **Test Case ID: TC12** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Add Best Capstone Projects | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the add best capstone projects function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the IP Registered Capstone Projects tab | | The user will be redirected to the list of capstone projects page. | | | |
| 3 | Select a capstone project from the list | | The row of the selected capstone project will be highlighted. | | | |
| 4 | Click the Add to List of Best IT Capstone Projects button | | The selected capstone project will be added to the list of best IT capstone projects. | | | |

*Table 3.15: Administrator Edit Best IT Capstone Projects List Test Plan*

| **Test Case ID: TC13** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin Edit Best Capstone Projects | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the edit best capstone projects function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the Best IT Capstone Projects tab | | The user will be redirected to the list of Best IT Capstone Projects page. | | | |
| 3 | Click the Edit List button | | Checkboxes should appear beside each listed capstone projects. | | | |
| 4 | Tick the checkbox of a capstone project | | | | | |
| 5 | Click the Delete button | | The ticked capstone project should be deleted from the list of Best IT | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Capstone Projects. | | | |
| 6 | Click the Save button | | The change done should be reflected in the website. | | | |

*Table 3.16: Admin View Capstone Project Documents Test Plan*

| **Test Case ID: TC14** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Admin View Capstone Project Documents | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the admin feature of viewing the full capstone project documents | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the IP Registered Capstone Projects tab | | The user will be redirected to the list of capstone projects page. | | | |
| 3 | Click View in the Approval Form/Conference Paper/Source Code/AVP column/s in the row of the selected capstone project | Capstone Project document | The user will be redirected to the page where the selected document of the capstone project can be seen. | | | |

*Table 3.17: Admin Manage Pending Capstone Projects Test Plan*

| **Test Case ID: TC15** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Administrator | | | **Test Designed Date:** July 28, 2021 | | | |
| **Test Title:** Admin Pending Capstone Projects | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the admin feature of accepting and rejecting pending capstone projects | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the admin account | Email, Password | The user will be redirected to the homepage of the website with the admin dashboard visible. | | | |
| 2 | Navigate to the Pending Capstone Projects tab in the Capstone Projects dropdown | | The user will be redirected to the page where the list of pending capstone projects are displayed. | | | |
| 3 | Select a capstone project | Pending Capstone Project | The row of the selected capstone project should be highlighted. | | | |
| 4 | Click Approve Capstone Project / Reject Capstone Project | | Approve Capstone Project: The selected capstone project should be either added to the list of IP Registered Capstone Projects. | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Reject Capstone Project: The selected capstone project should be removed from the list of pending capstone projects. | | | |

*Table 3.18: Student Login Test Plan*

| **Test Case ID: TC16** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Student | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Student Login Page | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test system response for valid student login | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the login page | | Users will be directed to the login page. | | | |
| 2 | Input valid email address and password | Email, Password | The input fields for the email address and password should accept the user's input. | | | |
| 3 | Click login button | | The user will be redirected to the homepage of the website.<br><br>The student dashboard should be visible. | | | |

*Table 3.19: Student Capstone Projects List Test Plan*

| **Test Case ID: TC17** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Student | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Student View Capstone Projects List | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the student view for the list of capstone projects | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using a student account | Email, Password | The user will be redirected to the homepage of the website with the student dashboard visible. | | | |
| 2 | Click the Capstone Projects dropdown on the dashboard | | | | | |
| 3 | Click the IP Registered Capstone Projects button | Capstone Projects | The user should be redirected to the list of past capstone projects. | | | |
| 4 | Click View button on the Conference Paper column | Capstone Project Conference Paper | The user should be redirected to the page where the conference paper of the selected capstone project is displayed. | | | |

*Table 3.20: Sort Capstone Projects List Test Plan*

| **Test Case ID: TC18** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Student | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Student Sort Capstone Projects List | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the sorting function for the list of capstone projects | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the IP Registered Capstone Projects page | | The user will be redirected to the list of IP registered capstone projects page. | | | |
| 2 | Click a column index (IP Registration Number, Capstone Title, Specialization, Year Published, Technical Adviser) in the list | Capstone Projects | The list should be sorted according to which column is clicked. | | | |

