# CHAPTER I

# INTRODUCTION

This chapter aims to provide context for the project, covering its background, the client's profile, the developed solution, objectives, and scope. It starts with a comprehensive exploration of how the project originated and the context in which it operates. Subsequently, the client's profile is described to gain insight into their needs and goals. Following this, the study's objectives are outlined, detailing the features of the system. Finally, the chapter concludes with an examination of the study's scope and limitations, thereby defining its parameters and constraints.

## Project Context

In the rapidly changing landscape of education, specifically in the field of Information and Communications Technology (ICT), universities are faced with challenges of efficient management of capstone projects undertaken by the students and managed by the faculty. The provided capstone projects are essential in promoting innovation and advancing knowledge within the field. Developing a centralized platform such as a cloud-based document tracker and records organizer in order to streamline processes, proposal submissions, review and tracking is a necessity, for the capstone project aims to address the inefficiencies and challenges in managing the research and capstone projects within the College of Information and Communications Technology (CICT) of Bulacan State University (BulSU) - Main Campus. Particularly, it aims to

streamline the process of proposal submission, review, managing, and tracking for both the use of faculty members and students. Sangadikar (2023), states that a document tracker, such as a file tracking system, offers several advantages for organizations. It provides a central location for documents, automates routine tasks, enhances communication, and ensures document security.

The primary beneficiaries of this project are the faculty members and students within the College of Information and Communication Technology (CICT) of Bulacan State University (BulSU) - Main Campus. There are three offered specializations: Web and Mobile Application Development, followed by Service Management, and Business Analytics. Students enrolled in these specializations are required to synthesize a capstone project relevant to their chosen track. During the following semesters, students submit their proposed projects which will include the documentation of their work, the source code used in developing the system, and other relevant files that contributed to the completion of their system. A profuse amount of submitted files would make the manner of accessing them difficult and inconvenient. According to Nihare (2020), locating files is one of the biggest problems in universities nowadays, for time is wasted in searching for files, and energy is wasted on misspelled files. Alade (2023) also stated that a suggested electronic document management system would improve user happiness, boost productivity, and guarantee time and data efficiency.

A cloud-based document tracking and records organizer aligns with the current trends in the industry Information and Communications Technology (ICT), particularly in the field of cloud computing. Cloud computing continues to be a dominant trend, with more companies, organizations and academic institutions transitioning to cloud-based solutions

for storage and computing power. According to Varri (2023), cloud storage offers numerous advantages which includes cost savings, accessibility, scalability. It allows users to avoid the expense of building and maintaining a private storage infrastructure, and provides flexibility to access data from any location and device. By integrating cloud-based solutions to the capstone project, it enables seamless access to resources, on-demand scalability and easier maintainability of the system.

The capstone project's integration of cloud computing technologies will allow the College of Information and Communications Technology (CICT) to enhance and streamline the submission, reviewing and management of capstone proposals, documentations and other deliverables by utilizing an organized and centralized platform. It would also solve the overtime accumulation of capstone documentations, files and source codes from capstone projects each semester. As the utilization of cloud storage offers scalability as stated by CompTIA (2020), the seemingly infinite storage capacity of the cloud remains a significant advantage. To summarize, with the utilization of cloud-based solutions in a capstone document tracker and records organizer, it can enhance the collection and management of capstone documentations, files and source codes and offers on-demand scalability for storage needs and computing power, also removing the need for building and maintaining a private storage infrastructure, paving the way for a cost-effective, scalable and efficient processes in a cloud-based centralized platform.

**Purpose and Description**

The capstone project's main goal is to aid the College of Information and Communications Technology (CICT) of Bulacan State University (BulSU) - Main Campus to enhance and streamline the submission, reviewing and management of capstone proposals, documentations and other deliverables by utilizing an organized and centralized platform, in the form of a web-based capstone document tracker and records organizer that utilizes cloud-based solutions.

The capstone project's initial objective is the Capstone Titles Evaluation System for the College of Information and Communications Technology (CICT) students. In their capstone pre-proposal stage, students are required to submit a capstone justification form to their capstone coordinator. This form will contain the details of the title that they want to propose.

The submitted forms will then be distributed to the selected panels of each student capstone group by the coordinator. The panelists will then give their evaluations and comments for each capstone title the group submitted. This will then be the basis of what capstone title the group will pursue.

Functionalities and features of the capstone project will include First: Login, which allows faculty members and students to login to the system securely. Second: Profile Management, enabling users to update their personal information stored within the system. Third: Account Management for Administrators, it allows the administrator to manage system access of registered faculty members and students, assign them roles for faculty as capstone coordinators per section. While faculty members can assign capstone panelists, and capstone advisers to their handled sections. Fourth: Capstone Title and Adviser/Panel

Management, which facilitates the submission, evaluation and management of capstone titles groups, panels and coordinators. Fifth: Report Generation, allows the administrators and capstone coordinators to generate summary reports of title justifications, selected titles, panels, and advisers with filtering options. Sixth: Dashboard and Visualization, it provides an overview of system data through relevant graphs and charts, helping to understand and interpret complex information. Seventh: Content Management, allows for the management and updating of system content, including capstone documents, academic years, sections, and student capstone groups.

The beneficiaries of the capstone project belongs to the College of Information and Communications Technology (CICT) from Bulacan State University (BulSU) - Main Campus, they are the following; First: Students, enables students to submit their capstone title justifications, which are then evaluated by panelists assigned by the capstone coordinators. Also, it allows the submissions of capstone requirements that will be used for the designated capstone defense. Students can track the evaluation process and receive feedback on their submissions. Second: Faculty Members, it allows them to evaluate capstone title proposals, capstone requirements and capstone defenses of students using a web-based centralized platform Third: Future Researchers, the capstone project may serve as a reference to future researchers in the field of Information Technology (IT) who are pursuing to develop similar system(s). The applied methodologies within this project would act as a solid foundation for future researchers innovating similar endeavors.

**General Objectives**

The main objective of the study is to develop a web-based capstone document tracker and records organizer system for the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus. This system is intended to help students, faculty, and researchers in the field of Information Technology to easily store, manage, and access academic documents like capstone projects and source codes to improve the efficiency and convenience of document management within the college community.

**Specific Objectives**

Specifically, the researchers aimed to consider the following objectives:

1. To oversee the management of documents related to capstone projects:

    1.1 Capstone Paper

    1.2 Evaluation Tool

    1.3 Relevant Source Code

    1.4 Communication Letter

    1.5 User Guide / Manual

2. To track validated research publications of the College of Information Communications and Technology (CICT) faculties, undergraduates and graduate students:

2.1 Establish Database

2.2 Implement Tracking Mechanisms

2.3 Create Metadata Standards

2.4 Accessibility and Visibility

2.5 Reports and Analytics

3. To evaluate the quality of the developed system using the ISO/IEC 25010:

3.1 Functional Sustainability;

3.2 Performance Efficiency;

3.3 Compatibility;

3.4 Usability;

3.5 Security;

3.6 Reliability;

3.7 Maintainability;

3.8 Portability.

**Scope and Limitations**

The capstone project aims to develop a system for the purpose of capstone document tracking and management in the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus. The intended beneficiaries are tailored for both the faculty members and undergraduate students that belong to the College of Information and Communications Technology (CICT).

The objective of the capstone project is to effectively manage research and capstone documents generated by students and faculty members of the College of Information and Communications Technology (CICT). The provided capstone documents will be sorted based on their specialization and categories, in order to ensure organization and efficiency retrieval.

Users will encounter essential features in the system, including a login for existing users. The traditional method of account creation in which users manually create an account on a sign-up page, will not be implemented in the capstone project, in order to improve the account creation security and overall system security. For the Account creation of Faculty members are pre-created by the system administrator by sending an email invitation link to their provided email addresses with the instructions of activating their account by inputting their required personal information and changing of password. The same process is applied for Student account creation, with the main difference of clustering the provided email address of students into the year, section and specialization that they belong to, as an added security measure in order for students to not have the ability to change their year, section and specialization as it is already predetermined after an email invitation link has been provided to the students. A validation will also be included in the

invitation link as a security measure, in order to ensure that once the invitation link has already been used, it can no longer be accessed and used by others to avoid account complications.

Upon accessing the system, users without appropriate permissions will only be limited to have access to the contents assigned to them. Furthermore, a document filtration will be provided in order to view and categorize specific documents which enhance user experience and document searchability. The system will also indicate whether the submission of a specific capstone title has been approved, requires further improvement, or has been rejected. Faculty members will not have the ability to edit the contents of capstone documentations, and relevant files post-addition.

A tracking history of submitted proposed capstone titles will be visible to the students in order to see the progress of their proposed capstone titles, for the submitted titles will first be forwarded to the coordinator, after examining the titles. The coordinator then forwards the titles to the assigned panelists of those specific students. The panelists will then examine the three proposed capstone titles and provide feedback whether it is accepted, rejected or needs improvement. A tracking number will also be provided in order to view the progress of a proposed capstone title, the tracking number that contains the tracking history is accessible to the public and can be viewed by everyone within the system.

The capstone project will span from the capstone title proposal of College of Information and Communications Technology (CICT) 3rd year students to the extent of

4th year students' capstone final defense. With the exception of course(s) within the College of Information and Communications Technology (CICT) that only consists of three (3) academic years, similar to the course of Bachelor of Library and Information Science, the span of the project will then be within the academic year that is designated for them to conduct their final defense presentation.

Before or on the day of capstone defense, the final capstone paper must be submitted including the Powerpoint presentation. After the capstone title proposal and final defense presentation of College of Information and Communications Technology (CICT) students , the assigned panelists will now be able to grade the student group(s) they are assigned to and give their verdict. The assigned panelists will give their final verdict on whether the capstone student group will need to re-defense their capstone presentation or not.

The capstone project will be exclusively limited to the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus, which caters to its students and faculty members. The lack of a dedicated mobile application may limit access for users who primarily use mobile devices for system interaction. Appropriate training to faculty members and students may be necessary in order for them to familiarize themselves on how to use the system to maximize utilization and effectiveness. While efforts will surely be made to ensure data security and integrity, potential technical issues may still arise, given the nature of software systems. Periodic updates and continuous improvements may be necessary in order to address user feedback

and evolving requirements of the College of Information and Communications Technology (CICT).

# CHAPTER II

# REVIEW OF RELATED LITERATURE/SYSTEMS

This chapter presents a compilation of literature, studies, and systems sourced from online resources, serving as a foundation for the researchers in conducting a more precise study and development of this paper. Through the integration of these resources, the researchers have gained significant insights, enabling a more comprehensive exploration of the topic at hand. The variety of literature, studies, and systems has greatly contributed to broadening the researchers' perspective and deepening their understanding of the subject matter.

## Related Literatures

### Foreign Related Literatures

### Document Management and Tracking System

Upon reviewing the abstract of the research article titled "Document Management and Tracking System," iNetTutor.com (2022) states that a capstone project that is related to document management and tracking system, is intended for business and organizations that need to store and manage documents electronically and efficiently. It becomes evident that the study is aiming to address the inefficiencies in document management and tracking within businesses and organizations.

iNetTutor.com (2022) notes that manual tracking is the most common method of document tracking, the staff will call or personally request updates on the time-consuming

and inefficient documents. The proposed project seeks to achieve similar outcomes by developing a centralized platform for faculty members and students to submit, review, manage, and track capstone proposals and related documents by utilizing cloud-based solutions incorporated in a capstone document tracker and records organizer system.

In synthesis, the Document Management Tracking System was designed to fine-tune and optimize the records and archival processes of electronic documents. This was created with the intention of making such work as efficient and as accessible as possible.

**The ubiquitous digital file: A review of file management research**

The abstract of the research article titled "The ubiquitous digital file: A review of file management research" provides valuable insights on the nature of digital file management, which is closely related to the objectives of the proposed project aimed at improving the capstone document management processes within the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus.

Dinneen and Julien (2019) states that computer users spend time every day interacting with digital files and folders, including downloading, moving, naming, navigating to, searching for, sharing, and deleting them. The research findings presented in this article contribute to a deeper understanding of file management being a ubiquitous, challenging and relatively complex activity, reinforcing the importance of the proposed capstone project in addressing the challenges associated with document management within the College of Information and Communications Technology (CICT).

**Research on Personnel File Management Based on Computer Information Technology** The research on "Personnel File Management Based on Computer Information Technology", emphasizes the importance of computerized systems in enhancing work efficiency. as Juan (2021) states that informatization has become an inevitable trend, and it is also the main way for modern society to improve work efficiency.

The aim of this research focuses on information resource management, technology management, and service management which aligns with the proposed capstone project's objective of to create a centralized platform for capstone project management, facilitating efficient submission, review and tracking, which ultimately streamlines document management processes within the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus.

**Student Project Management System**

The research titled "Student Project Management System" describes the challenges and difficulties that are associated with managing final year projects of students manually and highlights the necessity for a platform to streamline project activities. Soms et al (2021) states that the Project management system is a system for the management, tracking and supervision of students' final year projects. It is a web-based platform or framework that is useful to students, project managers and project managers. The research project

management system aims to provide a web-based platform for efficiently managing, tracking, and supervising students' final year projects.

The integration of a project leader component facilitates the assignment of assignments, similar to how capstone coordinators in the proposed capstone project have the ability to assign panelists and advisers to capstone student groups. All the insights gathered from the research benefits the development of the proposed capstone project; it provides a blueprint for building an effective and user-friendly centralized platform for managing the capstone projects within the College of Information and Communications Technology (CICT) department.

**File Tracking System**

The research titled "File Tracking System" addresses the prevalent issue of file management inefficiencies in universities Nihare et al (2020) states that locating files is one of the biggest problems in universities nowadays. Time is wasted in searching files, energy is wasted chasing misspelled files, deadlines are missed. The researchers then propose the development of an internet application to streamline file tracking processes.

By providing online tracking and monitoring functionalities, the system offers real-time access to file information, enhancing efficiency and reducing time wastage. Also, the inclusion of a search function enables users to locate files quickly further improving accessibility and transparency in file management processes. All of this mentioned resonates closely with the objectives of the proposed capstone project within the College

of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus.

## Local Related Literatures

### Towards a Bespoke Document Tracking System for Philippine Higher Educational Institutions

The research entitled: "Towards a Bespoke Document Tracking System for Philippine Higher Educational Institutions" projects the positive result of utilizing a system for the management of documents within the academic institutions. Ijrte.org (2019) identifies the digitization of document management through an efficient system model allowing their targeted clients to adapt and to navigate with its functionalities fulfilling the system's intended purpose.

As such, the proponents of this current study seek to devise a system adapting and emerging the aforementioned functionalities tailored for achieving the objectives of the proposed capstone project to be implemented within the College of Information and Communications Technology (CICT) department. Apart from this, the researchers will also be integrating the software development processes to have a systematic approach to the project.

**A Web-based Registration and Assessment Monitoring System for TESDA Management Information System Office of Provincial Capitol of Laguna (MISO)**

Web-based Registration and Assessment Monitoring Systems and Assessment Monitoring Systems have become essential tools in modern education and certification programs, driven by a shared goal of optimizing resource use and promoting efficiency (Montes, Alpante, & Taong, 2024).

The systems excel in aggregating data from applicant databases, uploading of requirements, course schedules, assessment results and file management, providing administrators with a comprehensive understanding of their educational environment (Montes, Alpante, & Taong, 2024). The incorporation of the document monitoring system provides centralized storage, tracking, and ensuring efficient management and security of course-related documents.

This system uses technology to integrate document management, ensure efficient tracking, and organize records within the department, allowing for quick access to important documents and capstone. This also increases productivity and data security, demonstrating the department's commitment to efficient and effective educational practices.

**Project management system for the ICT projects of the Department of Public Works and Highways (DPWH)**

The capstone project focuses on developing and implementing a comprehensive project management system tailored to address the unique challenges and requirements of Information and Communication Technology (ICT) projects within the Department of

Public Works and Highways (DPWH). Macadato (2023) states that establishing a centralized project management system, can improve resource allocations and utilization, enhance project documentation and knowledge management, and enhance risk management.

The objectives outlined in this project such as establishing a centralized project management system, resonates strongly with the goals of our proposed capstone project. While the context of both projects differs, its aim still remains the same to enhance efficiency and effectiveness through the utilization of technology. Just like how the Department of Public Works and Highways (DPWH) project aims to address issues of project delays and budget overruns through a centralized system.

**Initiatives in Organizing and Managing Electronic Resources in an Academic Library in Southern Philippines: A Case Study**

` The research paper delves into the practices and initiatives undertaken by librarians at Mindanao State University to organize and manage electronic resources within their academic library (Mama & Sarangani, 2019). Through a descriptive, exploratory, and explanatory design, the study aims to address various aspects of electronic resource management, including resource identification, software utilization, and accessibility assessment.

The study sheds light on the complexities involved in organizing e-books and theses/dissertations, highlighting the need for collaboration with IT professionals and

continuous skill development among librarians (Mama & Sarangani, 2019). The study emphasizes proactive approaches for better resource management in academic libraries, urging exploration of new software solutions. These insights align seamlessly with the objectives of the proposed Capstone Document Tracker and Records Organizer System for the College of Information Communications and Technology (CICT) at Bulacan State University (BulSU) - Main Campus. This system aims to integrate document management within the College of Information Communications and Technology, drawing on the study's insights to improve capstone and document management practices.

**The Development of an Online Database for Historical Archiving of Primary Sources**

The development of an online database for historical archiving of primary sources represents a pivotal advancement in historical research, facilitating efficient access to primary sources for historians and sociologists (Mobo, 2021). Traditional methods of archiving historical data, especially from distant events, have posed significant challenges. However, digital technology offers a promising solution by centralizing the storage of primary sources in online databases.

Studies in online archival systems contribute to ongoing efforts in creating comprehensive online databases for historical archiving. Such systems have the potential to streamline the archiving process and provide historians with a centralized platform for accessing and preserving historical data effectively, aligning with the proposed capstone project’s

objective to create a platform for capstone project management. This facilitates efficient submission, review, and tracking, ultimately streamlining document management processes within the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus.

## Related Systems

### Foreign Related Systems

#### Accreditation document tracking system using Scrum approach

Salleh et al. (2020) states that document tracking is a task that can be a tedious task for staff. This is because this involves the recording and monitoring the movements of the documents throughout the system. When it comes to document control, dislocation and overlooking of the timeline has always been a problem. This is why they created the Accreditation Document Tracking System (ADTS) that is designed to monitor movements of the documents as well as tracking the timeline of documents that gets passed around different departments throughout the accreditation process efficiently.

This project's main objective is developing a system that tracks the location of the documents and identifying its current status of submission as it goes through different stages. This is similar to the system that researchers are developing, tracking the papers that students submit and modify during the duration of their research capstone as well as notifying the advisers of the status of their, whether their papers are already approved, is in need of improvement, or their project has been rejected.

## File Tracking System for Government Degree College (GDC) Wari Dir Upper, Khyber Pakhtunkhwa

According to Haq and Ullah (2022) one of the major issues in colleges nowadays would be tracing various files that are archived within the college's records. Multiples issues are raised and have existed to this day, some of which are the following; wastage of time in searching for files, tracking and setting the misplaced files within the records, timed deadlines being missed on occasions where tracking the files take up too much time, and lastly is some files are lost within the records. This is why they developed a system such as the File Tracking System (FTS) for Government Degree College (GDC) Wari to mediate the aforementioned problems. In the proposed system, files that have existed within the records as well as new or recently added files will be tracked.

In this system that they developed, users can only view the records, see the details of their files and where their files are located. This functionality strikes a resemblance on the researchers proposed system with minor adjustments regarding the interaction of the uploaded files and its modification. In the researchers' proposed system, assigned faculty members will be able to modify and keep track of the files that are recorded. There would also be the students that upload the files of their research capstones, having the ability to modify and update the files as they undergo their research within the following semesters.

## Analysis and Design of File Tracking System

As the age of computers and technology continue to progress, it is a given that everything is slowly getting digitized. Within the context of saving and tracking files, simulation of physical files into their digitized electronic form enables fast retrieval, eased movement, and regulation of files a lot easier (Bala & Muhammad , 2020). In their iteration of a File Tracking System, their system captures and saves documents attached to the file, with proper assignment of where the documents are stored, complemented with the activities and updating history of the file's modification and its processes.

The proponents of the related study have also stated an abundant volume of data that continues to be generated inside the academic institutions. Manual location and tracking of files is deemed as a tedious and time-consuming process for the administrative staff. Thus, they proposed a system that can combat the conflicts caused by the traditional system of file monitoring. Files concerned within the system such as reports, decisions, requests, and location history are able to be processed and tracked by the system at any given time.

**Design and Implementation of File Tracking System for Registry Department of Bayero University Kano**

Abubakar and Mohammed (2019) remarked that as of current circumstances, file management within organizations is necessary. With that in mind, passing files in different departments manually can pose certain challenges. In response to this dilemma, a File Tracking System was developed and implemented for the Registry Department of Bayer University Kano. The implementation of the system within their university bears the following results; Increased efficiency and consistency of recording files, improvements

of managing resources and quality of administration while keeping the in mind proper transparency and accountability. Due to the aforementioned improvements, it reduced the time of processing and minimizing the possible delays that may be encountered in managing records.

The results of the aforementioned system would serve as a guideline of what the researchers hope to achieve in creation of the proposed Capstone Document Tracker and Records Organizer System for the College of Information Communications and Technology (CICT) at Bulacan State University (BulSU) - Main Campus. Aiming to reduce the workload of the staff involved in organization of files as well maintaining integrity in handling the papers as it gets processed by the students over the course of the semester.

**Project Management System for Graduating Student Progress Monitoring**

Thanuja et al. (2023) stated that as technology continues to progress, there would be an increasing need for systems that can simplify and streamline academic processes, such as project report submissions and evaluations. To satisfy such needs, a project management system was brought into development that could remedy the struggle of the standard manual transmission process of project reports.

The system was developed as a simplified gateway between students and professors where students are able to easily submit their project reports online. Eliminating the mundane manual transmission of tasks as the existing process proves to be very hectic, time-

consuming and also vulnerable to numerous human errors that can further complicate the process (Thanuja et al, 2023).

## Local Related Systems

### Research and Capstone Project Electronic Repository

The research titled “Research and Capstone Project Electronic Repository”, highlights that it is evident that the study aims to address the challenges that are being faced by higher education institutions in managing research and capstone project outputs. Lalisan and Sobejana (2019) states that higher education institutions are challenged to manage research and capstone projects output available through open access is something that is increasingly mandated by funders and universities in many countries.

The development of an online repository for these projects, as outlined in the abstract, aligns closely with the goals of our proposed capstone project. Both the projects share a common objective to facilitate the dissemination of research outputs and capstone projects to a specific audience, organization or institution.

### Project DOTS (Document Tracking System): Its Effects in The Inter-Offices in The Schools Division of Parañaque City

Upon reviewing the research, it is evident that the study focuses on the development and implementation of an online system called Document Tracking System (DOTS). The objective of the study is to create a tracking system to help in effectively managing

documents, with the specific goal of creating a ticketing system for tagging users and enabling online monitoring mechanisms.

Emralino (2019) states that document management has become a visible solution in any organizations. The findings and recommendations of this study resonates with the goals of our proposed capstone projects, which aims to develop a centralized platform for managing capstone proposals and documentations within the College of Information and Communications Technology (CICT) at Bulacan State University (BulSU) - Main Campus. The overarching goal of improving document management processes through technology remains consistent, highlighting the relevance of the findings from this study in order to incorporate it into our proposed capstone project.

**Implementing Document Management System (DMS) Technology in Barangay Paligui, Apalit, Pampanga**

The research article titled “Implementing Document Management System (DMS) Technology in Barangay Paligui, Apalit, Pampanga”, focuses on the implementation of a Document Management System (DMS) technology that is situated in Barangay Paligui, Apalit, Pampanga. The objective of this study is to introduce Document Management System (DMS) technology in those locations in order to improve the document management processes within the barangay and highlights on why it is important to do it.

The findings in this study suggests that the implementation of a Document Management System (DMS) has resulted in more efficient and organized document management practices which leds to improved accessibility and retrieval of important documents.

**Electronic Document Management and Tracking System (EDMTS)**

Upon reviewing the research titled “Electronic Document Management and Tracking System (EDMTS)”, it highlights the challenges faced by the PhilHealth Regional Office of National Capital Region (PRO NCR) in managing various types of documents internally. These challenges include missing documents, ineffective dissemination, poor tracking, retrieving, and printing of documents. That is why the researchers of this study aims to develop an Electronic Document Management and Tracking System (EDMTS) to address the mentioned issues. Virgilio (2022) notes that an Electronic Document Management and Tracking System (EDMTS) can manage and transmit various documents, it also centralizes storing of informations through a web application to quickly retrieve, share, disseminate and monitor document status.

Developed using PHP Laravel framework to be the frontend, MySQL for information storage and Apache server as a web application server, the developed Electronic Document Management and Tracking System (EDMTS) significantly improved the corporation’s performance and productivity in managing documents.. Using the insights gathered from this study, our proposed capstone project can benefit from best practices and strategies that was implemented in the development and implementation of this study.

**Document management system implementation for modernizing and standardizing case deputations of the Office Of the Solicitor General with online verification**

Document Management Systems (DMS) are pivotal in modernizing document handling processes across industries, notably in legal settings. Augustus Mark B. Dichoso's project, focused on implementing a DMS for the Legal Deputation division of the Philippines' Office of the Solicitor General (OSG), exemplifies the importance of such systems in enhancing efficiency, accuracy, and security in legal document management (Dichoso, 2023). Through automating tasks like document creation, storage, retrieval, and verification, the proposed DMS aims to revolutionize the OSG's document handling practices, aligning with global trends in digital transformation.

In essence, Dichoso's project underscores the transformative potential of DMS in legal settings, emphasizing improvements in document handling efficiency, security, and procedural compliance (Dichoso, 2023). This aligns with the objectives of developing a Capstone Document Tracker and Records Organizer System for the College of Information Communications and Technology (CICT) at Bulacan State University, ensuring a focus on user-friendly interfaces, optimized data entry forms, and intuitive workflows to enhance document management processes in the academic environment.

**Synthesis of Related Literature and Systems**

Overall, there have been multiple related forms of literature and systems that have well documented the processes and improvements of integrating a document records and management system. Multiple cases and results that are gathered from both within and outside our country that contribute to the development of our very own system and shows the urgency of its creation within our campus. Going forward, we intend to integrate such features that are relevant within our objective of centralizing the process of storing, managing, and accessing academic documents like capstone projects. Improving the ease of success and essentially creating a bridge between students and faculty members can meet with both parties having to communicate with each other as the academic year progresses with their research capstone in hand.

# CHAPTER III

# TECHNICHAL BACKGROUND

This chapter addresses the methodology the researchers plan to employ, as well as the pivotal software and hardware requirements, diagrams, and tables necessary for comprehending and constructing the system's flow. Serving as a comprehensive guide, it equips researchers with the essential tools for both system development and comprehension.

## Research Methodology

The researchers plan to employ Descriptive and Developmental Research in this study. Atmowardoyo (2018) stated that descriptive research can include both quantitative and qualitative analysis, as well as some subtypes such as questionnaires and qualitative research. The researchers will apply quantitative analysis, which is a questionnaire to collect data on the software's quality, after using qualitative analysis by interviewing the client to understand the requirements.

Likewise, the developmental research method is applicable for this study as the researcher developed a web-based application that aims to address the issue of the client. The system will be evaluated by the Bulacan State University (BulSU) College of Information and Communications Technology (CICT) Faculty and Students to measure the effectiveness and efficiency of using the application compared to the current processes without a web-base centralized platform.

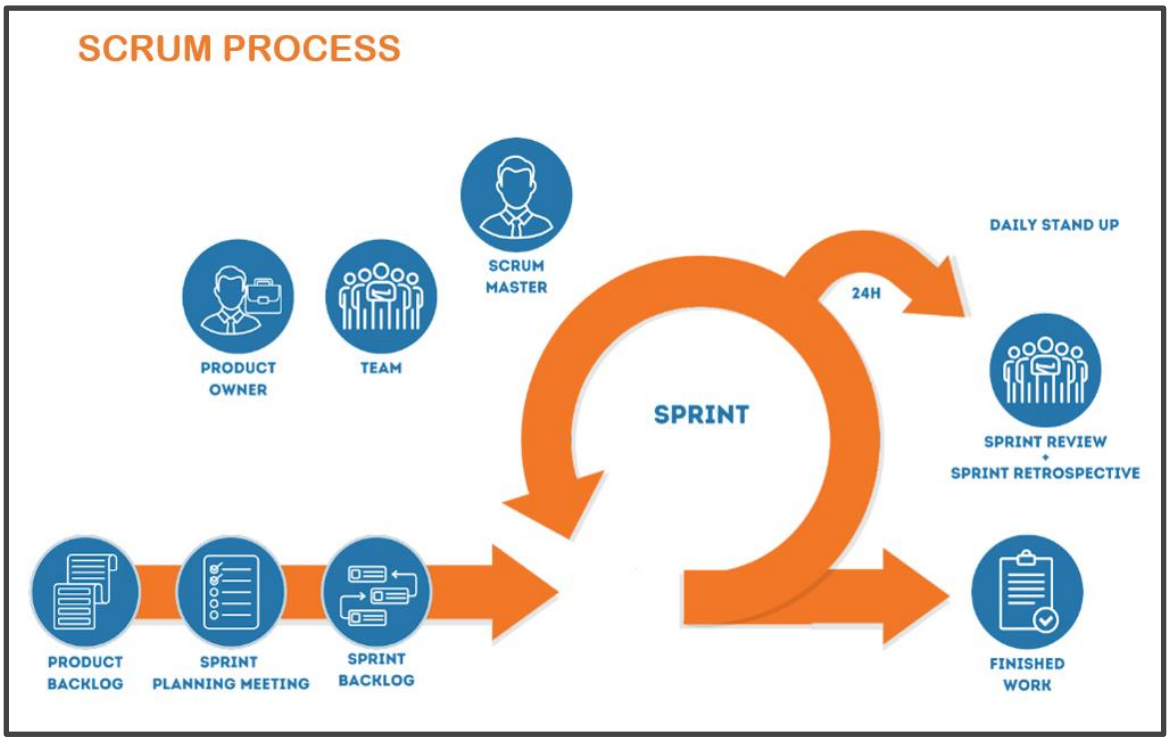
**Software Development Methodology**

According to Gurung (2020), Software Development Life Cycle (SDLC) focused on a step that involves developing software in every phase. The goal of SDLC is to provide a cycle of development, regarding all the tasks which involve planning, creating, testing, and citing a software product. In addition, SDLC defines phases such as requirement gathering, designing, coding, testing, and maintenance.The Software Development Life Cycle (SDLC) encompasses various methodologies that guide the process of designing, developing, and maintaining software systems.

The researchers have chosen the Agile Scrum as their methodology. Peek (2022) explained that the Agile Scrum methodology is a way of managing projects by breaking them into small parts called sprints, typically lasting two to four weeks, or even more. In each sprint, the team focuses on building the most important features of the project to create a potentially usable product. Developers then adjust and add more features based on feedback from stakeholders and customers before starting the next sprint. Agile Scrum is a popular approach because it allows for flexibility and collaboration among team members, leading to faster development cycles and the ability to adapt to changing requirements more effectively. Additionally, this approach breaks down the project into smaller increments called sprints, allowing for continuous feedback and adaptation throughout the development process.

**Figure 1**

*Agile Model Scrum Framework*




*Product Backlog Creation.* The researchers collaborated to create a comprehensive list of everything they should include in the project. They gathered suggestions from various individuals who are involved in the project, researched what the user needs, and determined the most important and feasible tasks. After that, they documented these tasks in a list known as the product backlog, ensuring each item was explicitly described for effective planning and execution later.

*Sprint Planning.* The researchers picked certain items from the backlog to work in the coming weeks. They assessed which items were the most important to tackle first, the effort each of them required, and what they could realistically complete during the period. During sprint planning, they also set a goal for the sprint and broke the selected items into smaller tasks.

*Sprint Backlog Creation.* The researchers decide what to work on from the list. They then create a detailed plan known as the sprint backlog. This plane divides the chosen items into smaller tasks in which other researchers of the group are assigned.

*Sprint Execution.* On a daily basis, the researchers will gather briefly to discuss the current status of the project and any emerging challenges. They will collaborate closely to develop and test segments of the project, ensuring they are progressing towards their goal.

*Sprint Review.* The researchers will demonstrate their progress to the stakeholders and seek feedback. They will showcase the developed features and verify if they meet the stakeholders' requirements. Based on the feedback received, they may modify their future plans.

*Sprint Retrospective.* The researchers will hold a sprint retrospective meeting to evaluate their process and pinpoint areas for improvement. They will discuss what was successful during the sprint, what could have been improved, and any challenges faced. In this phase, the researchers will collaborate to identify practical improvements and commit to implementing these changes.

The scrum master and the team have communicated with the client to understand the problems and requirements of the proposed system The researchers created a detailed description of the system and its requirements, along with user stories that will be collected as the product backlog (see Table 1), which consists of all the features and functionalities the product has.

**Table 1**

*Product Backlog*

| Item # | As a/an… | I want to… | So that… | Priority |
|---|---|---|---|---|
| **1** | Student | Create an account | I can use the application and its features | Must |
| **2** | Student | Login and logout my account | I can access the features and services of the application | Must |
| **3** | Student | To change my password | I can modify and have control over my account | Must |
| **4** | Student | Submit capstone requirements | It can be received and checked by the capstone coordinators and panelists | Must |
| **5** | Student | Update submitted capstone requirements | I can make revisions and modifications on our capstone requirements | Must |
| **6** | Student | To view the format of the capstone requirements | I can be well informed to about how our capstone requirements should be like | Must |
| **7** | Student | Receive updates and feedbacks about our capstone requirements | I can be notified and reflect on the progress of our requirements | Must |
| **8** | Student | Create title evaluations proposal | I can allow the panelists to select one of the three capstone titles to use in our project | Must |
| **9** | Faculty | Manage sections, students and capstone groups as a capstone coordinator | I can coordinate their capstone subject from start up until their capstone defense | Must |
| **10** | Faculty | View the submitted capstone requirements as a capstone coordinator | I can view the submitted requirements of capstone groups on a certain section I am assigned to as capstone coordinator | Must |
| **13** | Faculty | View the submitted capstone requirements as a capstone panelist | I can view the submitted requirements of capstone groups I am assigned to as capstone panelist | Should |

| | | | | |
|---|---|---|---|---|
| **14** | Faculty | Assign other faculty members as a panelist | I can make the necessary decision who are the proper capstone panelists on a certain capstone group | Must |
| **15** | Faculty | Provide Verdict on Capstone Defense | I can approve, ask for revisions on the capstone project or reject it | Must |
| **16** | Faculty | View the submitted capstone requirements as a capstone adviser | I can view the submitted requirements of capstone groups I am assigned to as capstone adviser | Should |
| **17** | Administrator | Manage the accounts of students and faculty | I can update their account details and access if and when necessary | Must |
| **18** | Admin | Archive the accounts of faculty members and students | I can have backups and manage sensitive data of accounts | Could |
| **19** | Super Administrator | Grant and revoke administrator access privileges when necessary | So that I can make selected faculty members into an administrator and revoke those who are stepping down from the role | Must |
| **20** | Super Administrator | Transfer super administrator privileges to another administrator when necessary | So that as the current super administrator I can transfer the privileges of it to the newly appointed and trusted super administrator | Should |

**Requirements Analysis and Documentation**

In this section, the researchers discussed the user and system requirements. These processes involve gathering and examining the requirements that are relevant and necessary for the to function properly as will be intended. A thorough analysis of the requirements was conducted in order to ensure that the system can meet the needs and requirements of its users to perform efficiently and effectively as intended.

## System/Technical Requirements

To ensure that the system functions properly, the hardware and software must meet certain criteria. The development of the system requires specific coding and program development requirements, which can impact the performance of the system. By carefully considering these requirements and ensuring that they are met, the researchers can develop a system that is able to function efficiently and effectively. Conducting a thorough analysis of the system requirements can help to identify and minimize any potential problems that may arise during the development process of the system.

## Software and Hardware Requirements for End User

Table 1 shows the software required for the Capstone Document Tracker and Records Organizer System for the end users. In terms of computer requirements, both including desktop and laptop computers. The minimum processor is an Intel Pentium or AMD Athlon with 4 Gigabytes (GB) of Random Access Memory (RAM) and 128 Gigabytes (GB) of storage, with a resolution of 1280x720 and a system type of 32-bit. The researchers recommend a processor of Intel Core i3 or AMD Ryzen 3 with an 8 Gigabytes (GB) of Random Access Memory (RAM) and 256 Gigabytes (GB) of storage, with a resolution of 1920x1080, and a system type of 64-bit.

**Table 1**

*Desktop Requirements*

| Category | Minimum | Recommended |
|---|---|---|
| Processor | Intel Pentium / AMD Athlon | Intel Core i3 / AMD Ryzen 3 |
| Random Access Memory (RAM) | 4 GB | 8 GB or higher |
| Storage | 128 GB | 256 GB or higher |
| Resolution | 1280x720 | 1920x1080 |
| System Type | 32-bit | 64-bit |

**Software and Hardware Requirements for Developers**

Table 2 shows the requirements for the developers to create the Capstone Document Tracker and Records Organizer System, the minimum processor would be an Intel Core i3 or AMD Ryzen 3 with 8 Gigabytes (GB) of Random Access Memory (RAM), 256 Gigabyte (GB) of storage, and a resolution of 1920x1080. Meanwhile, the recommended hardware includes an Intel Core i5 or AMD Ryzen 5 processor with 8 Gigabytes (GB) of Random Access Memory (RAM), 512 Gigabytes (GB) of storage, and a resolution of 1920x1080. Regarding the software, it would require the use of Windows 10 or Windows 11 operating system, a system type of 32-bit or 64-bit, and Visual Studio for the Integrated development environment (IDE) and Visual Studio Code for the text editor.

**Table 2**

*Hardware Requirements*

| Category | Minimum | Recommended |
|---|---|---|

| | | |
|---|---|---|
| Processor | Intel Core i3 / AMD Ryzen 3 | Intel Core i5 / AMD Ryzen 5 |
| Random Access Memory (RAM) | 8 GB | 16 GB or higher |
| Storage | 256 GB | 512 GB or higher |
| Resolution | 1920x1080 | 1920x1080 |

Table 3 depicts the software requirements for the developers to create the system, using an operating system of Windows 10 or 11, with a system type of 64-bit or 32-bit and using Visual Studio as the integrated development environment (IDE) while Visual Studio Code for the text editor.

**Table 3**

*Software Requirements*

| | |
|---|---|
| **Operating System** | Windows 10 / Windows 11 |
| **System Type** | 64-bit / 32-bit |
| **Integrated development environment (IDE) / Text Editor** | Visual Studio / Visual Studio Code |

Table 4 depicts that in terms of operation, users require a reliable internet connection specifically for accessing the system through the web-based platforms. In addition, the researchers need a secure location to store the system's data and enough storage to keep everything running properly as intended. It is important to keep the data

safe and secure from any threats, thus regular backups and security measures are a must. Lastly, the researchers will provide support and guidance for users to understand and use the system effectively.

**Table 4**

*Operational Requirements*

| **Operation** | **Minimum** | **Recommended** |
|---|---|---|
| Internet Connectivity | Stable internet connection | High-speed internet connection |
| System Maintenance | Occasional backup and updates | Regular backup and updates |
| User Support | Basic user guides | Live technical support |

**Design of Software, Systems, Product, and/or Processes**

Figures 2 - 12.31 present the diagrams used within the study. These diagrams were developed during the design phase of the software development methodology. The diagrams included and used in this study are context diagrams (level 0 data flow diagram), level 1 data flow diagram, enhanced entity-relationship diagram, flowcharts, use case, and visual table of contents.

Figure 2 depicts the interaction between external entities and the system. The context diagram serves the purpose of presenting a simplified version of the graphical representation of the system, which showcases its input, out and the entities that are

engaged with it. The diagram adheres to the principles of the Gane and Sarson notation, a structured systems analysis and design methodology. The external entities engaged are represented as squares, the system itself is positioned at the center as a process, and multiple arrows indicate the flow of data of information between the system itself and the engaged external entities.

**Figure 2**

*Context Diagram*

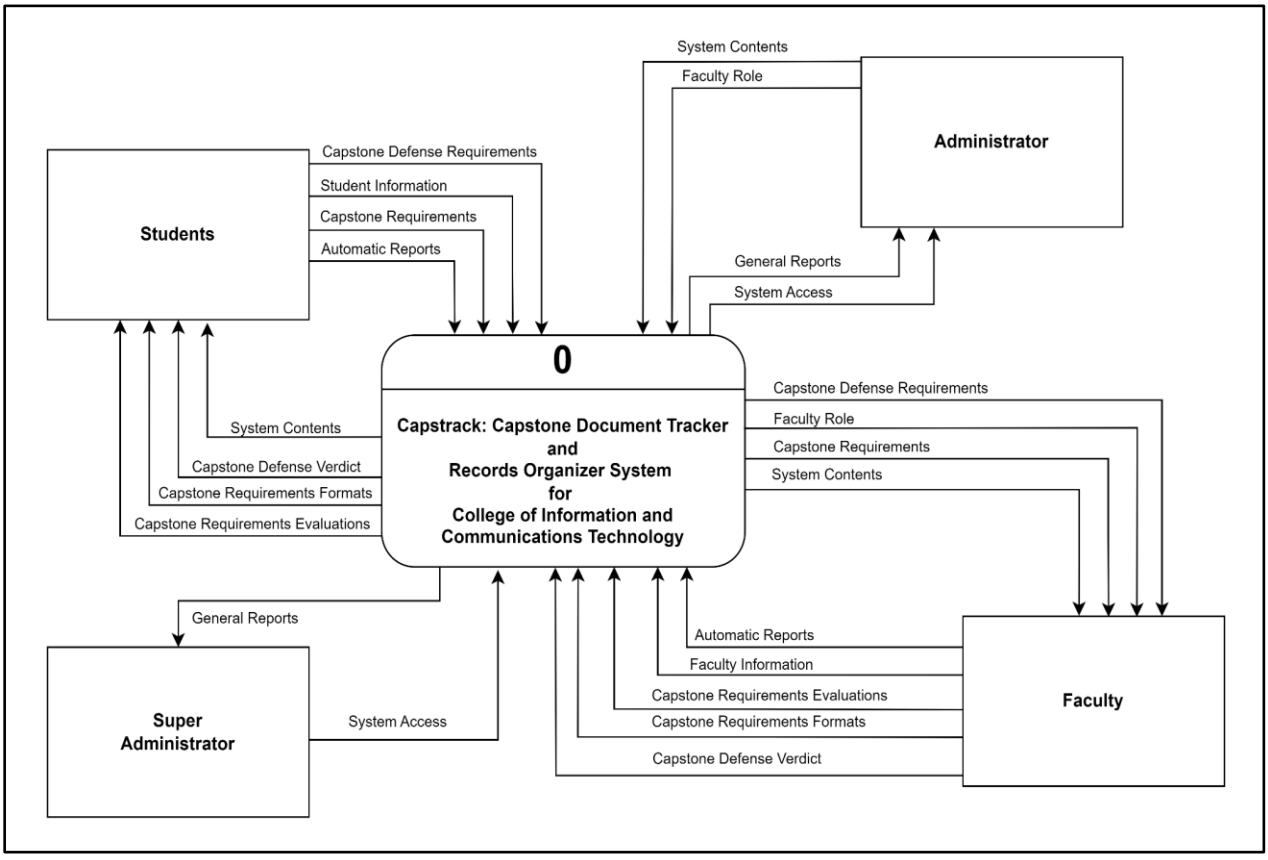


Figure 3, the data flow diagram level 1, provides more detailed views of a system or process compared to level 0 (context diagrams). It outlines the primary functions of the system and narrows it down into smaller subprocesses, which gives a closer look to how the system works.

**Figure 3**

*Data Flow Diagram Level 1*

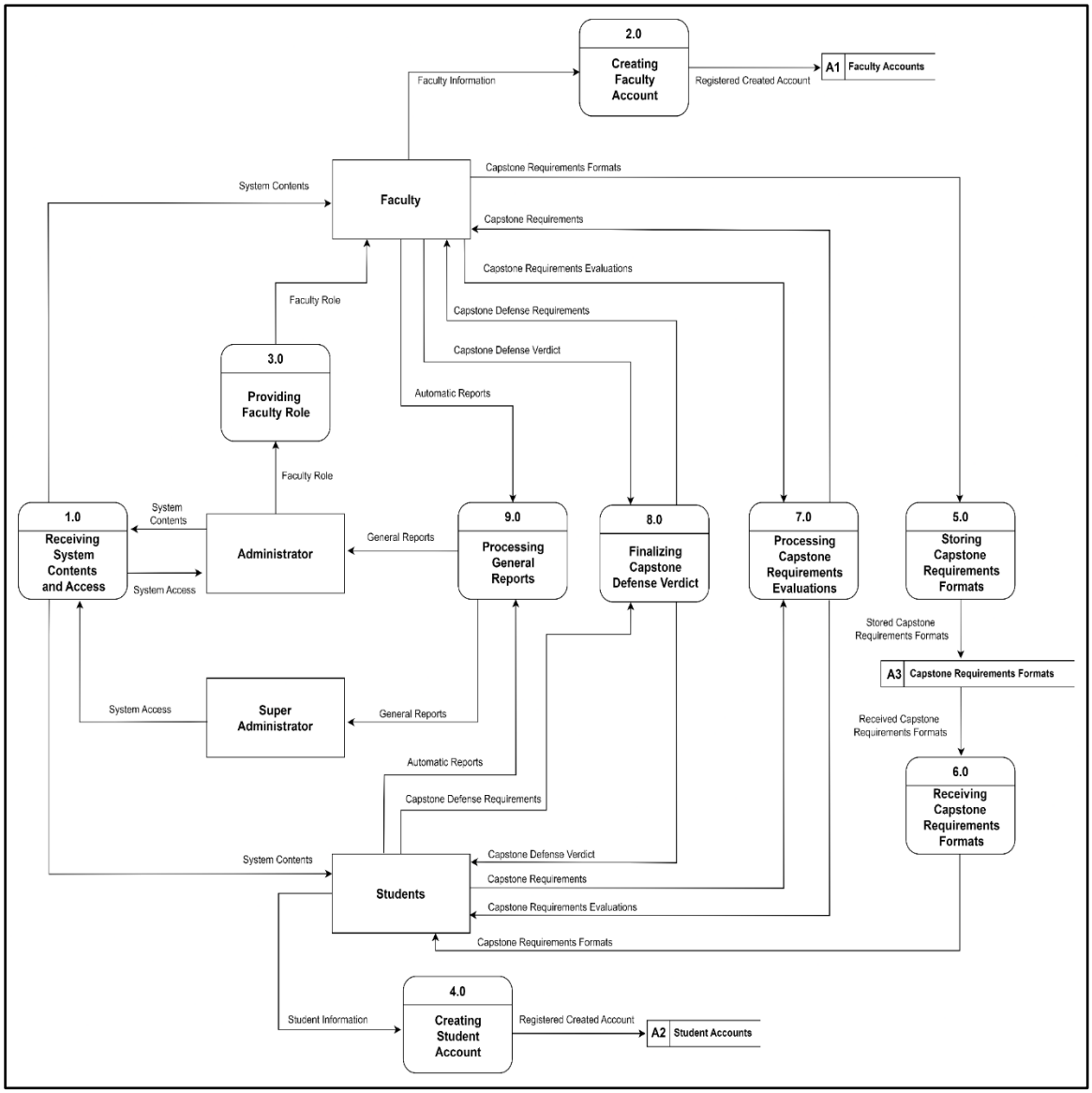


Figure 4 is the visual representation of the entities and their relationships with each other in the system. It provides a structured overview of how different components of the system interact with each other and the external environment. The relationships between the entities are represented using lines and symbols called crow's feet, and each entity and relationship has their own name and label to provide a clear representation of each component.