*Table 3.21: Student Submit Final Requirements Test Plan*

| **Test Case ID: TC19** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Student | | | **Test Designed Date:** July 29, 2021 | | | |
| **Test Title:** Student Submit Final Requirements | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the student feature of uploading capstone project | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using a student account | Email, Password | The user will be redirected to the homepage of the website with the student dashboard visible. | | | |
| 2 | Click the Submit Final Requirements tab in the Collaboration Group dropdown. | | The user should be redirected to the Submit Final Requireme nts page. | | | |
| 3 | Input all required fields | Capstone Project details | The system must accept the user's inputs. | | | |
| 4 | Click Submit Project | | The capstone project details and documents should be uploaded to the database and be visible in the list of pending capstone projects | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | list. | | | |

*Table 3.22: Student Collaboration Groups List Test Plan*

| **Test Case ID: TC20** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Student | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Student Collaboration Groups | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the list of capstone projects page in user's view | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using a student account | Email, Password | The user will be redirected to the homepage of the website with the student dashboard visible. | | | |
| 2 | Click the Capstone Projects dropdown on the dashboard | | | | | |
| 3 | Click the Collaboration Group button | | The user will be redirected to the list of collaboratio n groups page. | | | |
| 4 | Click a collaboration group on the list to join | Collaboratio n groups | The system should display a confirmatio n pop-up asking "Request to join the group?". | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | Click Yes | | The system should send a request to the faculty account that created the selected collaboratio n group. | | | |

*Table 3.23: Faculty Login Test Plan*

| **Test Case ID: TC21** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Faculty | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Faculty Login Page | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test system response for valid faculty login | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Navigate to the login page | | Users will be directed to the login page. | | | |
| 2 | Input valid email address and password | Email, Password | The input fields for the email address and password should accept the user's input. | | | |
| 3 | Click login button | | The user will be redirected to the homepage of the website.<br><br>The faculty dashboard should be visible. | | | |

*Table 3.24: Faculty View Capstone Project Documents Test Plan*

| **Test Case ID: TC22** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Faculty | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Faculty View Capstone Project Documents | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the faculty feature of viewing the full capstone project documents | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using the faculty account | Email, Password | The user will be logged in and will be redirected to the homepage of the website with the faculty dashboard visible. | | | |
| 2 | Navigate to the IP Registered Capstone Projects tab | | The user will be redirected to the list of IP registered capstone projects page. | | | |
| 3 | Click View in the Approval Form/Conference Paper/Source Code/AVP column/s in the row of the selected capstone project | Capstone Project documents | The user will be redirected to the page where the selected document of the capstone project can be seen. | | | |

*Table 3.25: Faculty Create Collaboration Group Test Plan*

| **Test Case ID: TC23** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Faculty | | | **Test Designed Date:** July 20, 2021 | | | |
| **Test Title:** Faculty Collaboration Groups | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the create collaboration group function | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using a faculty account | Email, Password | The user will be redirected to the homepage of the website with the faculty dashboard visible. | | | |
| 2 | Click the Collaboration Group dropdown | | | | | |
| 3 | Click the Panel Review button | | The user will be redirected to the list of collaboratio n groups page. | | | |
| 4 | Click the Create Collaboration Group button | | The user should be redirected to the Create Collaborati on Group page. | | | |
| 5 | Input all required fields. | Collaboratio n group data | The system should accept all the user's input. | | | |
| 6 | Click Create | | The collaboratio | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | n group should be visible in the list of collaboratio n groups. | | | |

*Table 3.26: Faculty Archive Collaboration Group Test Plan*

| **Test Case ID: TC24** | | | **Test Designed by:** Moya, Don Carlos S. | | | |
|---|---|---|---|---|---|---|
| **Module Name:** Faculty | | | **Test Designed Date:** July 30, 2021 | | | |
| **Test Title:** Faculty Archive Groups | | | **Test Executed By:** Moya, Don Carlos S. | | | |
| **Description:** Test the faculty feature of archiving collaboration groups | | | **Test Execution Date:** | | | |
| **Steps** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Login using a faculty account | Email, Password | The user will be redirected to the homepage of the website with the faculty dashboard visible. | | | |
| 2 | Click the Collaboration Group dropdown | | | | | |
| 3 | Click the Panel Review button | | The user will be redirected to the list of collaboration groups page. | | | |
| 4 | Select a group | | The row of the selected group will be highlighted. | | | |
| 5 | Click Add Group to Archive | | A confirmation | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | alert will be displayed. | | | |
| 6 | Click Confirm | | The selected group will be added to the list of archived groups. | | | |

## Appendix A: Bibliography

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