**Figure 4**

*Entity Relationship Diagram*

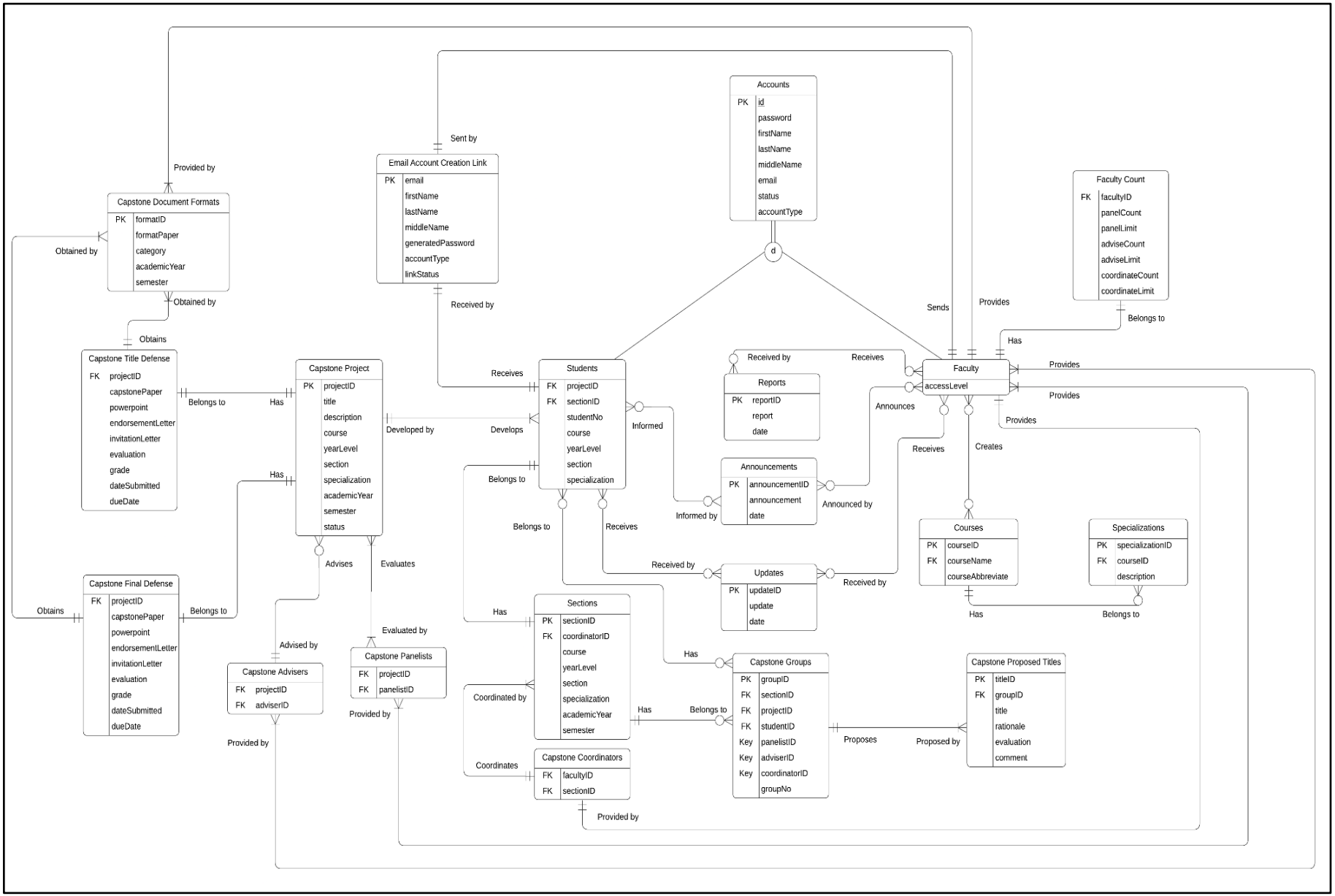
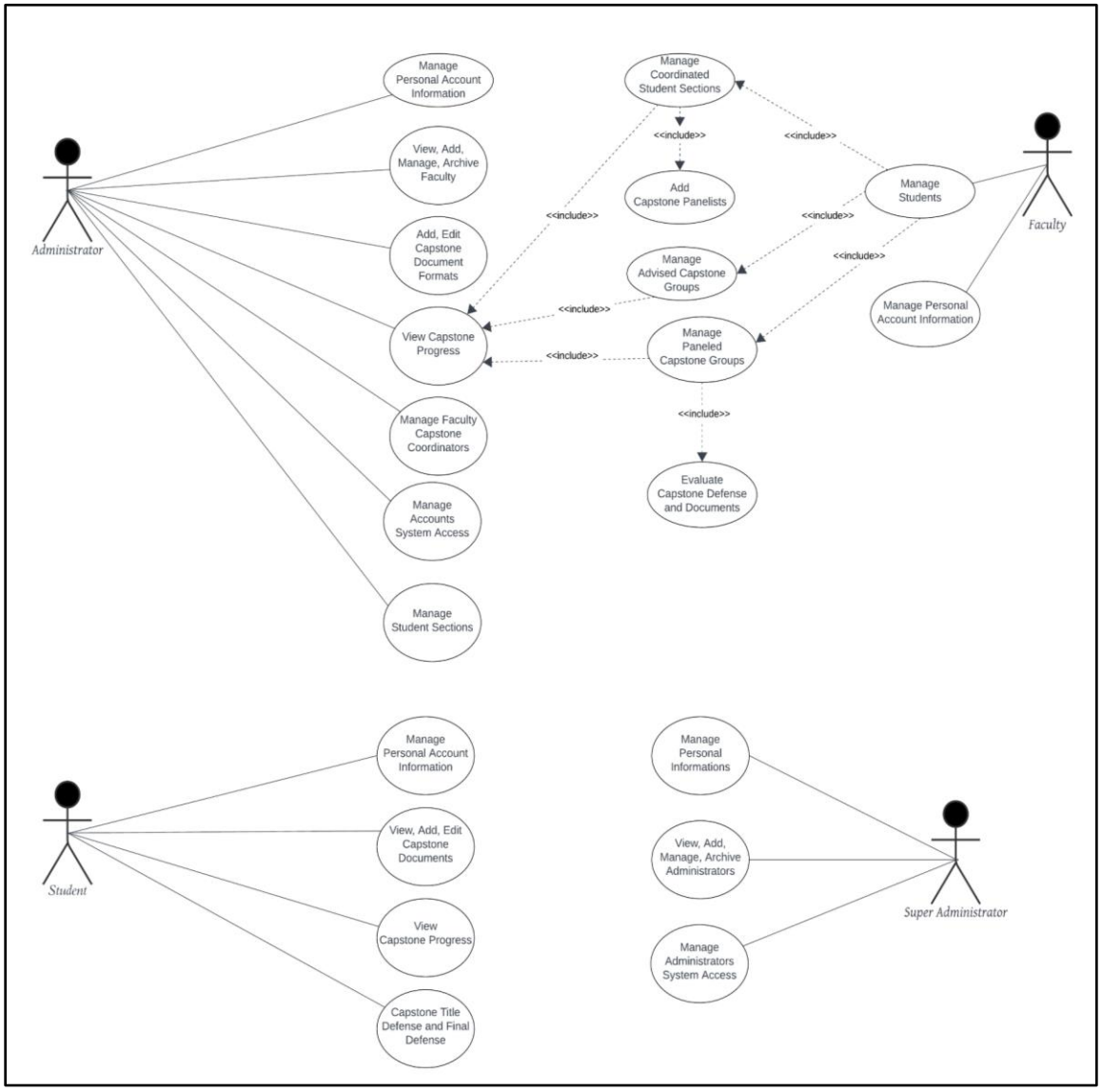

Accounts
PK id
password
firstName
lastName
middleName
email
status
accountType
d
Sent by
Email Account Creation Link
PK email
firstName
lastName
middleName
generatedPassword
accountType
linkStatus
Received by
Provided by
Capstone Document Formats
PK formatID
formatPaper
category
academicYear
semester
Obtained by
Obtained by
Obtains
Capstone Title Defense
FK projectID
capstonePaper
powerpoint
endorsementLetter
invitationLetter
evaluation
grade
dateSubmitted
dueDate
Belongs to
Has
Capstone Project
PK projectID
title
description
course
yearLevel
section
specialization
academicYear
semester
status
Developed by
Develops
Receives
Students
FK projectID
FK sectionID
studentNo
course
yearLevel
section
specialization
Informed
Sends
Provides
Faculty Count
FK facultyID
panelCount
panelLimit
adviseCount
adviseLimit
coordinateCount
coordinateLimit
Belongs to
Has
Provides
Faculty
accessLevel
Provides
Provides
Received by
Receives
Reports
PK reportID
report
date
Announces
Receives
Creates
Announcements
PK announcementID
announcement
date
Informed by
Announced by
Belongs to
Belongs to
Receives
Courses
PK courseID
FK courseName
courseAbbreviate
Specializations
PK specializationID
FK courseID
description
Has
Belongs to
Received by
Updates
PK updateID
update
date
Received by
Has
Sections
PK sectionID
FK coordinatorID
course
yearLevel
section
specialization
academicYear
semester
Has
Capstone Groups
PK groupID
FK sectionID
FK projectID
FK studentID
Key panelistID
Key adviserID
Key coordinatorID
groupNo
Capstone Proposed Titles
PK titleID
FK groupID
title
rationale
evaluation
comment
Proposes
Proposed by
Coordinated by
Has
Belongs to
Coordinates
Capstone Coordinators
FK facultyID
FK sectionID
Provided by
Obtains
Capstone Final Defense
FK projectID
capstonePaper
powerpoint
endorsementLetter
invitationLetter
evaluation
grade
dateSubmitted
dueDate
Belongs to
Has
Advises
Evaluates
Advised by
Capstone Advisers
FK projectID
FK adviserID
Provided by
Evaluated by
Capstone Panelists
FK projectID
FK panelistID
Provided by

Figure 5 is the use case diagram of this study, it represents the interaction between users and the system. It depicts various system functionalities that each user can utilize. The system users (student, administrator, and faculty) are represented by stick figures in this diagram, and the functionalities are represented by ovals, with arrows indicating the relationship between the users and functionalities.

**Figure 5**

*Use Case Diagram*



## Visual Table of Contents

Figures 6 - 9 depicts the different components of the system as well as an overview of the system's content and structure.

Figure 6 depicts the content the users will see on the landing page of the website.

**Figure 6**

*Landing Page Visual Table of Contents*

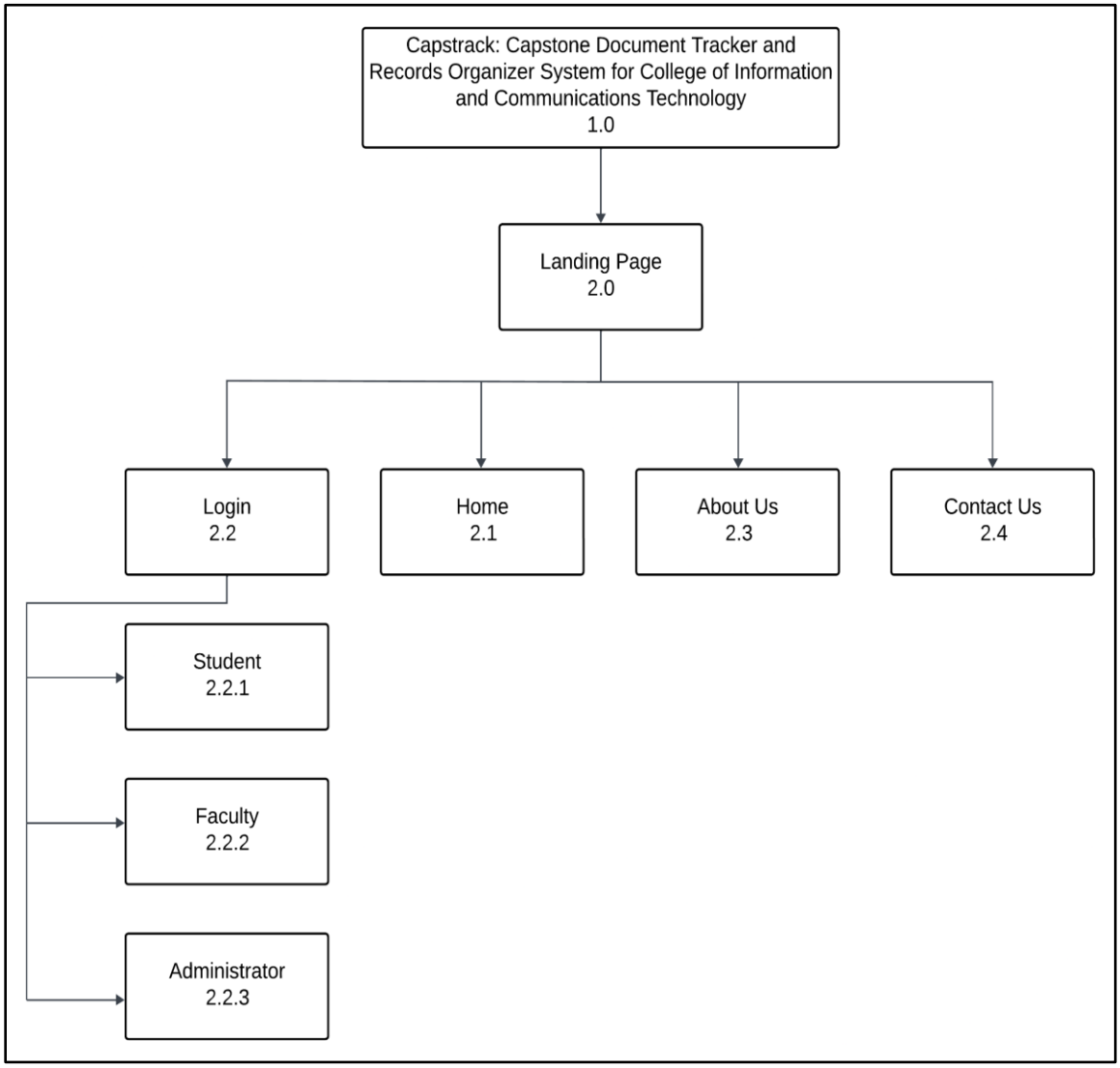


Figure 7 depicts the contents the administrator will see upon using the website.

**Figure 7**

*Administrator Home Page Visual Table of Contents*

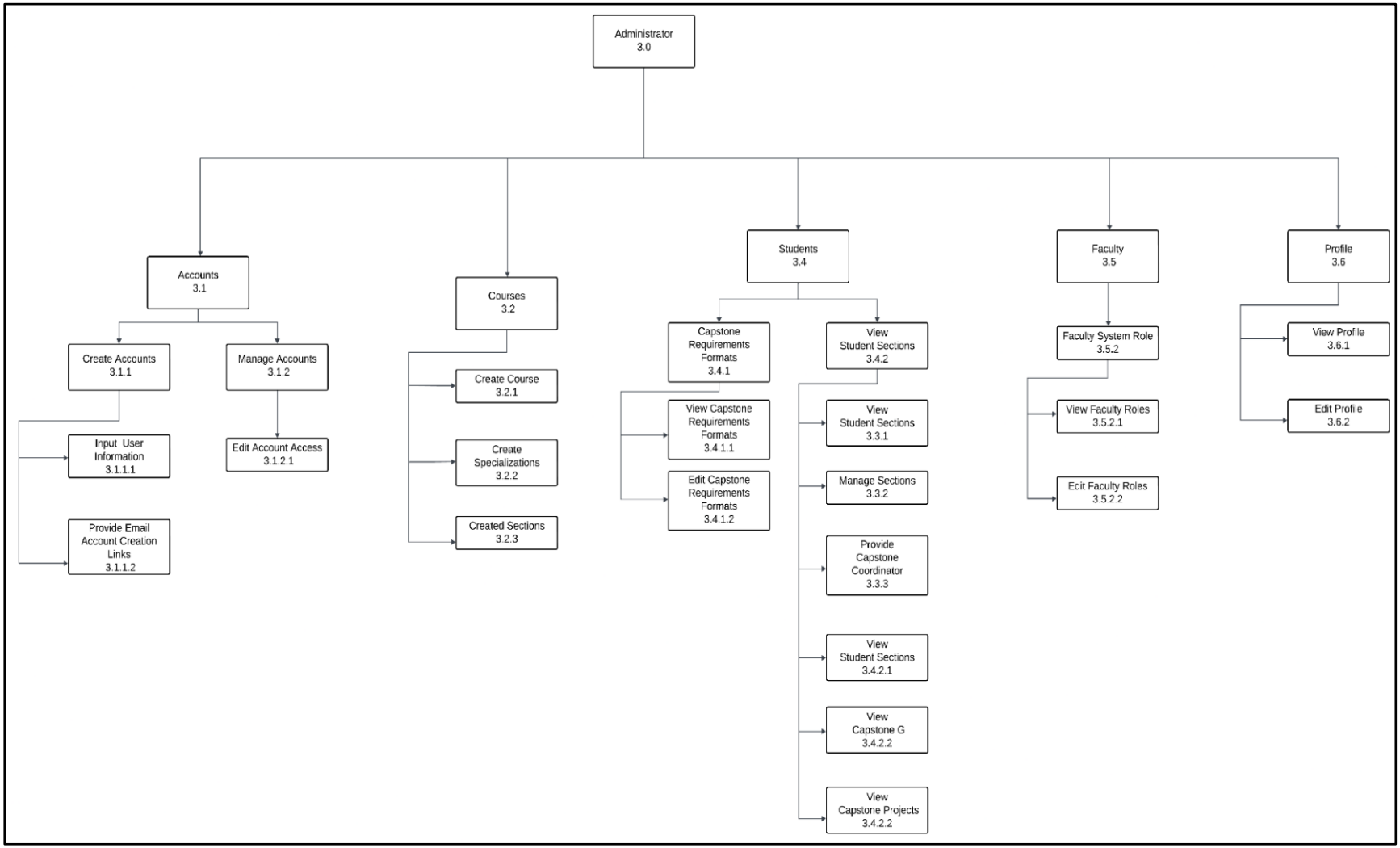

Administrator
3.0
Accounts
3.1
Create Accounts
3.1.1
Input User Information
3.1.1.1
Provide Email Account Creation Links
3.1.1.2
Manage Accounts
3.1.2
Edit Account Access
3.1.2.1
Courses
3.2
Create Course
3.2.1
Create Specializations
3.2.2
Created Sections
3.2.3
Students
3.4
Capstone Requirements Formats
3.4.1
View Capstone Requirements Formats
3.4.1.1
Edit Capstone Requirements Formats
3.4.1.2
View Student Sections
3.4.2
View Student Sections
3.3.1
Manage Sections
3.3.2
Provide Capstone Coordinator
3.3.3
View Student Sections
3.4.2.1
View Capstone G
3.4.2.2
View Capstone Projects
3.4.2.2
Faculty
3.5
Faculty System Role
3.5.2
View Faculty Roles
3.5.2.1
Edit Faculty Roles
3.5.2.2
Profile
3.6
View Profile
3.6.1
Edit Profile
3.6.2

Figure 8 depicts the contents the faculty will see upon using the website.

**Figure 8**

*Faculty Home Page Visual Table of Contents*

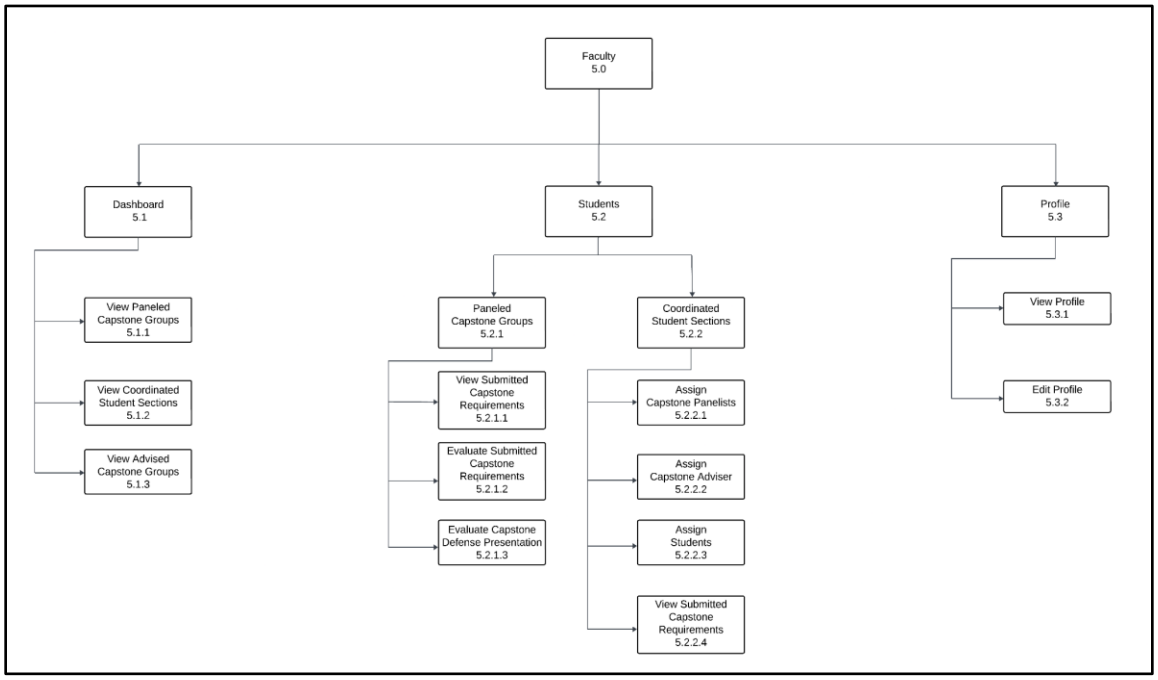



Figure 9 depicts the contents the student will see upon using the website.

**Figure 9**

*Student Home Page Visual Table of Contents*

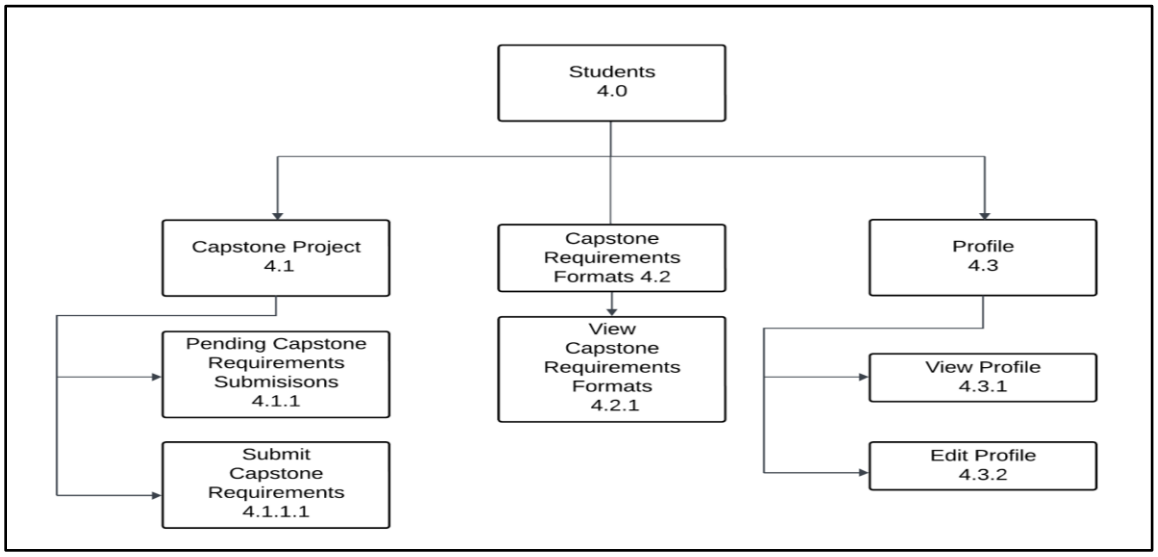
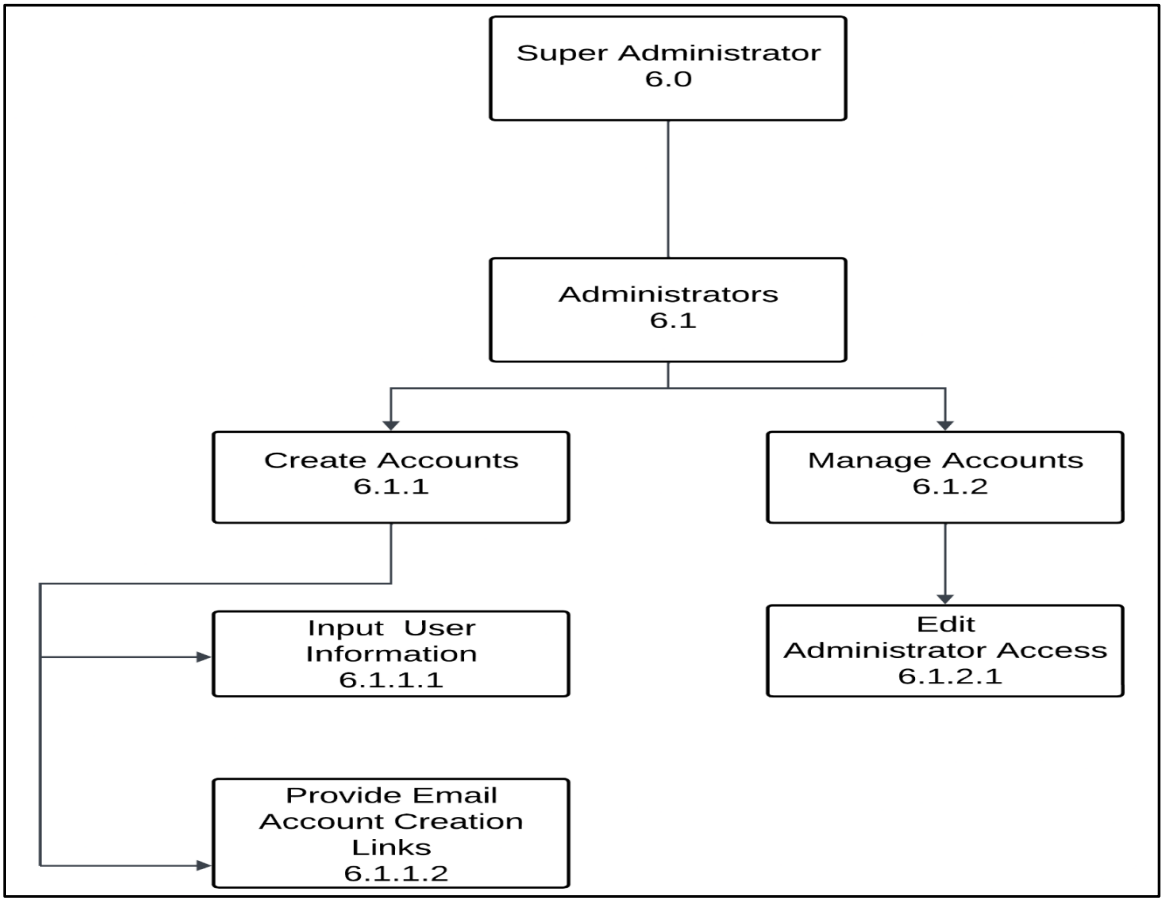


Figure 10 depicts the contents the super administrator will see upon using the website.

**Figure 10**

*Super Administrator Home Page Visual Table of Contents*




**System Flowchart**

Figures 11.1 - 11.11 are flowcharts for a capstone document tracker and records organizer system, it depicts the various steps involved in a capstone document management. The diagram provides help in understanding the capstone document management system's workflow and provides a clear visual representation of the process steps.

Figure 11.1 represents the flow of a user's initial visit to the site. The system will first display the landing page, wherein they can search a specific capstone project progress using a unique tracking number and see its information. Also, users with account activated can access the system by clicking the login button.

**Figure 11.1**

*Landing Page System Flowchart*

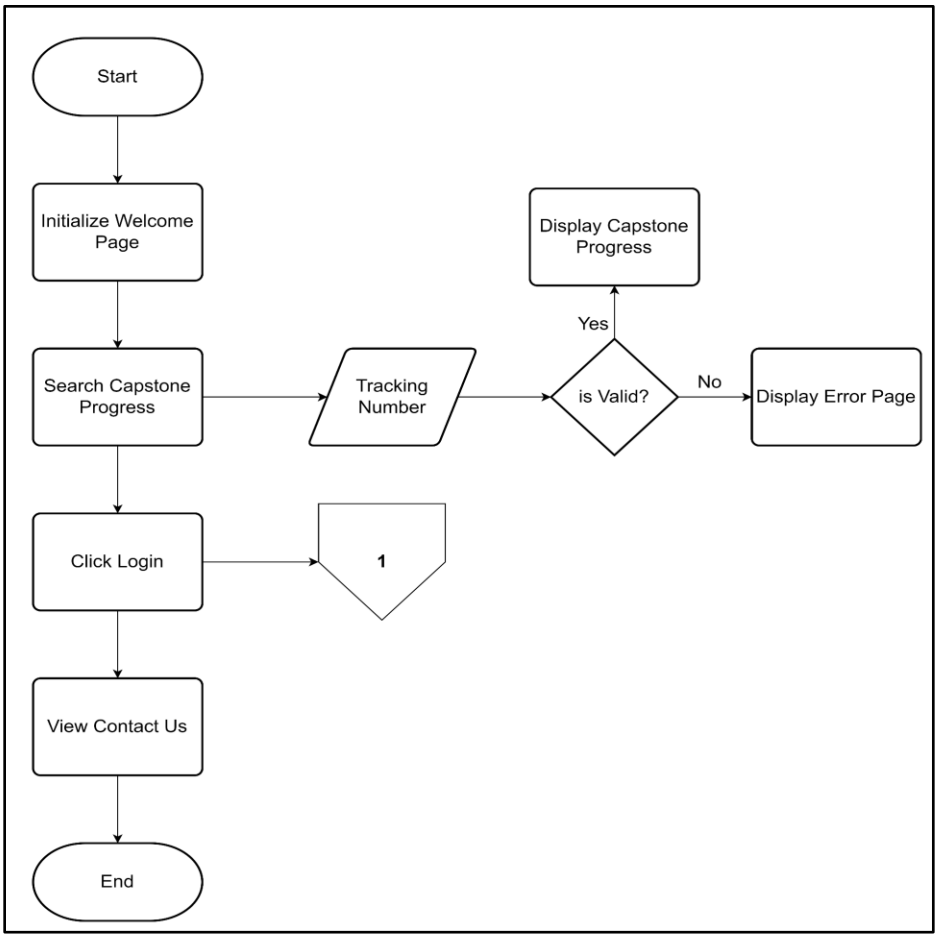


Figure 11.2, if the user already has an account, he or she can login their account. In case the user forgot his/her password, they are transferred into another page where a new password can be created.

**Figure 11.2**

*Login Page System Flowchart*

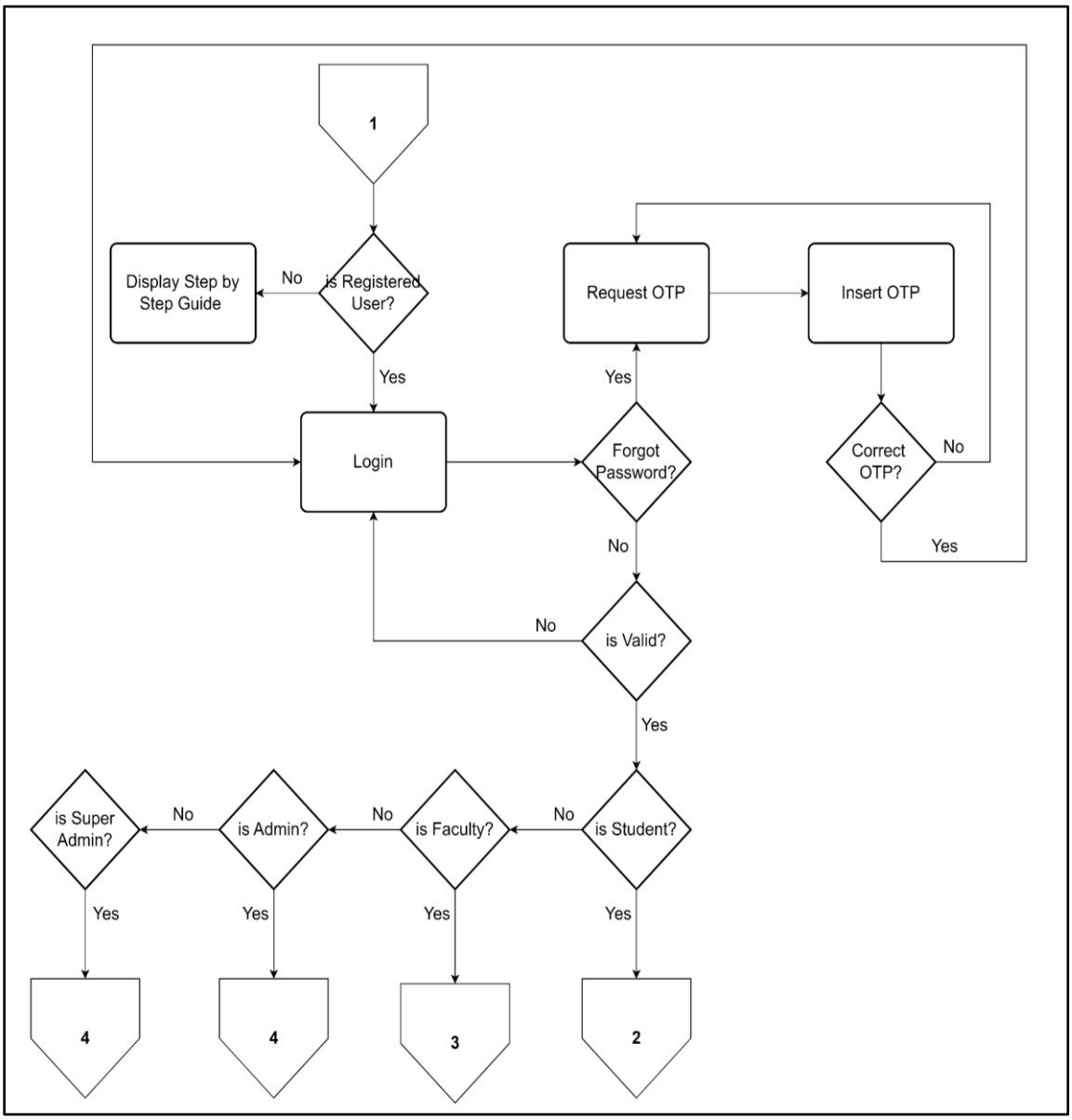


Figure 11.3 depicts the following functionalities a student can do after successfully logging in to the site. The student can submit their capstone documents, edit their profile, view status, the dashboard, and their class.

**Figure 11.3**

*Student Access Page System Flowchart*

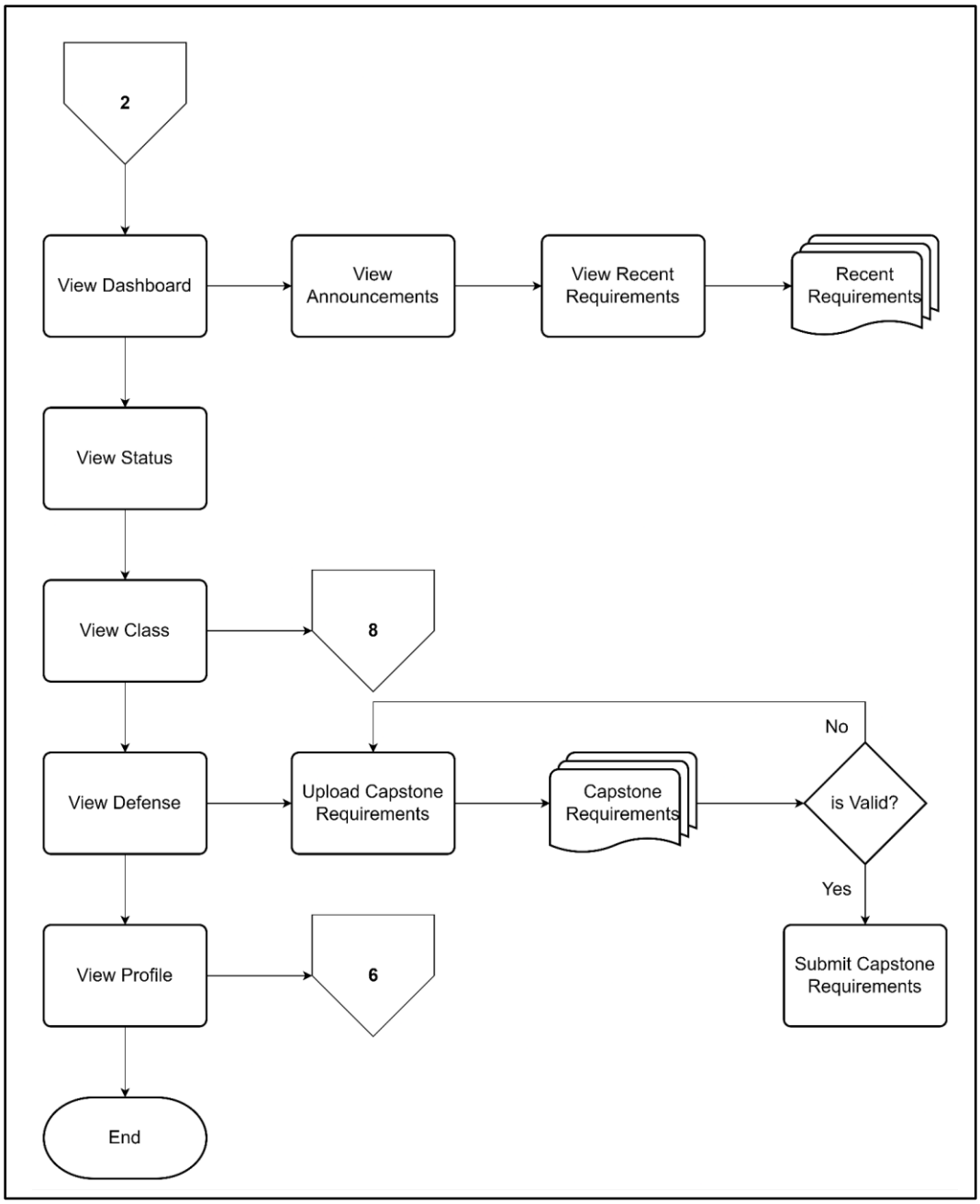


Figure 11.4, if the user is a faculty, he or she will also access the dashboard, status, class and access to profile page. The faculty can view the students' submitted documents and give a verdict.

**Figure 11.4**

*Faculty Access Page System Flowchart*

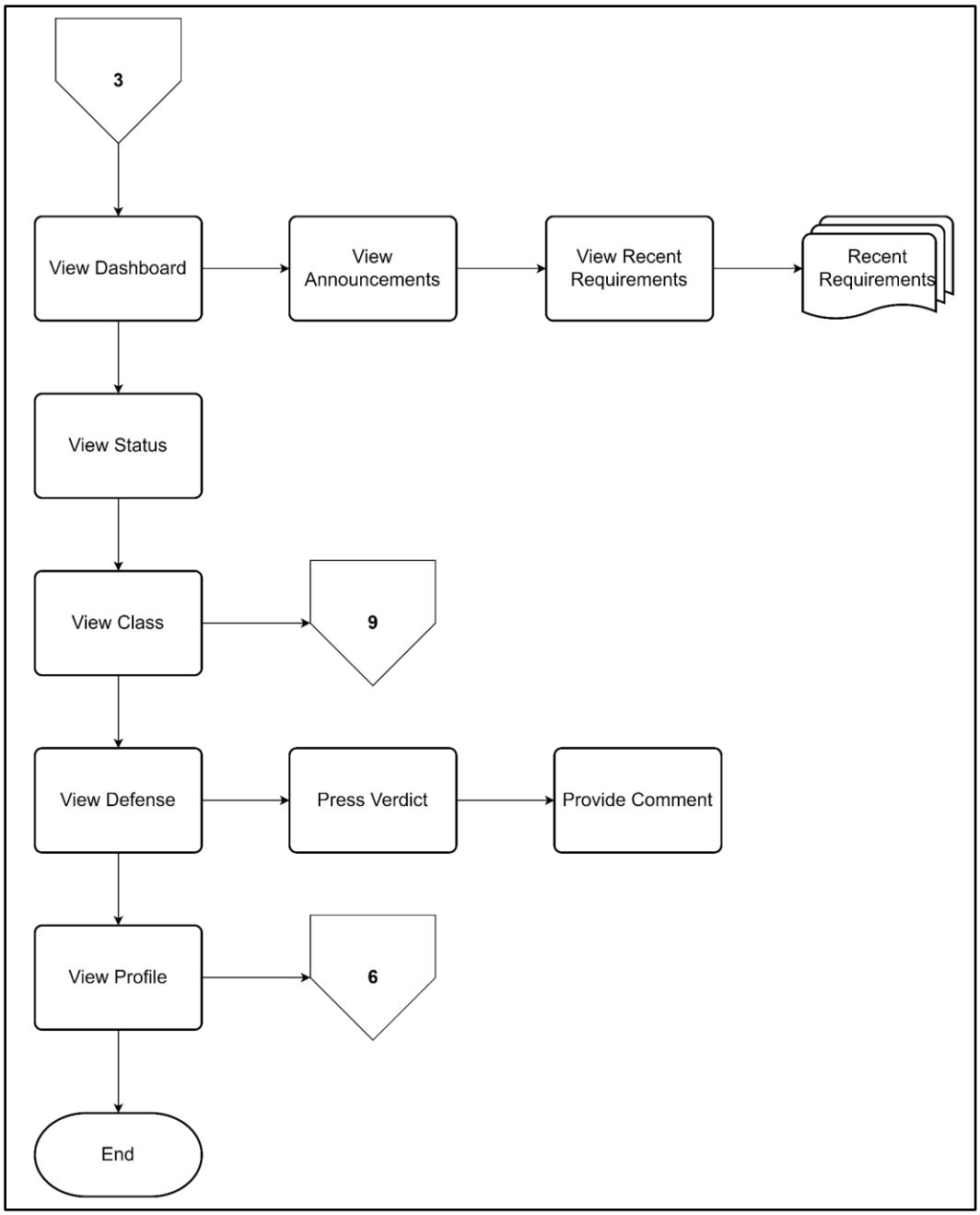


Figure 11.5, if the user has administrator access, he or she can view, create announcements in the dashboard; view status page; view and edit contents in class and defense page; invite students and faculty in the system; and edit their profile in profile page.

**Figure 11.5**

*Administrator Access Page System Flowchart*

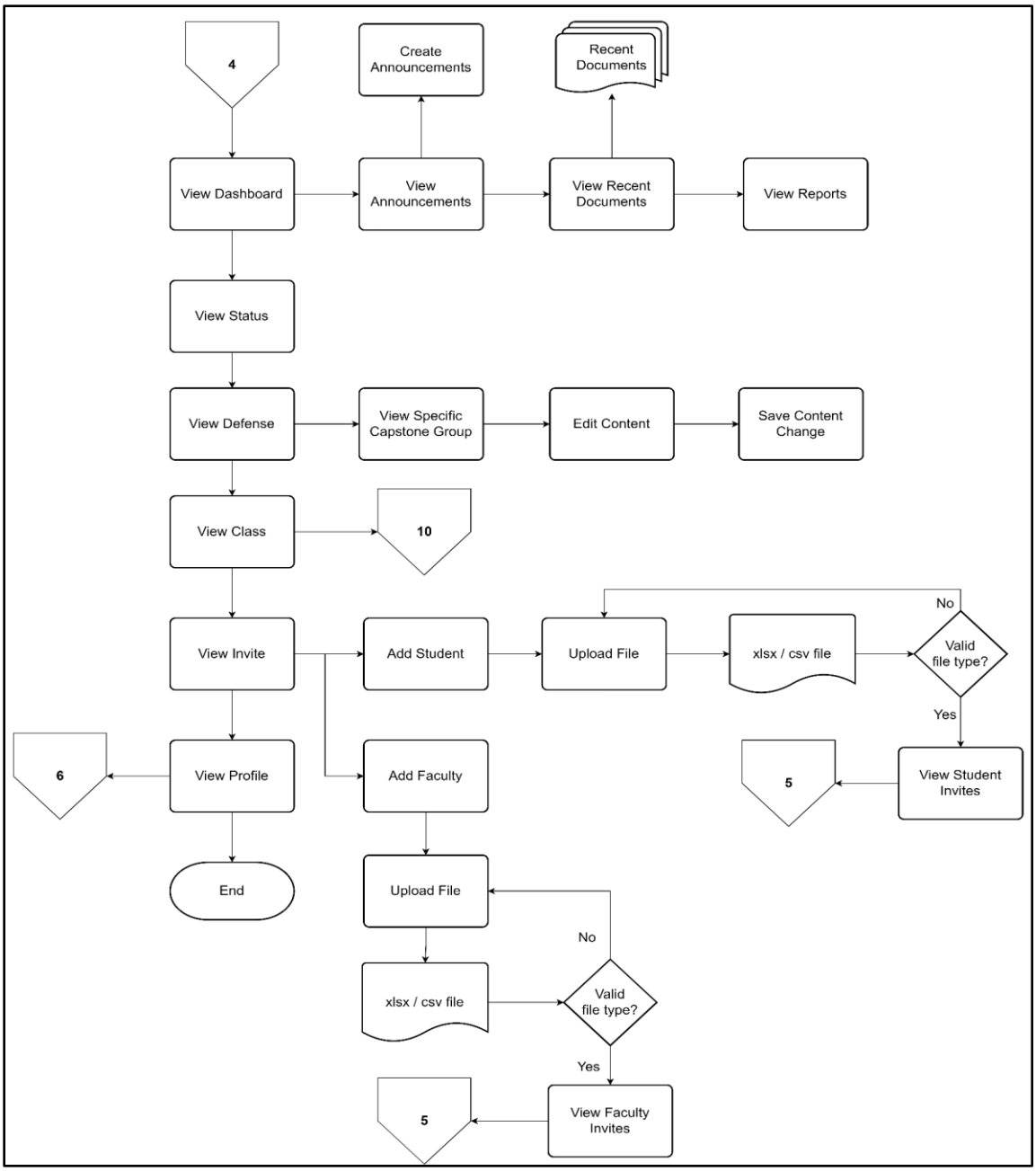


Figure 11.6 represents the view if the user is logged in as a super administrator. The super administrator has the same functionalities and privilege access similar to an administrator, but they can edit account details registered in the system. They can also grant and revoke administrator privileges, and also transfer the super administrator access to another administrator.

**Figure 11.6**

*Super Administrator Access Page System Flowchart*

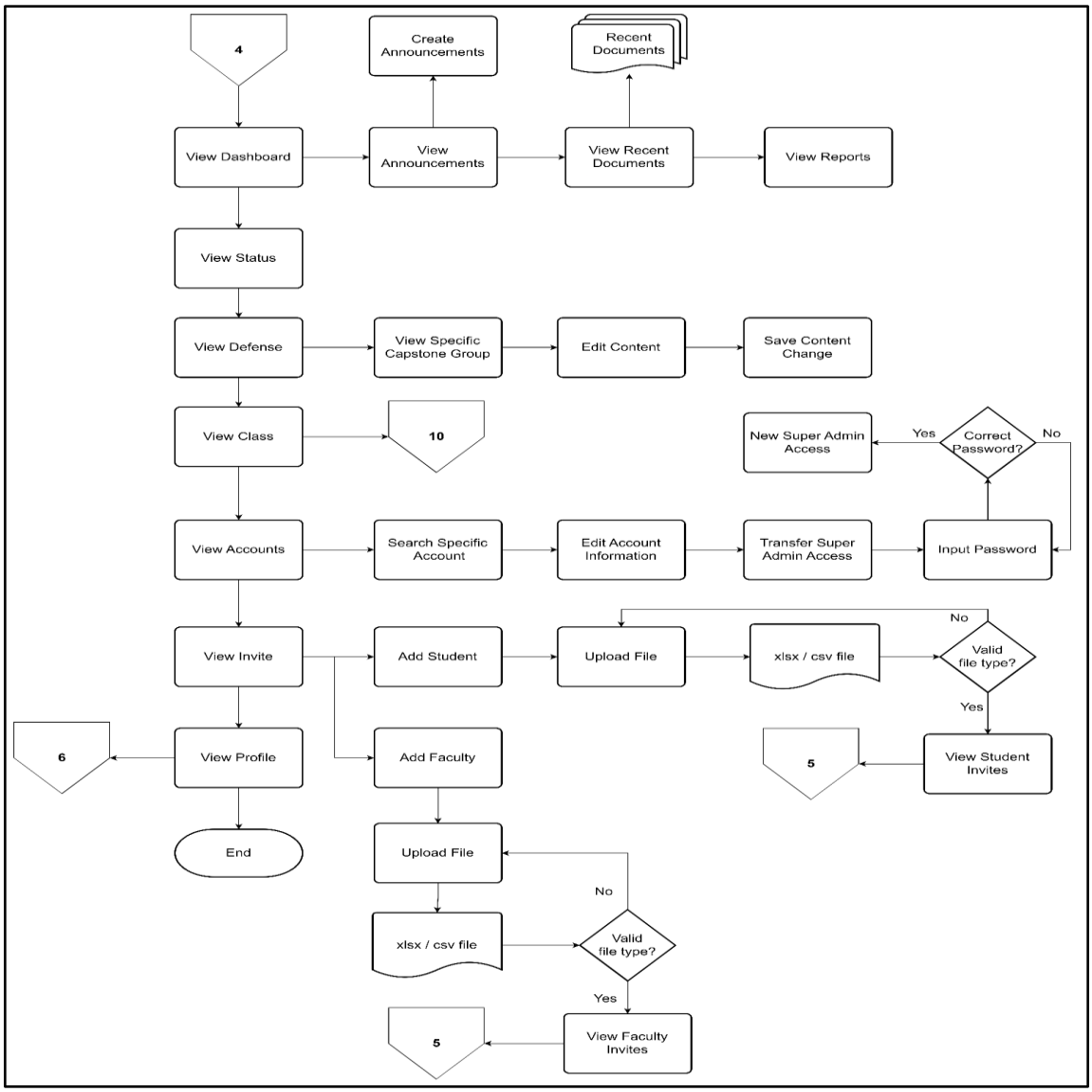


Figure 11.7 depicts the register process when a new user accesses the system.

**Figure 11.7**

*Register Page System Flowchart*

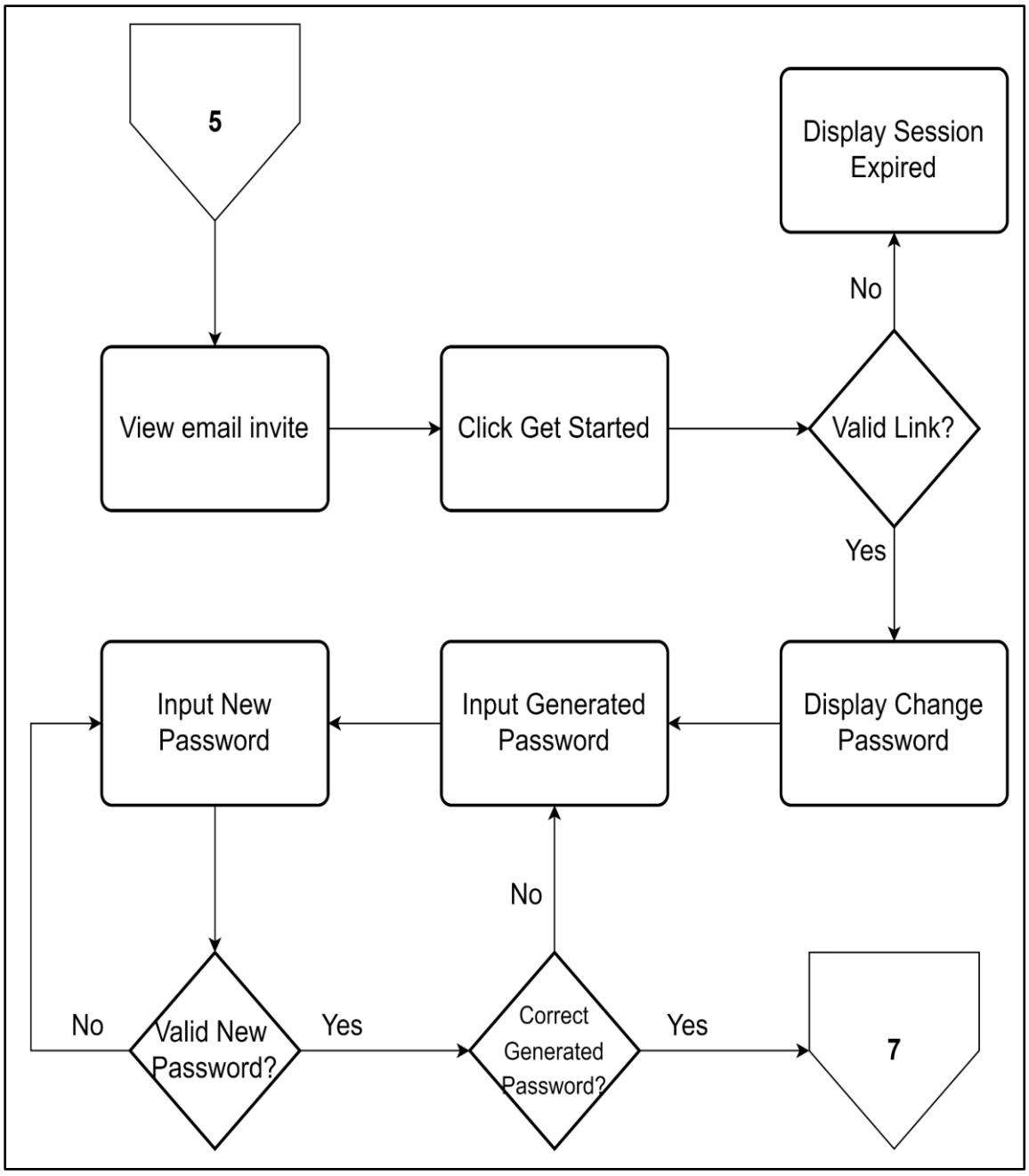


Figure 11.8. This depicts the flow when the profile page is accessed. The user can also change their password inside this page.

**Figure 11.8**

*Student, Faculty, Administrator, Super Administrator Profile Page System Flowchart*

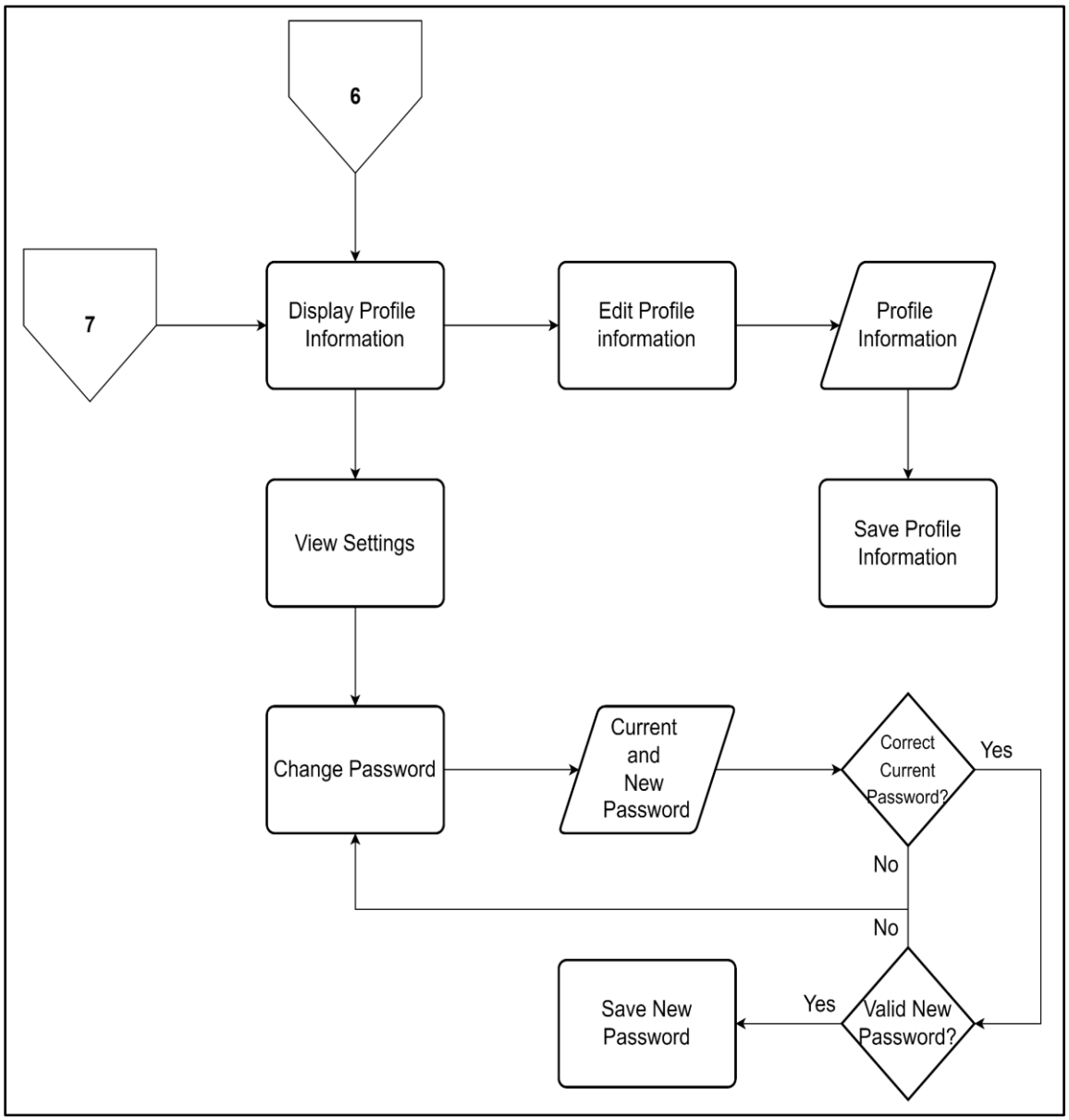
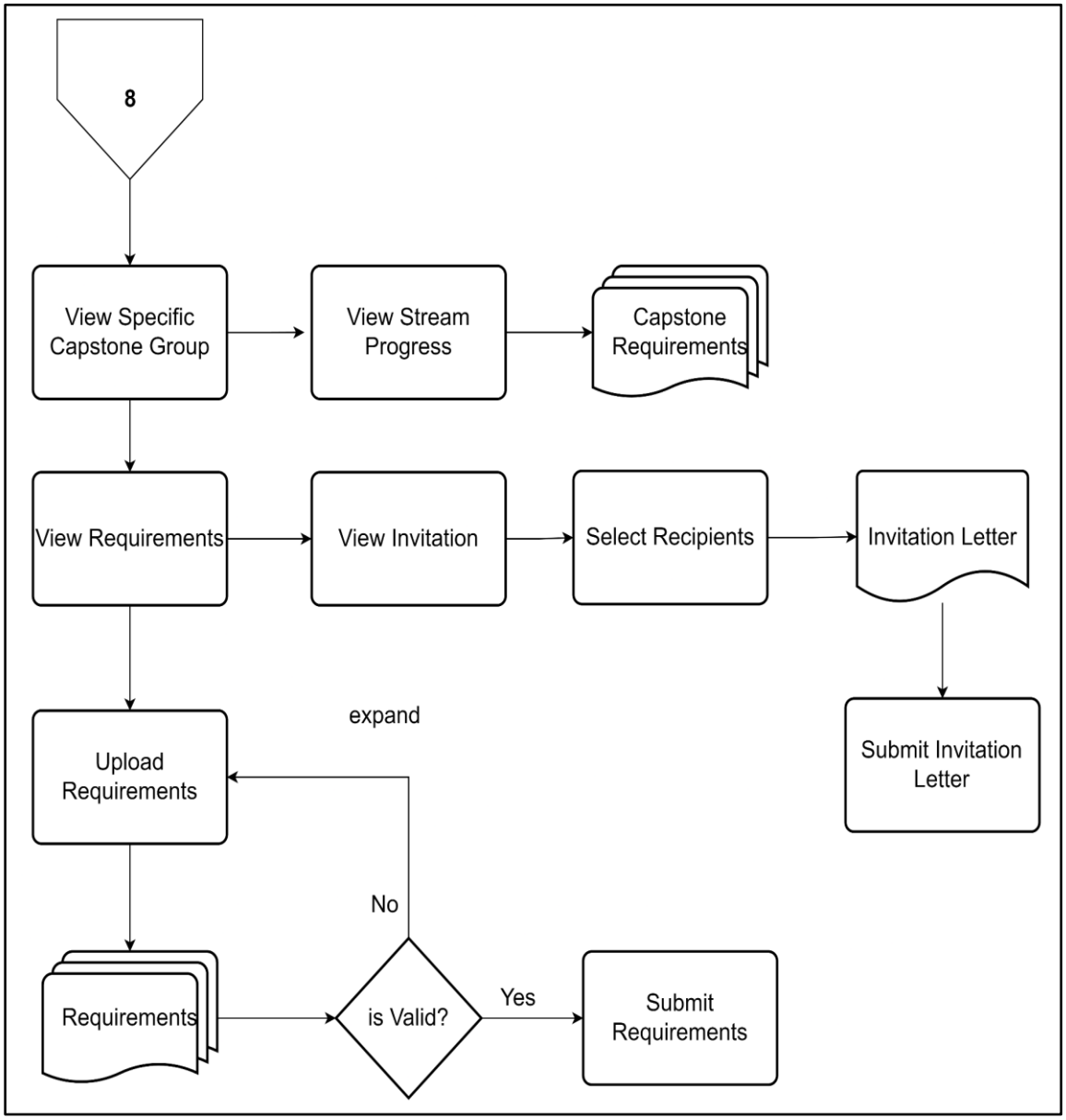


Figure 11.9 displays the process flow when a student accesses the class page. The student can submit their requirements, and view their progress.

**Figure 11.9**

*Student Class Page System Flowchart*



In Figure 11.10, it represents the processes the faculty can do when accessing the class page. If the faculty is a coordinator, they can add students, assign advisers, and panelists in a specific group.

**Figure 11.10**

*Faculty Class Page System Flowchart*

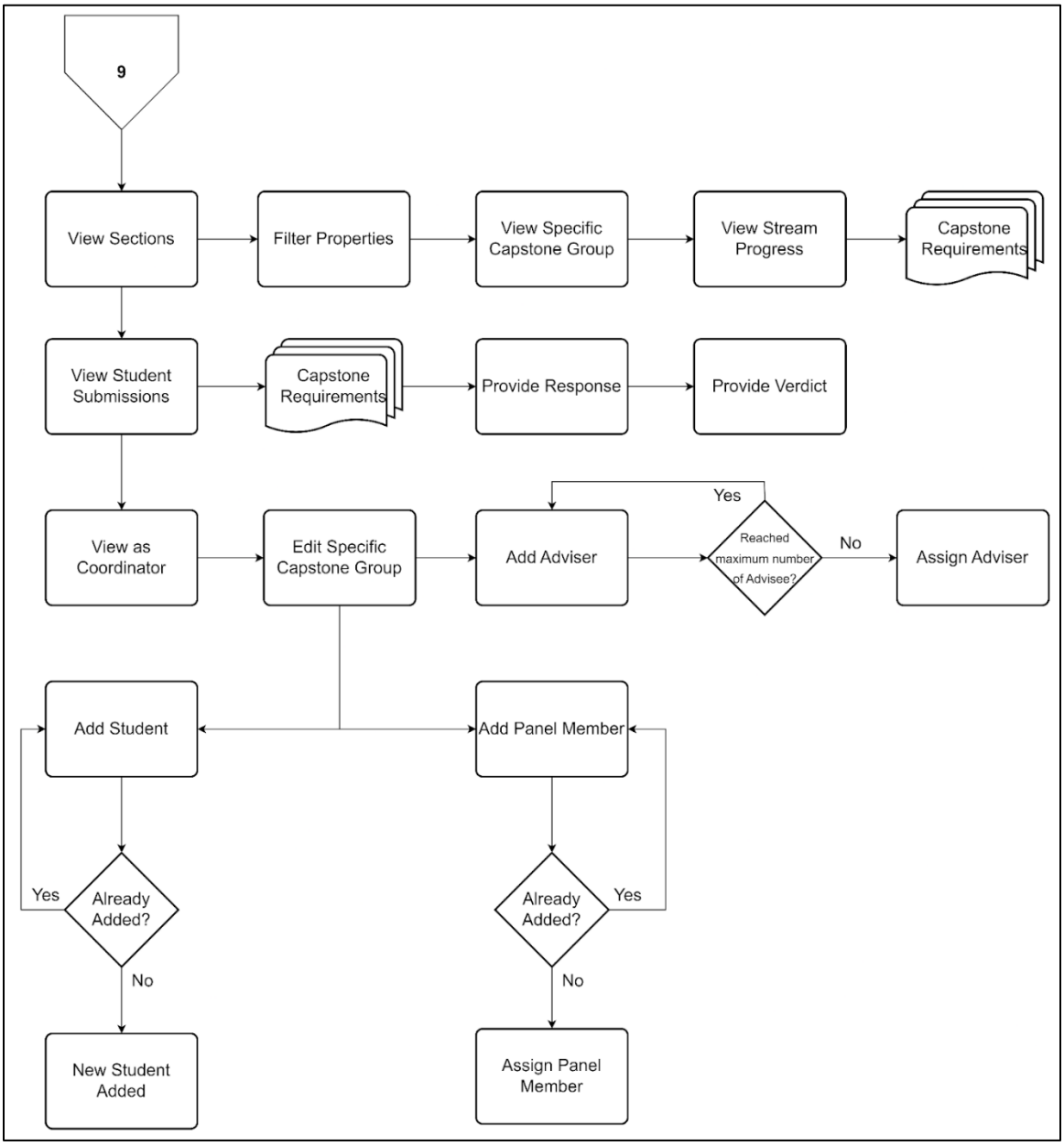
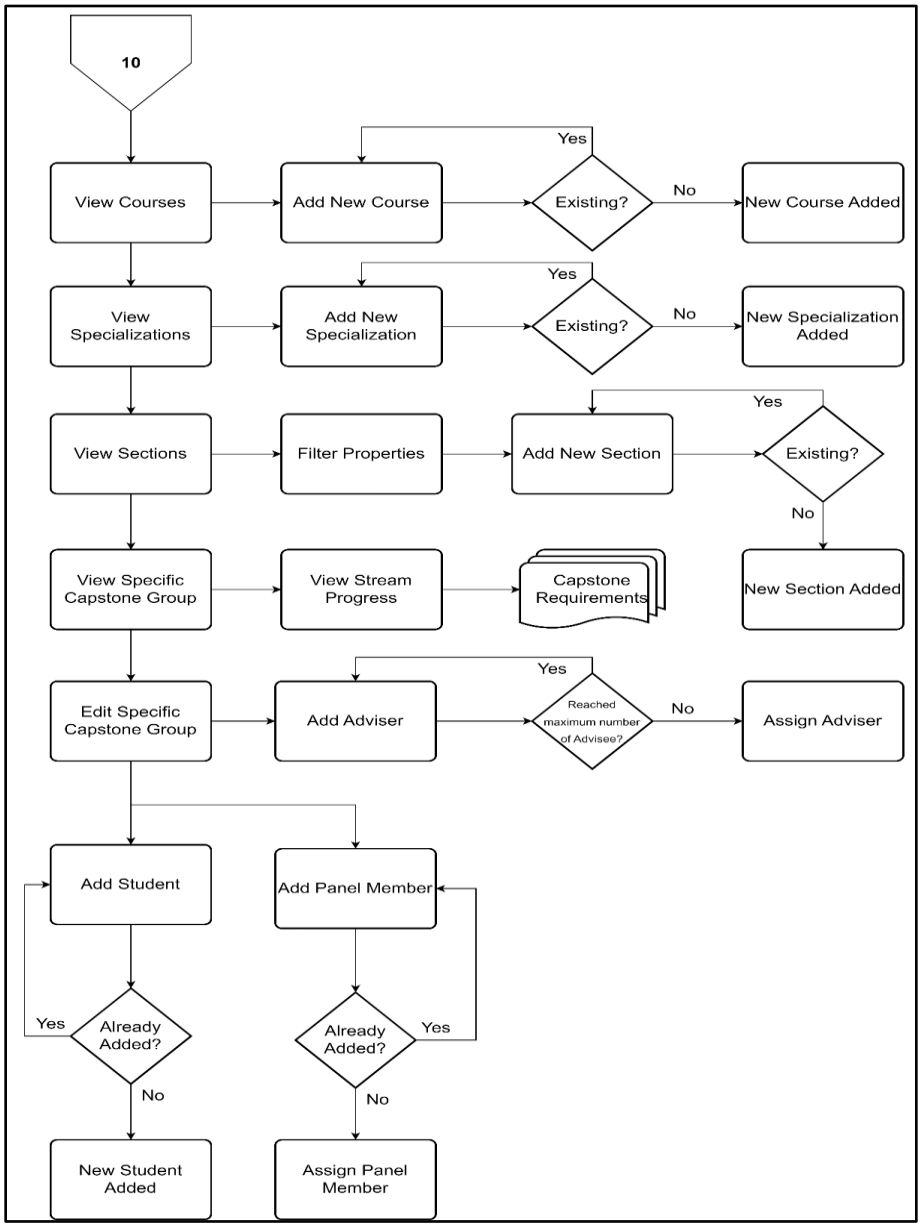


Figure 11.11 depicts the functionalities the super administrator and an administrator can do when accessing the class page. They can add a new course, specialization, and section inside the system. Similar to the faculty, they can also add students, assign advisers, and panelists in a specific group.

**Figure 11.11**

*Super Administrator, Administrator Class Page System Flowchart*



**Testing**

In order to evaluate the system, the researchers will utilize the ISO/IEC 25010:2023 standard, it provides a framework for assessing the software quality characteristics. This standard defines various criteria and characteristics which are essential for evaluating the quality of software systems. This criteria includes the functional suitability, performance, efficiency, compatibility, interaction capability, reliability, security, maintainability, flexibility and safety. Each criteria consists of specific characteristics that will help measure the system's performance in that aspect. User Acceptance Testing (UAT) will be used by the researchers because it involves the client stakeholders assessing the software's suitability for their needs, requirements and user expectations. By involving the clients directly in the testing process, the testing phase will provide valuable feedback to ensure that the final product meets the client's specific needs and requirements. Additionally the researchers will also employ test cases for manual testing of the system, wherein already predefined scenarios and inputs are systematically applied to assess the system's functionality, usability and performance. This detailed testing process will aid in identifying any potential issues, ensuring the reliability and robustness of the system under different scenarios, conditions and situations, which validates its adherence to the specified requirements.

The researchers will also use both blackbox and whitebox testing techniques. Blackbox testing will be used by the researchers to check if the system works correctly from a user's viewpoint. Additionally, this testing will check how the system will respond to different actions, including but not limited to clicking buttons, inputting data, and

receiving outputs. It aids in ensuring that the system does what it is supposed to do without worrying about how it is built and created. Whitebox testing will also be used by the researchers, as the researchers will look inside the system to see how it is built and created. Testing the code itself to find any potential mistakes or problems that can be found within this testing. It will aid in ensuring the system is well-built and does not have any hidden issues.

In terms of sampling technique, the researchers will use purposive sampling, targeting individuals who are directly involved in the system's use and administration: the beneficiaries or the Bulacan State University (BulSU) College of Information and Communications Technology (CICT) - Main Campus Faculty and Students.

Table 5 shows the respondents and their corresponding frequency for the study. The system will be evaluated by a total of 50 respondents which includes 10 Faculty and 40 Students of Bulacan State University (BulSU) College of Information and Communications Technology (CICT) - Main Campus.

**Table 5**

*Respondents of the Study*

| Respondents | Frequency (N) | Percentage (%) |
|---|---|---|
| 1.BulSU CICT Faculty | 10 | 20% |
| 2. BulSU CICT Students | 40 | 80% |
| **Total** | **50** | **100%** |

To assess the acceptability of the system, the researchers will use the ISO/IEC 25010:2023 Software Quality and Acceptance Model that is computed using the five-point Likert-type Scale. The researchers will analyze the data that will be obtained using such a scale as quantitative data.

The five-point Likert scale used in the questionnaire used to evaluate the acceptability of the developed system using ISO/IEC 25010:2023 Software Quality and Acceptance Model was on a scale of 1 to 5 where 1 indicates that the respondent Strongly Disagree and 5 is Strongly Agree.

| **Scale** | **Range** | **Descriptive Information** |
|---|---|---|
| 5 | 4.50-5.00 | Strongly Agree |
| 4 | 3.50 - 4.99 | Agree |
| 3 | 2.50 - 3.49 | Undecided |
| 2 | 1.50 - 2.49 | Disagree |
| 1 | 1 - 1.49 | Strongly Disagree |

The items that will be used on the questionnaire to evaluate the acceptability of the system will be based on the identified attributes of the system grouped by the major and sub-characteristics indicated in the ISO/IEC 25010:2023 Software Quality and Acceptance Model.

The respondents will answer the survey by agreeing or disagreeing on the context of the items using a scale of 1 to 5 where 1 indicates that the respondent Strongly

Disagreed and 5 as Strongly Agreed. Each item from the questionnaire interprets the degree of agreement in terms of the acceptance of the respondents based on the computed mean range. After computing the weighted mean, each item will be described as follows:

| Scale | Range | Descriptive Information |
|---|---|---|
| 5 | 4.50-5.00 | Extremely Acceptable |
| 4 | 3.50 - 4.99 | Very Acceptable |
| 3 | 2.50 - 3.49 | Acceptable |
| 2 | 1.50 - 2.49 | Fairly Acceptable |
| 1 | 1 - 1.49 | Not Acceptable |

**Description of the Prototype**

In this section of the study, Figures 12.1-12.31 displayed are the prototype concept of what the proposed system's design should look

Figure 12.1 depicts the landing page of the system

**Figure 12.1**

*Landing Page of the system*


Figure 12.2 depicts the login page of the system

**Figure 12.2**

*Login Page of the system*

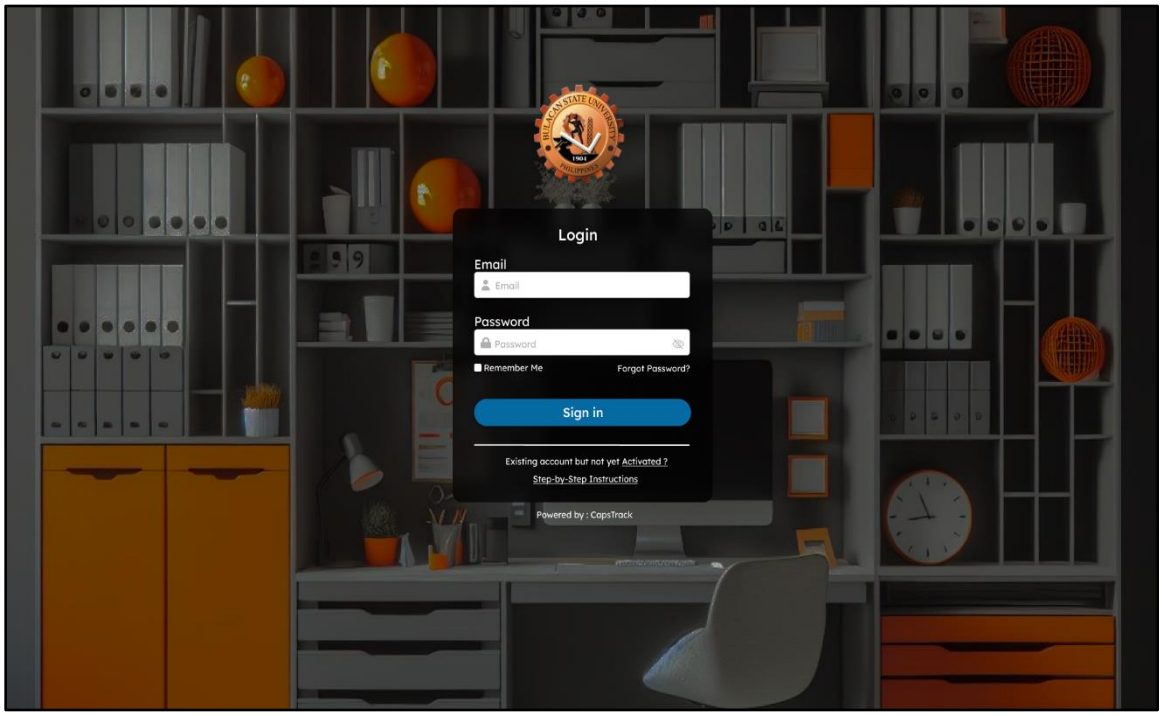



Figure 12.3 depicts the email account creation link page of the system, in which the administrators can use to send email account creation links to verified individuals.

**Figure 12.3**

*Email account creation link Page of the system*

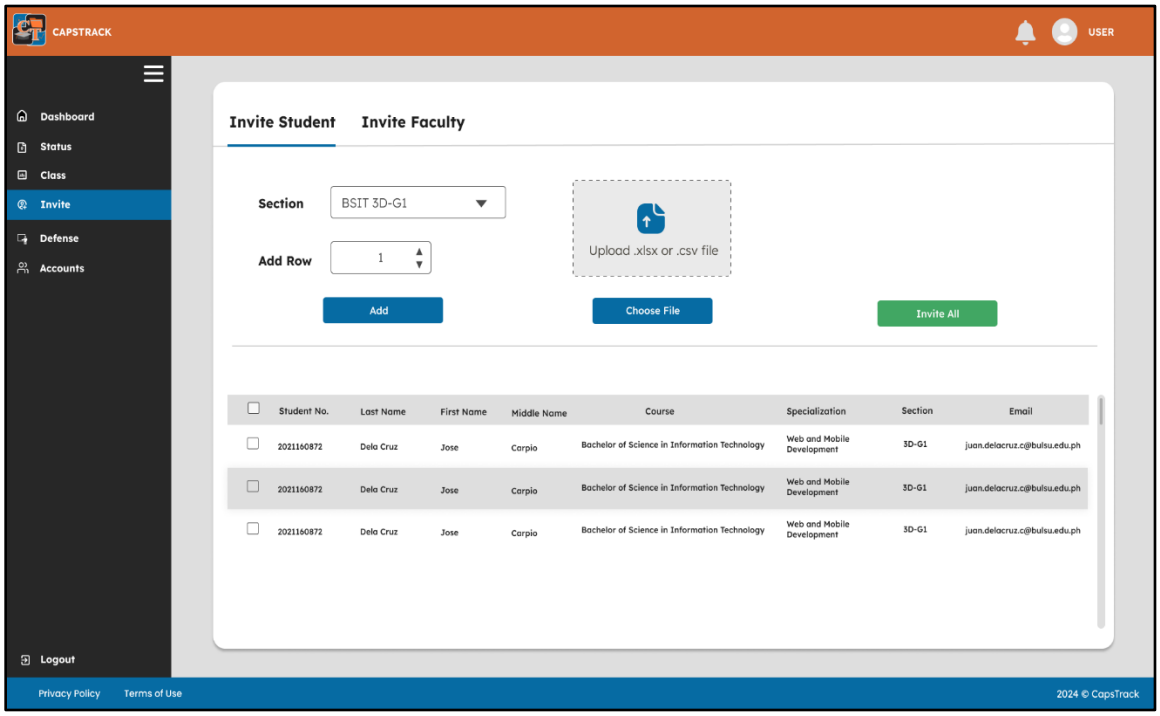



Figure 12.4 depicts the change password page of the system after the user clicks the email account creation link

**Figure 12.4**

*Change Password Page of the system*

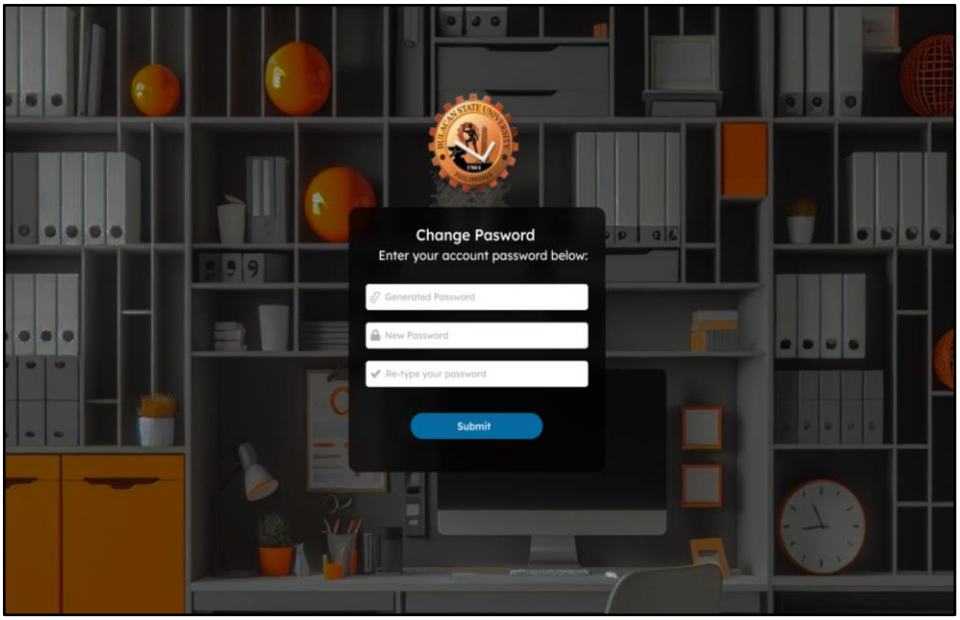


Figure 12.5 depicts the profile setting page of the user in the system after successful login or initial change of password during the utilization of email account creation link.

**Figure 12.5**

*Profile Settings Page of the system*

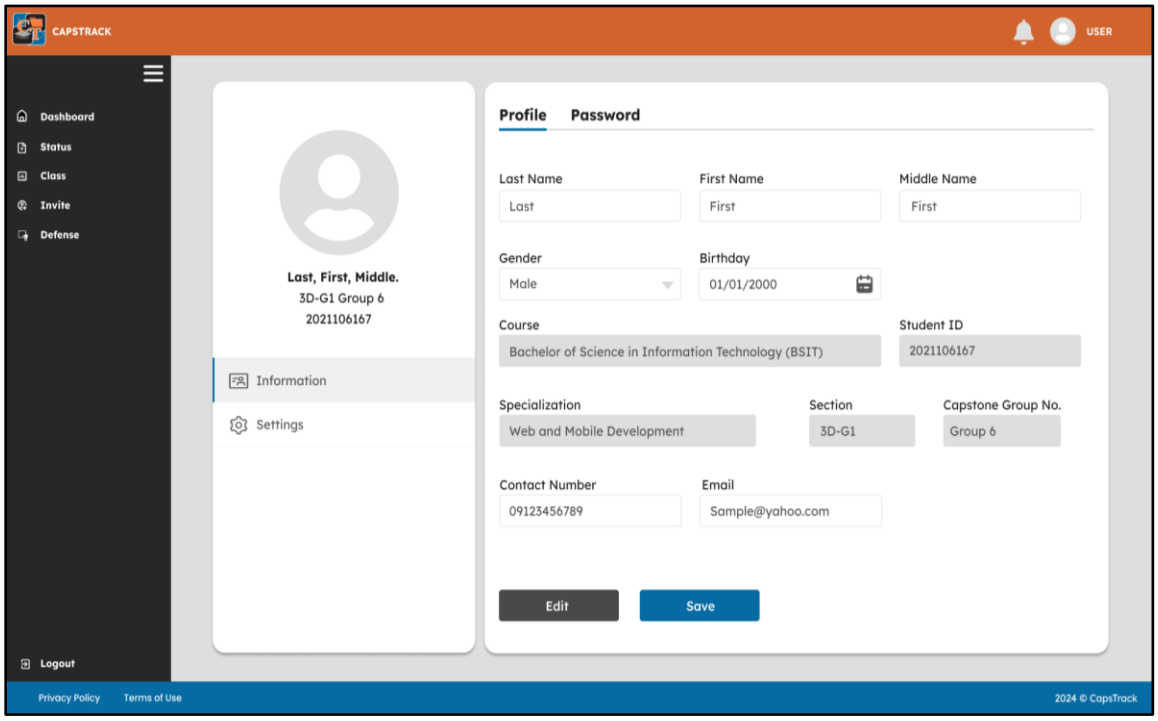



Figure 12.6 depicts the profile settings changing of the password page of the system, provided that the user is currently logged in the system.

**Figure 12.6**

*Profile Settings Page of the system*

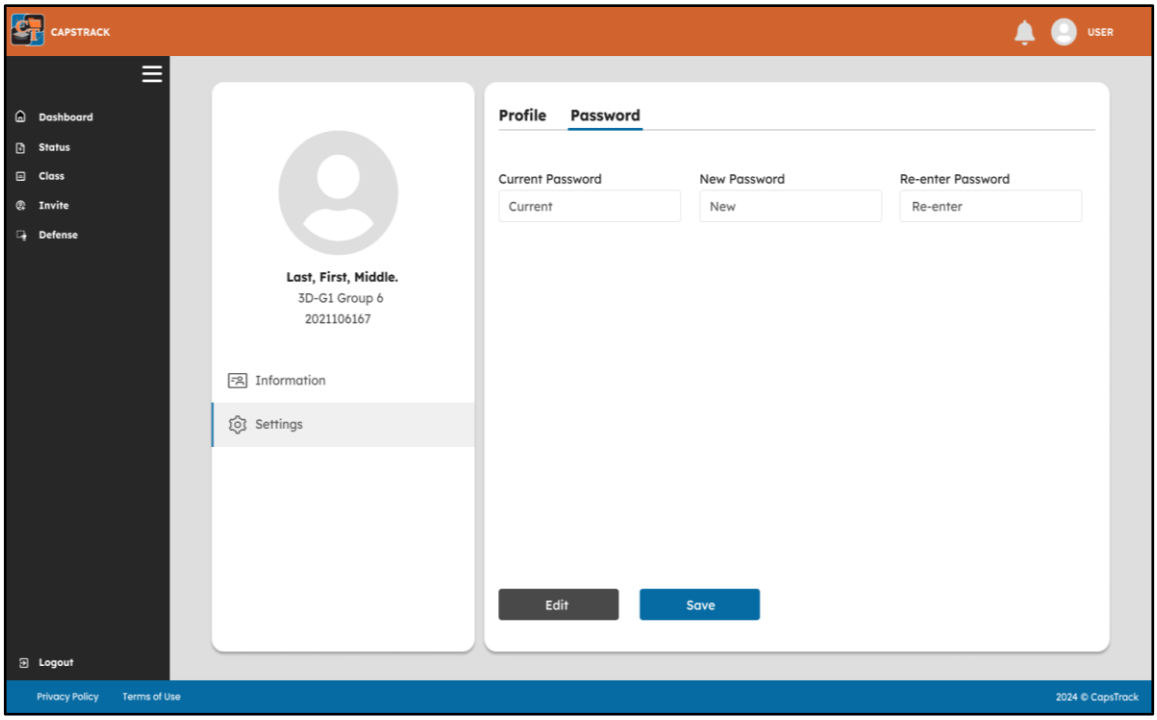



Figure 12.7 depicts the students and faculty view of the dashboard in the system.

**Figure 12.7**

*Student and Faculty Dashboard Page of the system.*

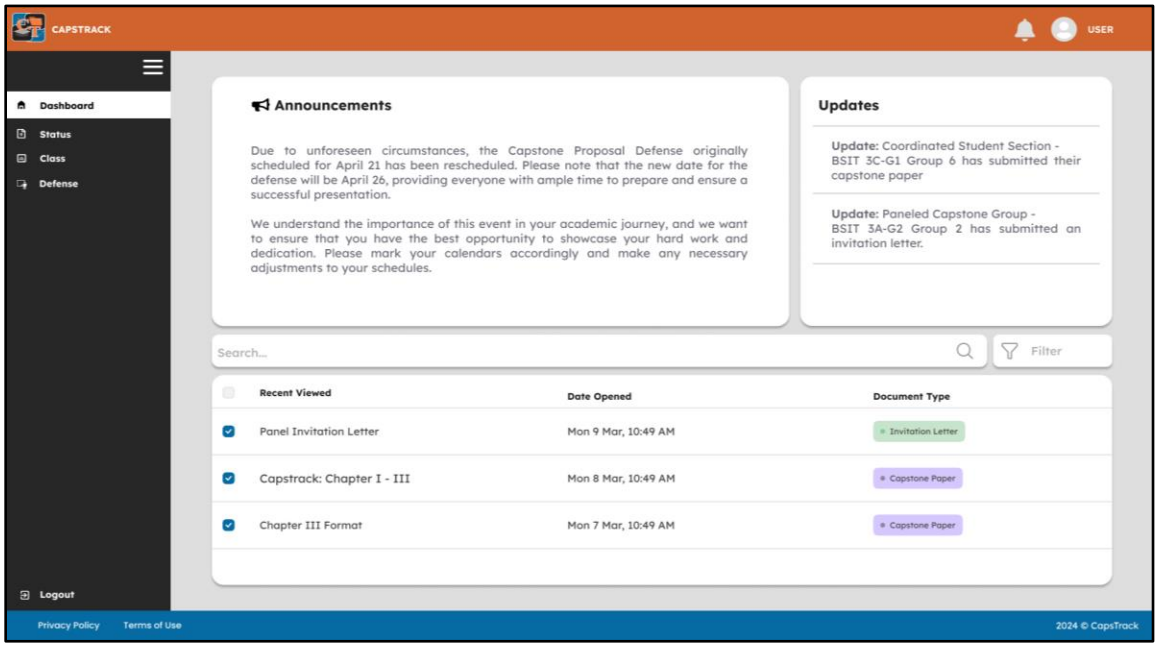


Figure 12.8 depicts the super administrator and administrator view of the dashboard in the system.

**Figure 12.8**

*Super Administrator and Administrator Dashboard Page of the system.*

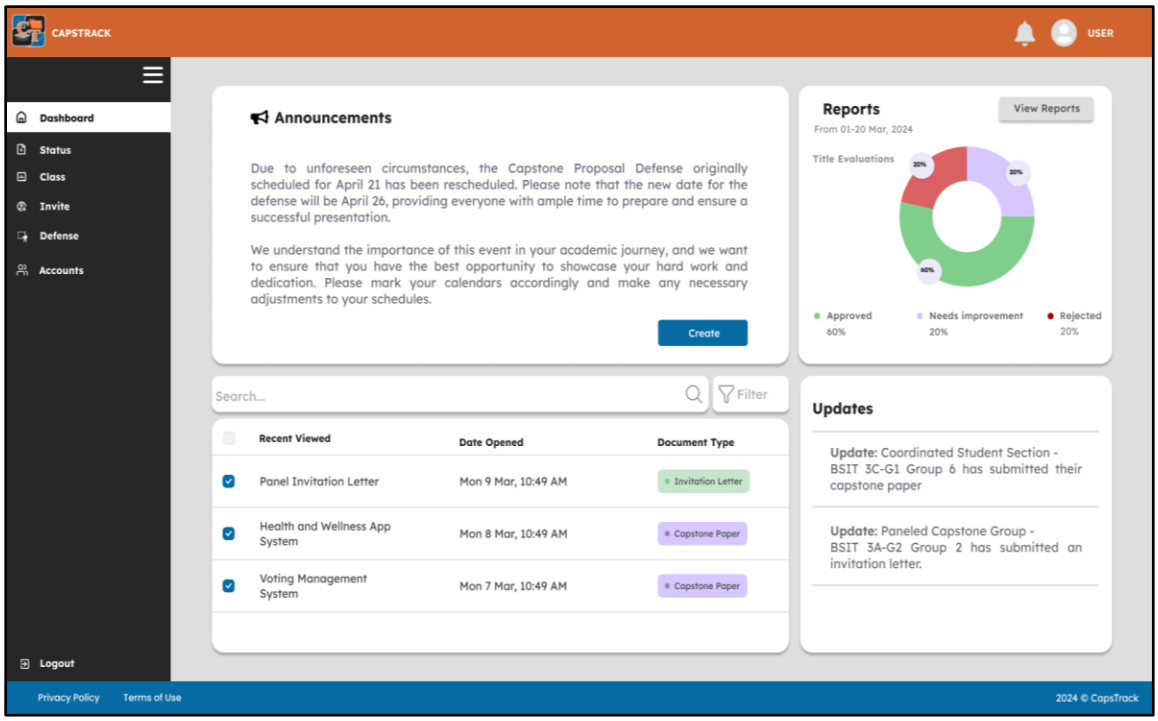



Figure 12.9 depicts the view reports - faculty engagement count report of the system, in which the administrator can see the total count of paneled, advised and coordinated capstone groups/sections of each faculty member in the system.

**Figure 12.9**

*View Reports - Faculty Engagement Count Report Page of the system.*

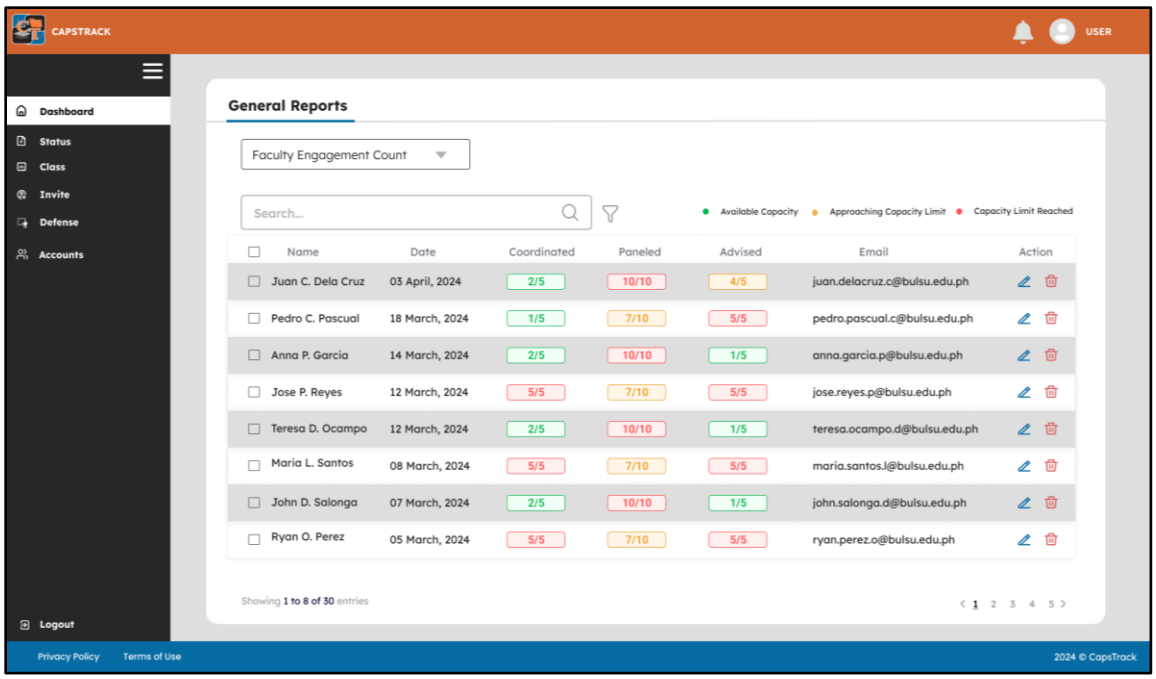



Figure 12.10 depicts the super administrator ability to view and filter accounts, also to update their account details if and when necessary.

**Figure 12.10**

*Super Administrator View of User Accounts Page of the system.*

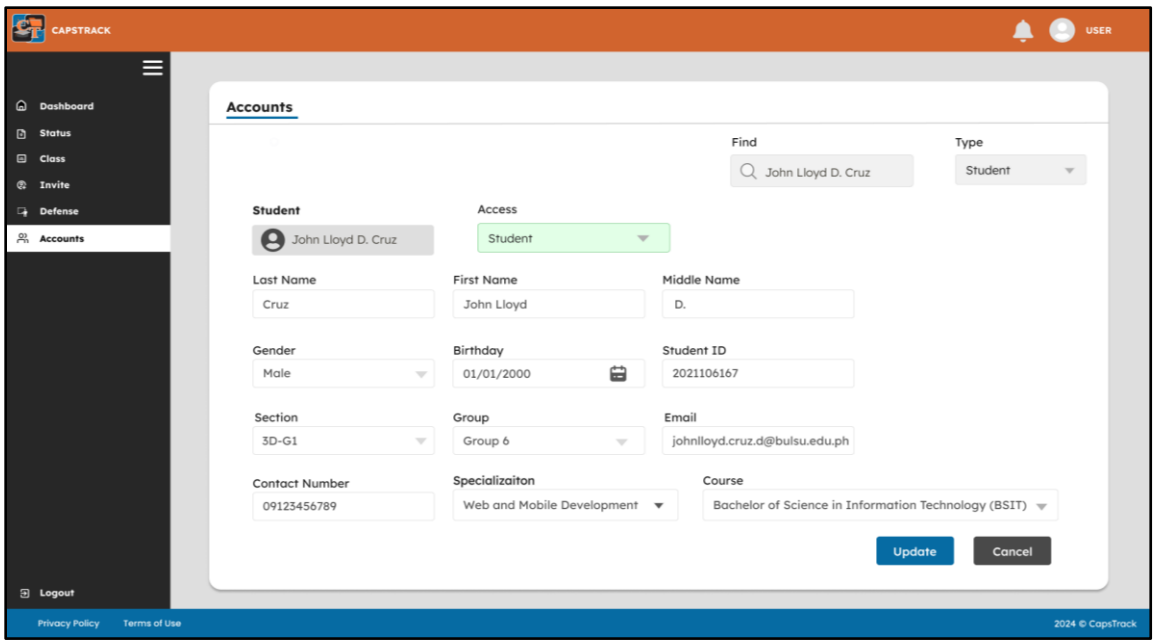


Figure 12.11 depicts the super administrator ability to view and update account details of an administrator, also for the current super administrator to transfer the super administrator access of the system to the newly appointed super administrator if and when necessary

**Figure 12.11**

*Super Administrator View of Administrator Accounts Page of the system.*

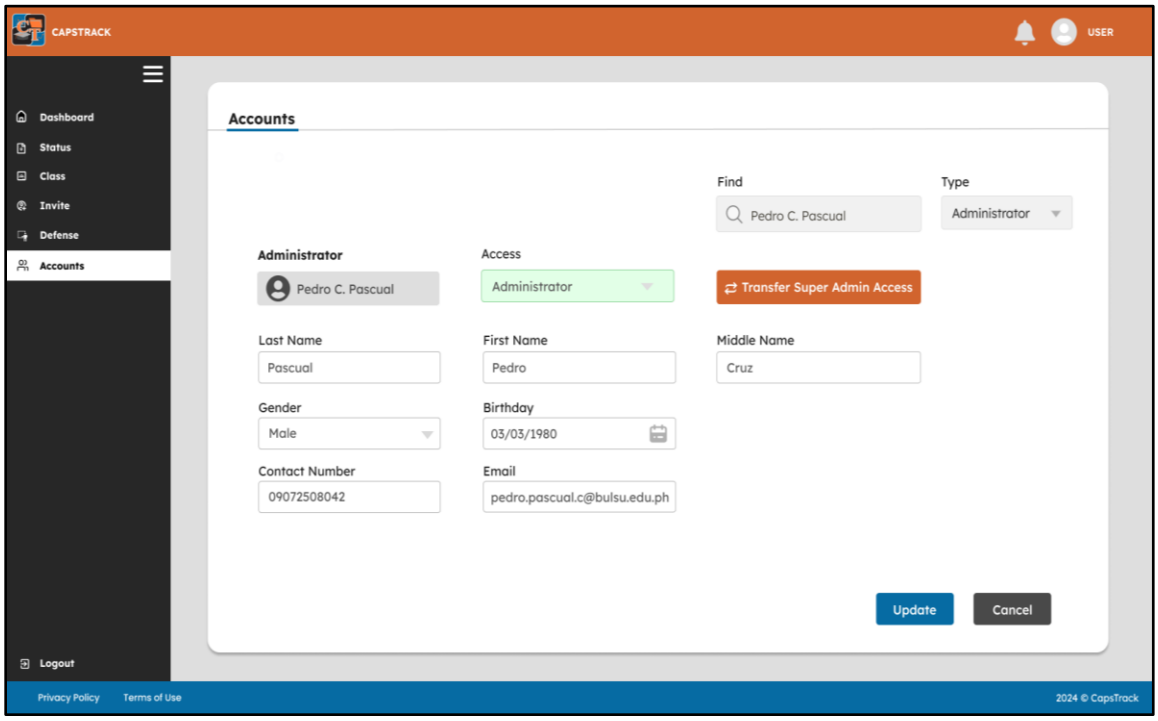



Figure 12.12 depicts the verification step of transferring the current super administrator access into the newly appointed super administrator, by the current super administrator inputting their password to proceed with the access transfer.

**Figure 12.12**

*Super Administrator Password Verification Step Page of the system.*

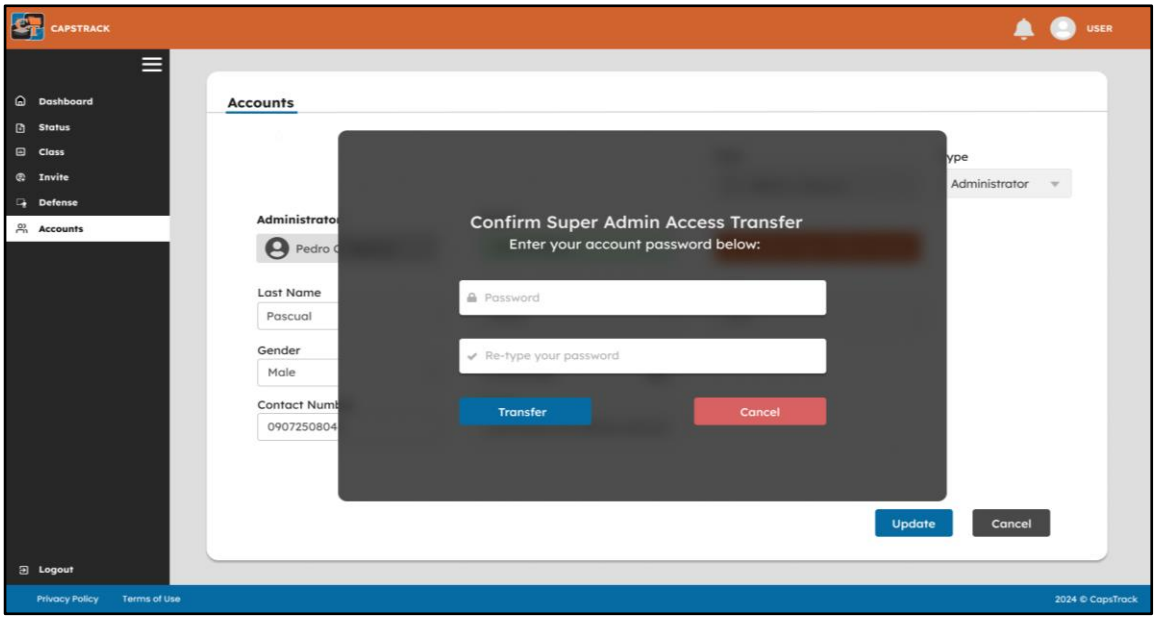



Figure 12.13 depicts the super administrator viewing existing courses in the system, and the option to create more courses if needed by clicking on the create button.

**Figure 12.13**

*Super Administrator Course View and Creation Page of the system.*

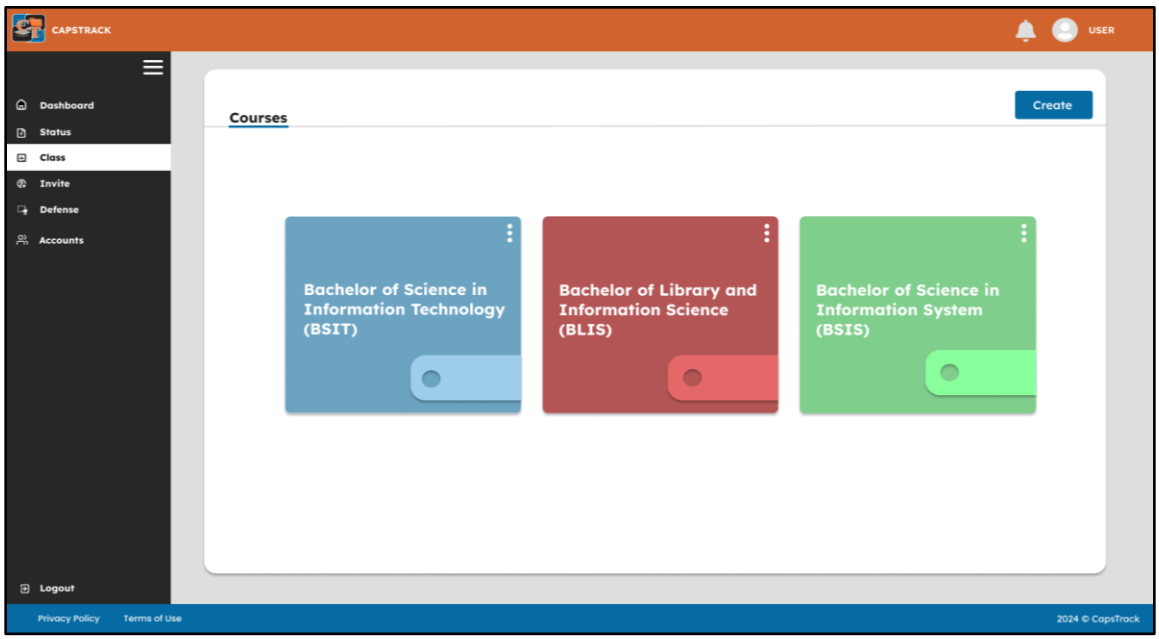


Figure 12.14 depicts the administrator viewing existing specializations within a specific course in the system, and the option to create more specialization if needed by clicking on the create button.

**Figure 12.14**

*Administrator Specializations View and Creation Page of the system.*

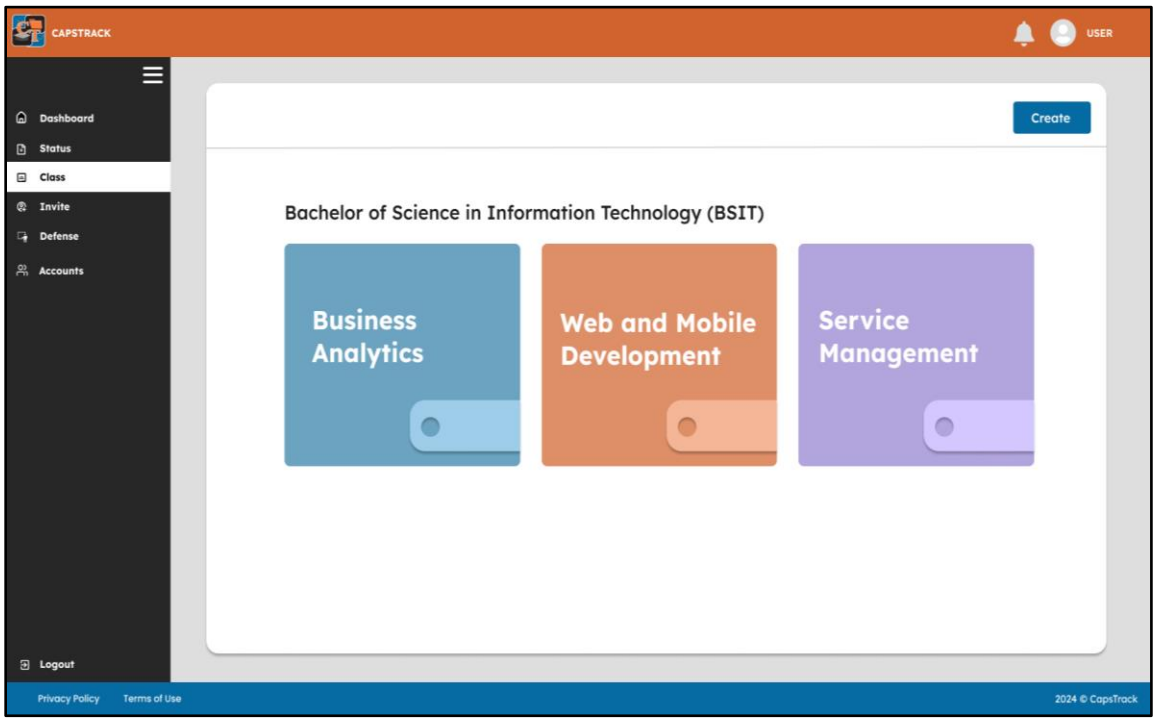



Figure 12.15 depicts the administrator viewing existing sections within a specific specialization and course, also the ability to create new sections in the system by clicking on the create button.

**Figure 12.15**

*Administrator Sections View Page on the system.*

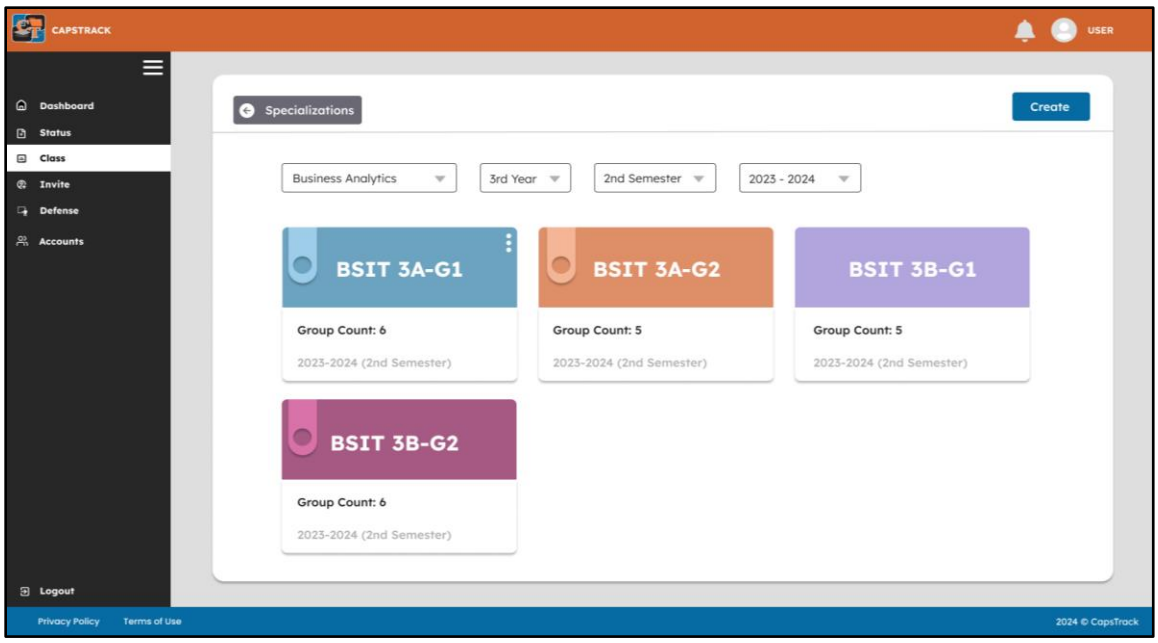



Figure 12.16 depicts the administrator's ability to create a new section on a specific course or/and specialization within the system.

**Figure 12.16**

*Administrator Creating New Sections Page on the system.*

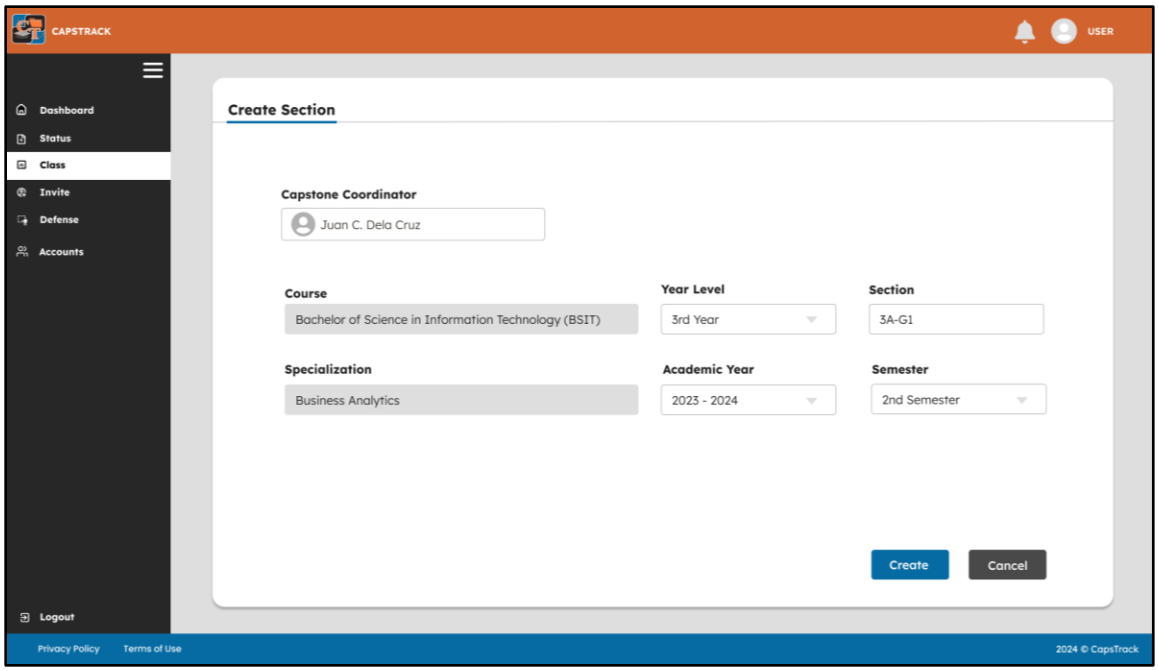


Figure 12.17 depicts the Faculty view of the capstone groups who they are assigned to as a capstone panelist

**Figure 12.17**

*Faculty View Page of Paneled Capstone Groups on the system.*

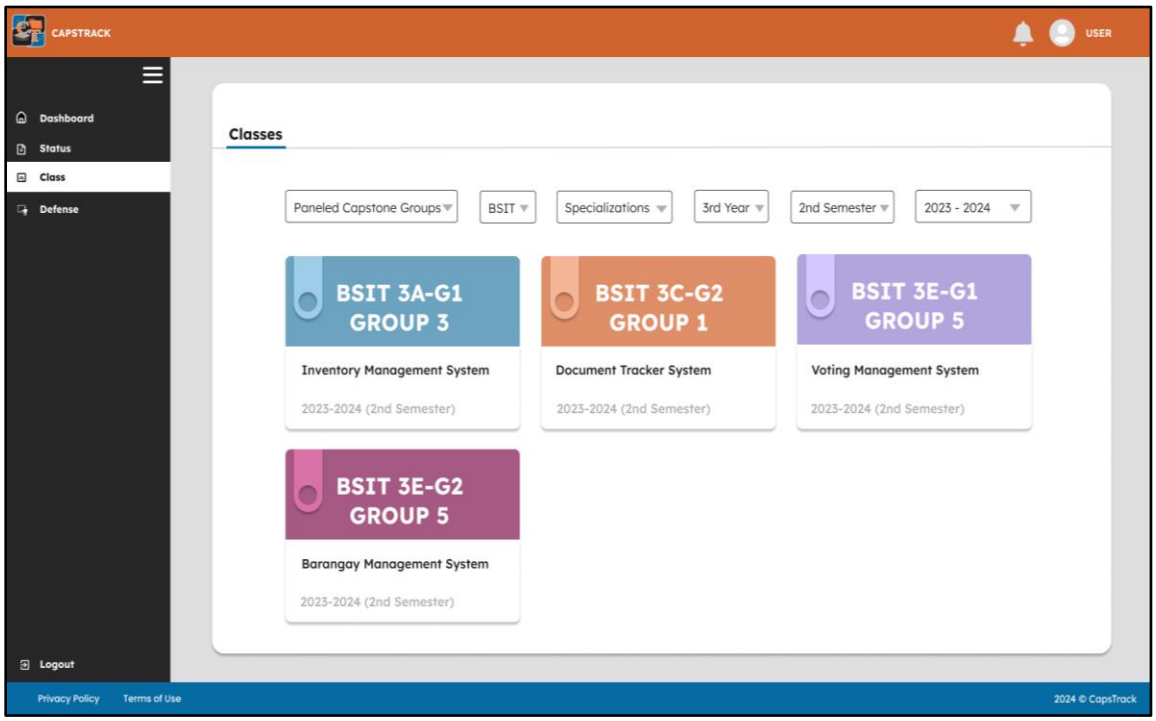



Figure 12.18 depicts the Faculty view of the capstone groups who they are assigned to as a capstone adviser

**Figure 12.18**

*Faculty View Page of Advised Capstone Groups on the system.*

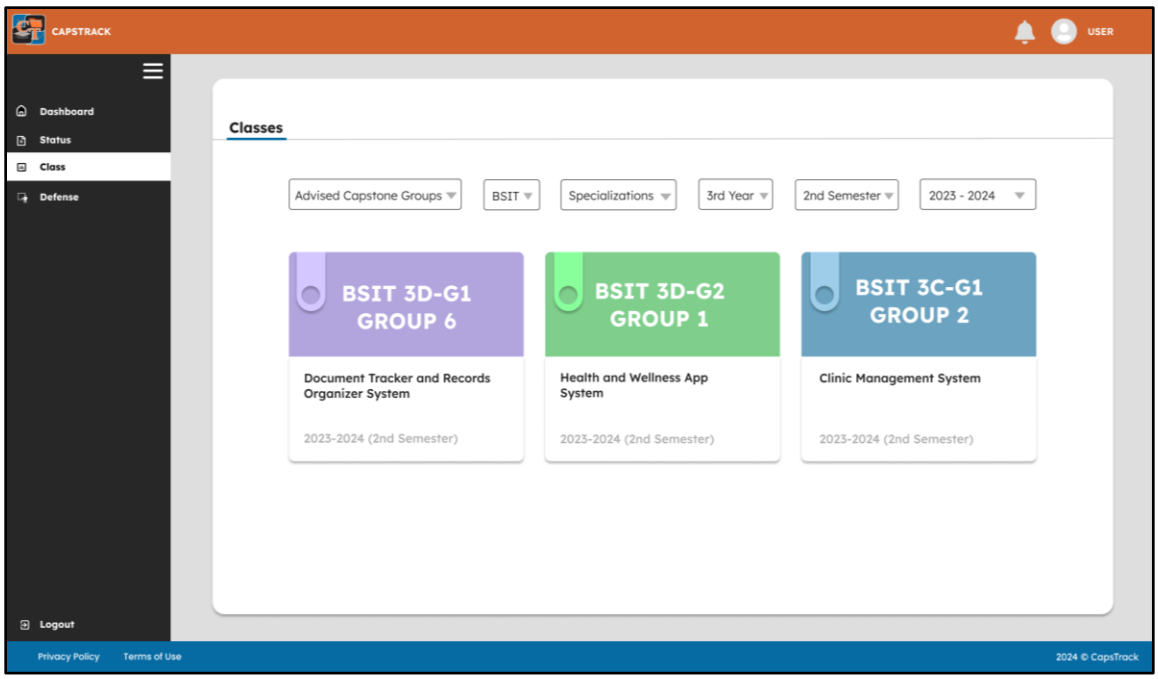



Figure 12.19 depicts the Capstone Coordinator view of the sections who they are assigned to as a capstone coordinator

**Figure 12.19**

Capstone Coordinator *View Page of Coordinated Student Sections on the system.*

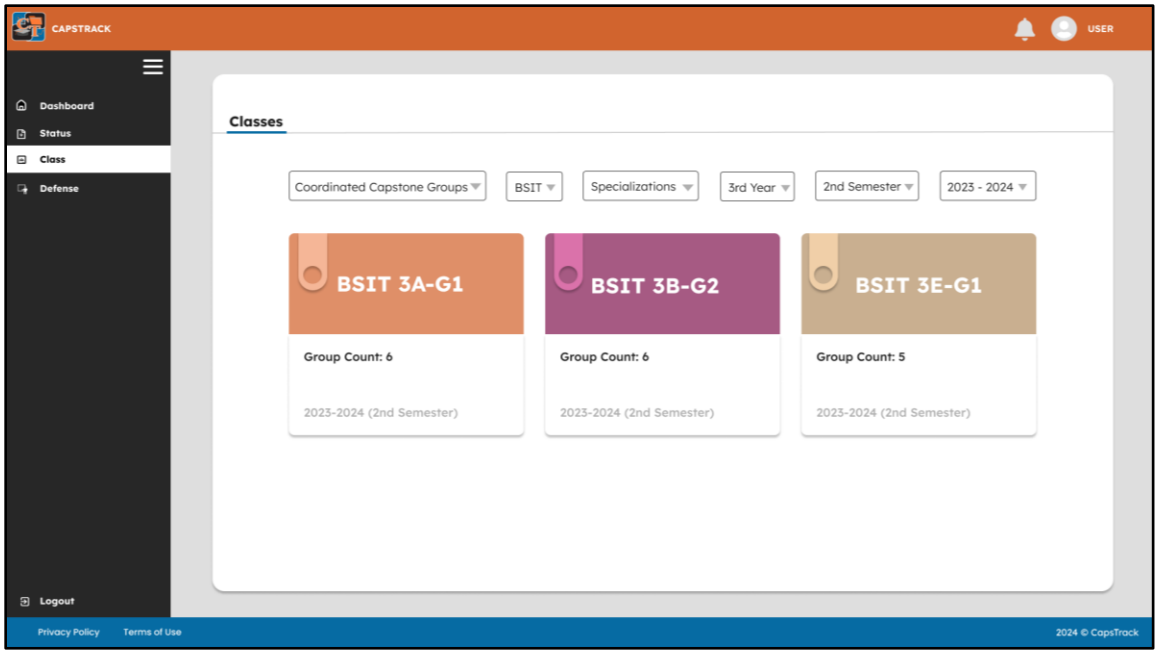


Figure 12.20 depicts the Capstone Coordinator internal view of the sections who they are assigned to as a capstone coordinator, in which they can see the capstone groups within that specific section.

**Figure 12.20**

Capstone Coordinator *View Page of  Capstone Groups in Coordinated Student Sections on the system.*

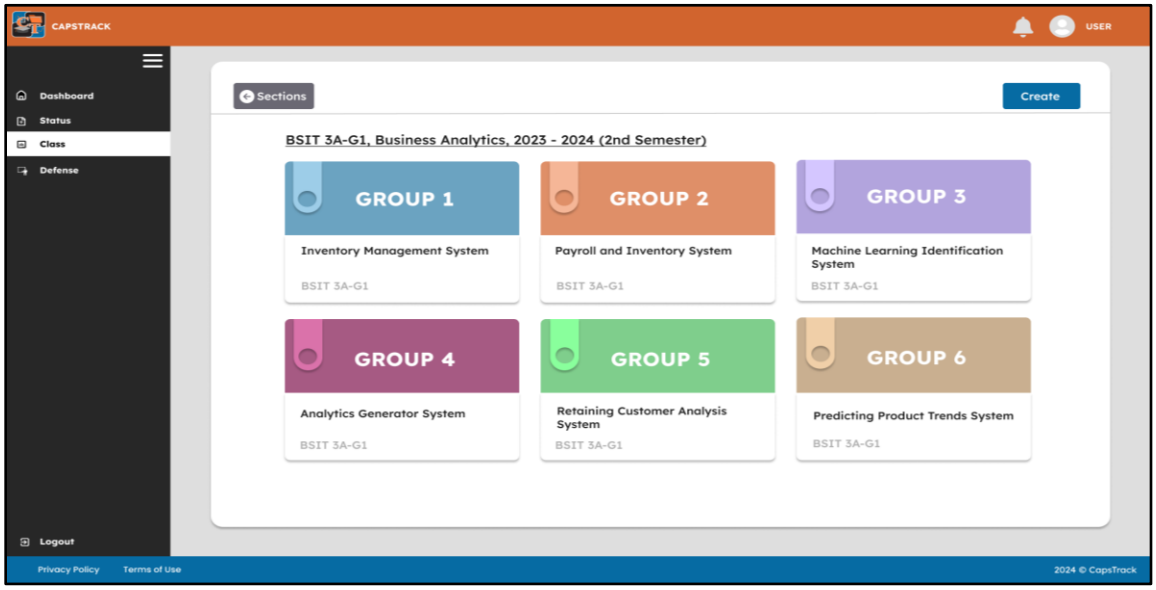



Figure 12.21 depicts the Capstone Coordinator internal view of a specific capstone group within one of their coordinated sections

**Figure 12.21**

Capstone Coordinator *View Page of  Inside a Capstone Group in Coordinated Student Sections on the system.*

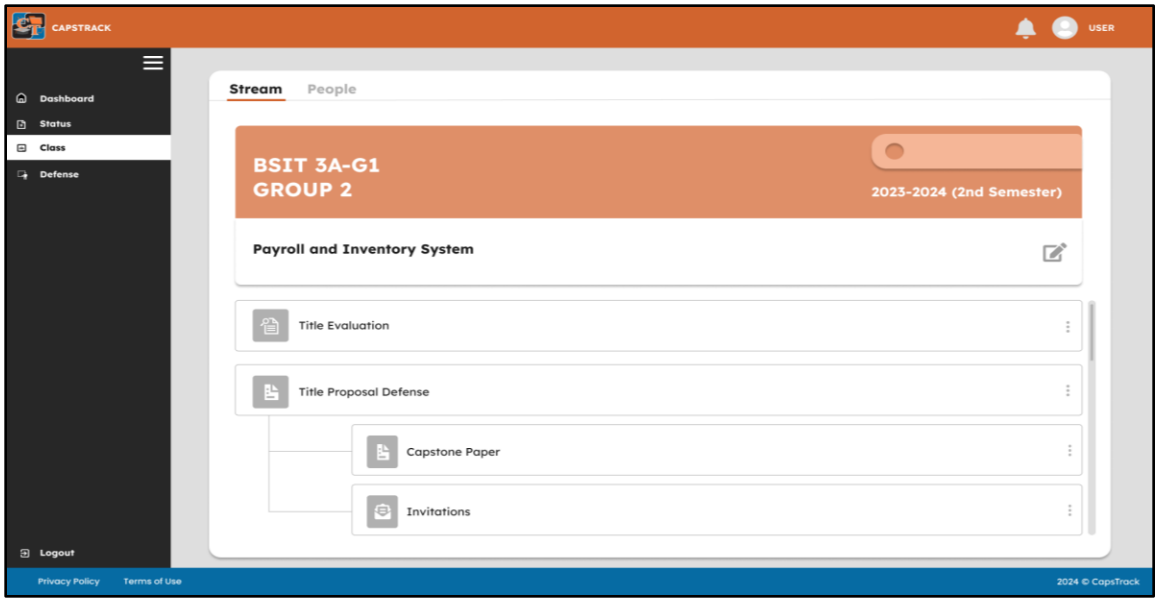



Figure 12.22 depicts the Capstone Coordinator internal view of a specific capstone group within one of their coordinated sections, and the users who are assigned to that capstone group.

**Figure 12.22**

Capstone Coordinator *View Page of Students, Panelists and Adviser assigned to a capstone group on the system.*

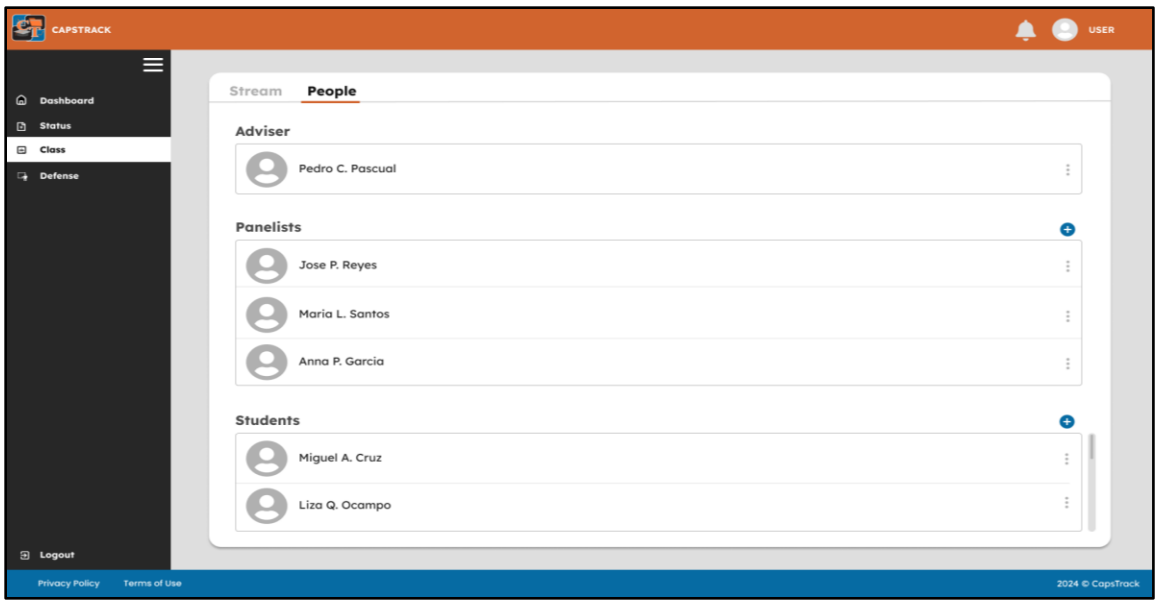



Figure 12.23 depicts the Capstone Panelist view of the title evaluations of their specific paneled capstone group, in which they can select one of the three capstone titles to approve.

**Figure 12.23**

*Capstone Panelist View Page of title evaluations introduction on the system.*

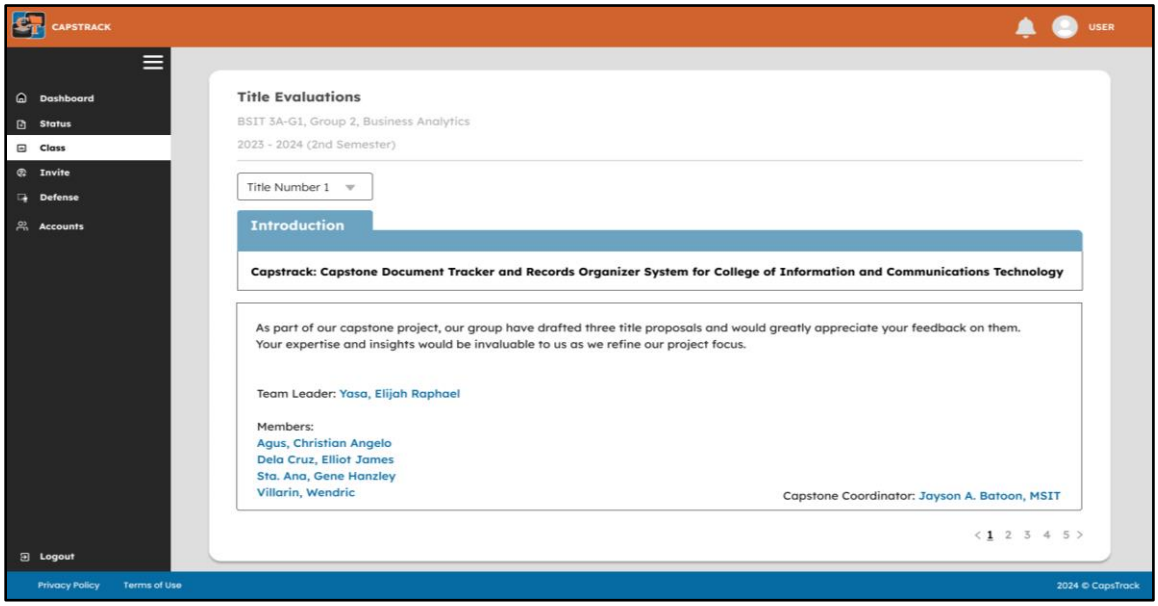


Figure 12.24 depicts the Capstone Panelist view of the title evaluations rationale content of the title

**Figure 12.24**

*Capstone Panelist View Page of title evaluations rationale content on the system.*

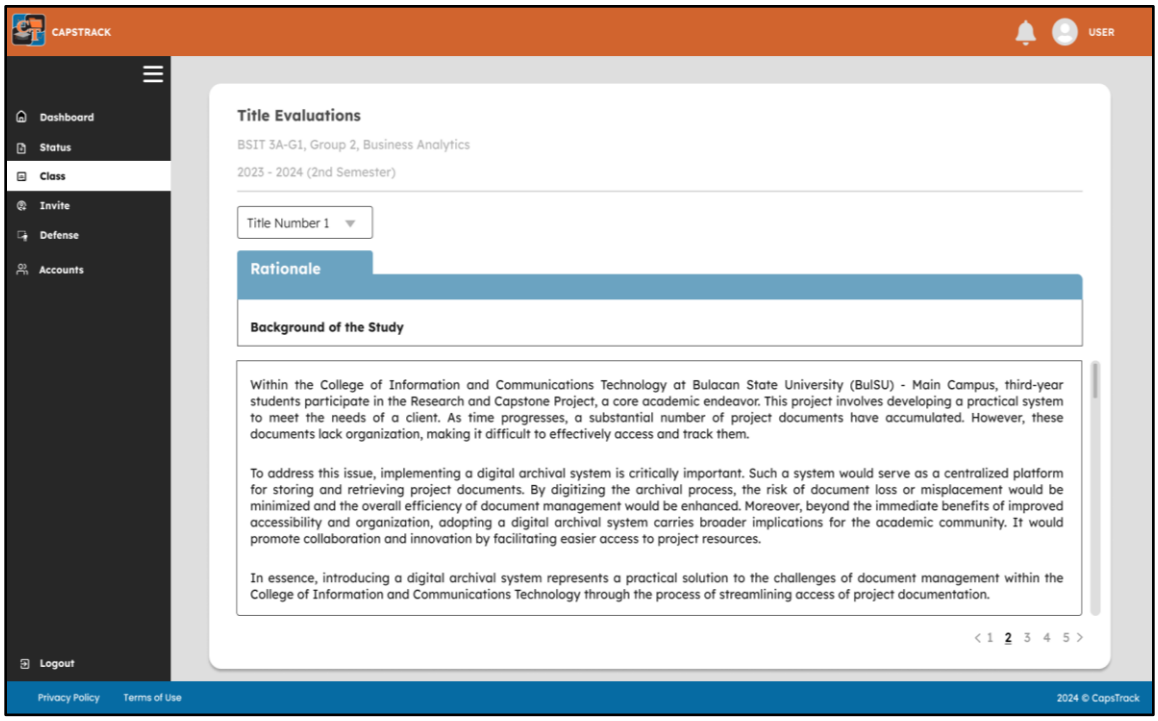



Figure 12.25 depicts the Capstone Panelist view of the title evaluations decision stage of choosing one title from the proposed three capstone titles.

**Figure 12.25**

*Capstone Panelist View Page of title evaluations decision stage on the system.*

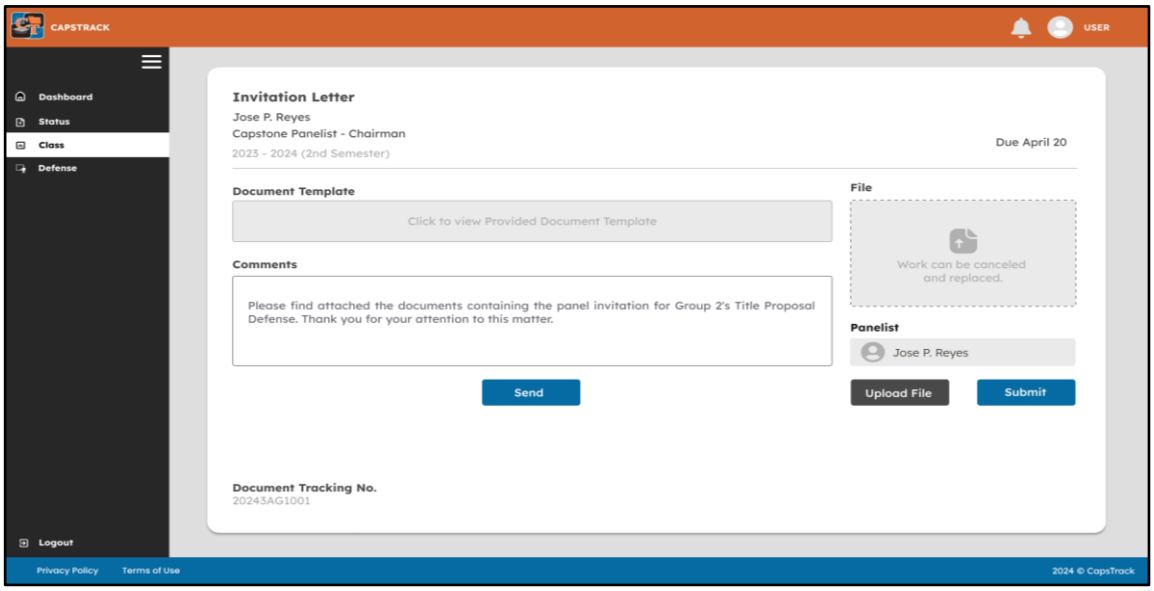



Figure 12.26 depicts the students submitting a capstone requirement, in this instance an invitation letter for a specific panelist as the recipient.

**Figure 12.26**

*Student View Page of submitting a capstone requirement (invitation letter) on the system.*

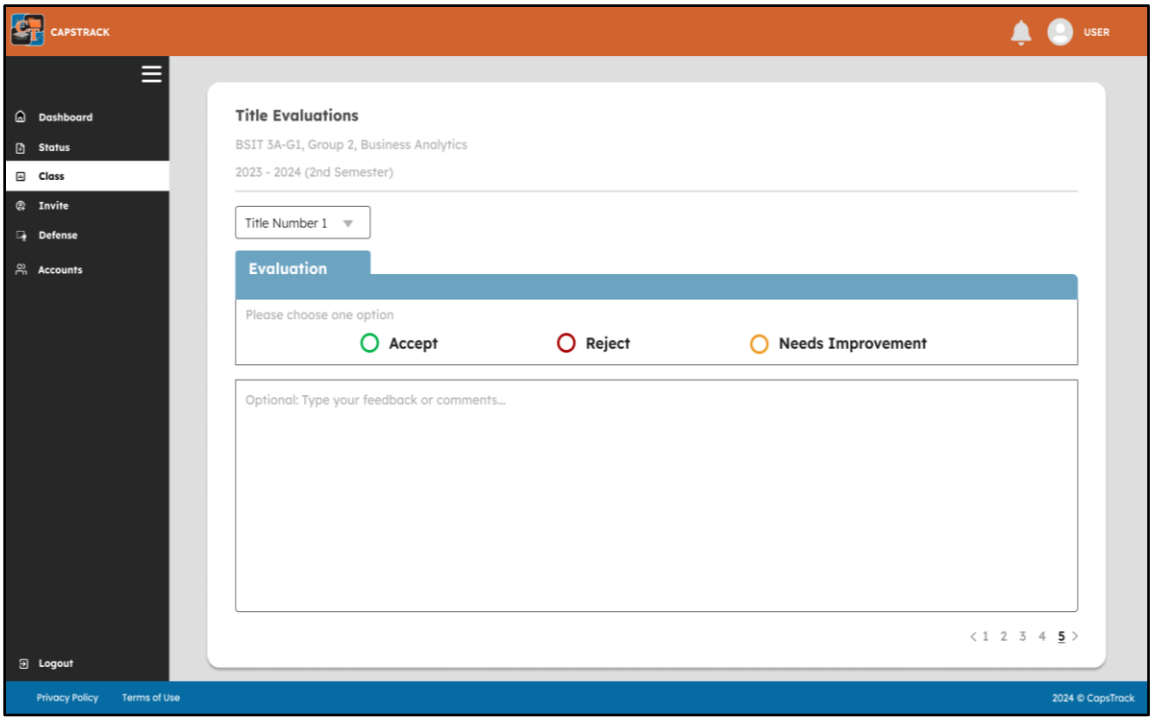


Figure 12.27 depicts the capstone coordinator viewing the submitted capstone requirement of one of their paneled capstone groups.

**Figure 12.27**

*Capstone Coordinator View Page of viewing a submitted capstone requirement (invitation letter) on the system.*

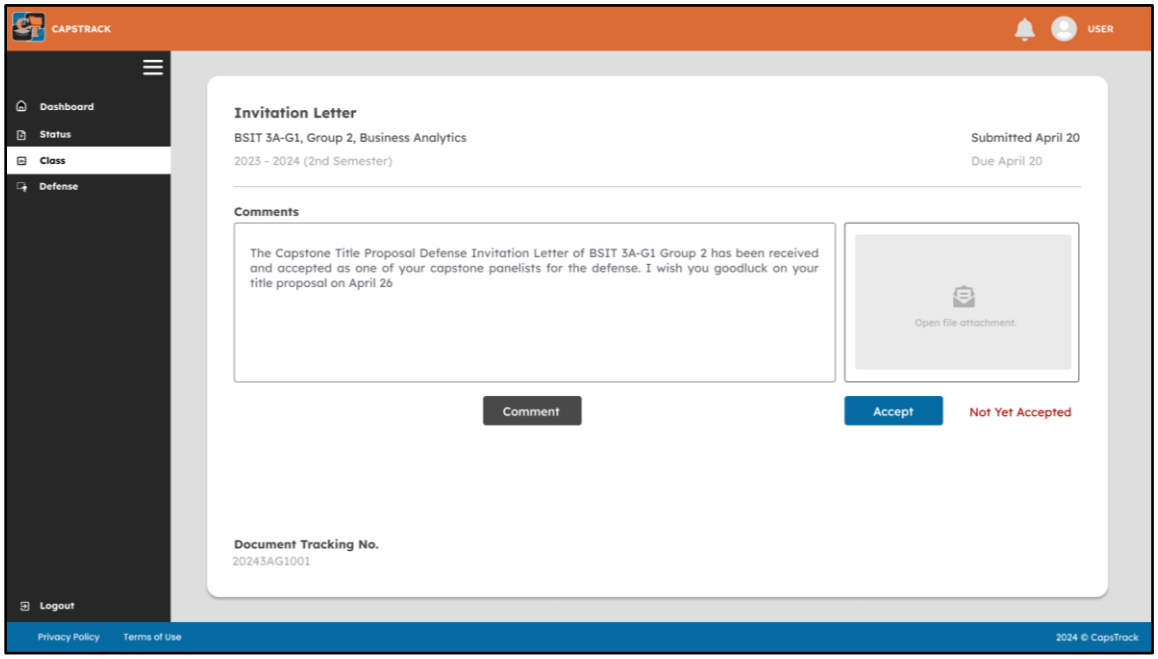



Figure 12.28 depicts the document tracking view of the progress of a certain document tracking number

**Figure 12.28**

*Document Tracking View Page on the system*

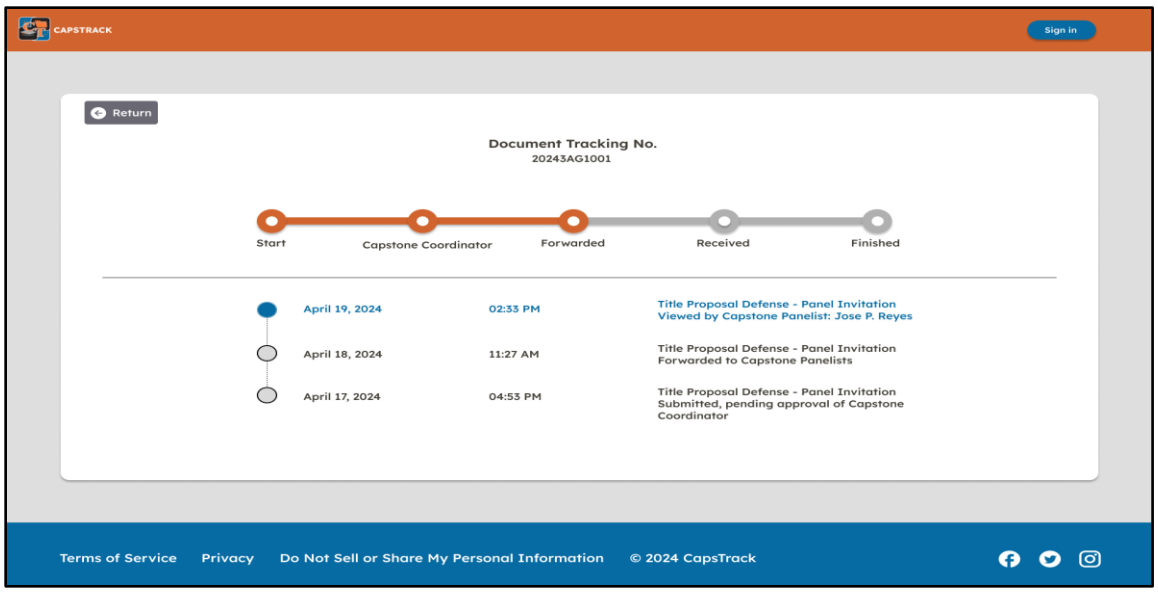



Figure 12.29 depicts the view of the defense page on the students side, in where they can view submitted and approved capstone requirements that is required for the defense, also to view the verdict, comments and panel reports of panelists after the capstone defense.

**Figure 12.29**

*Student View Page of Capstone Defense Verdict on the system.*

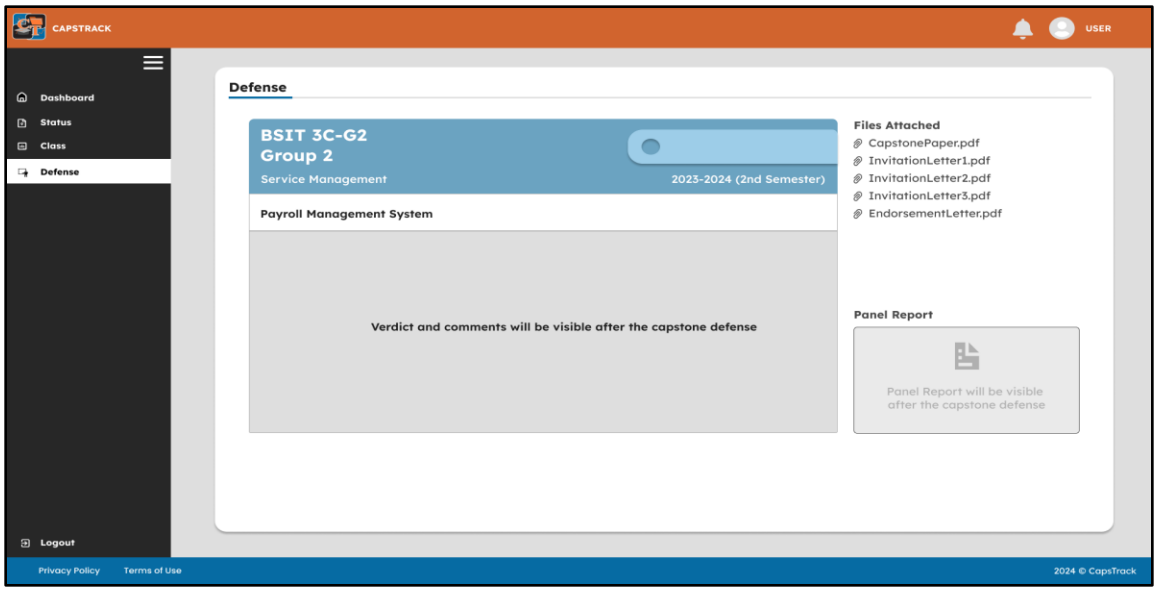


Figure 12.30 depicts the view of the defense page on the non-chairman capstone panelist side, in which they can give their comments and panel reports about the capstone defense.

**Figure 12.30**

*Non-chairman Capstone Panelist View Page of Capstone Defense Verdict on the system.*

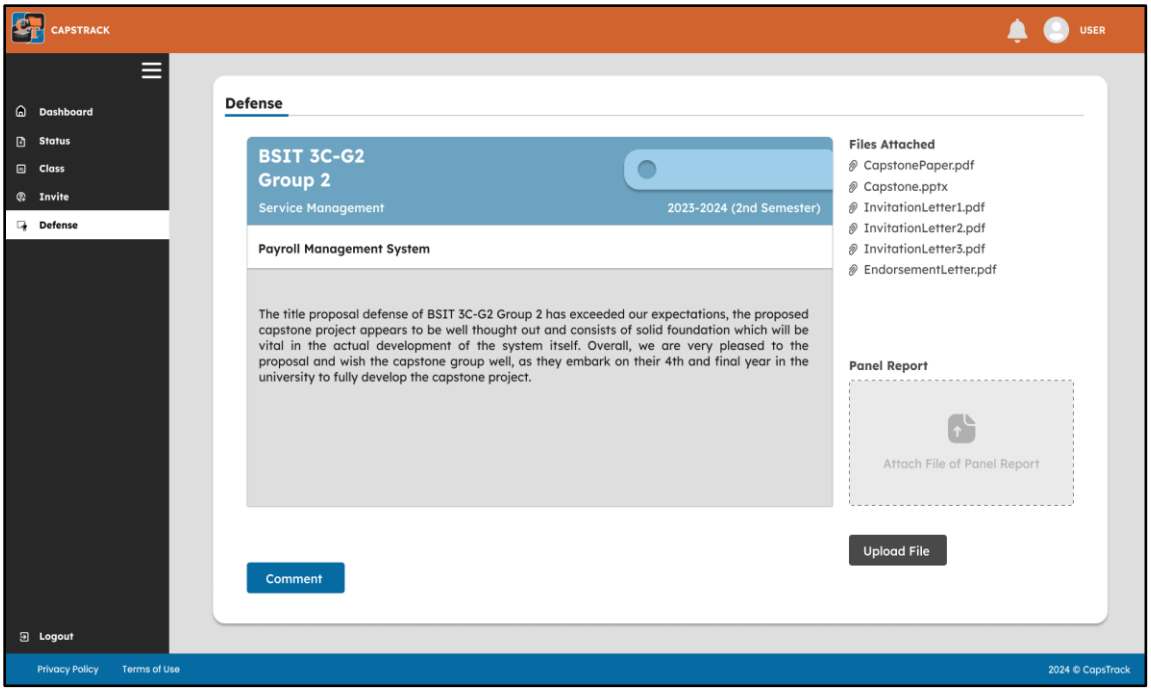
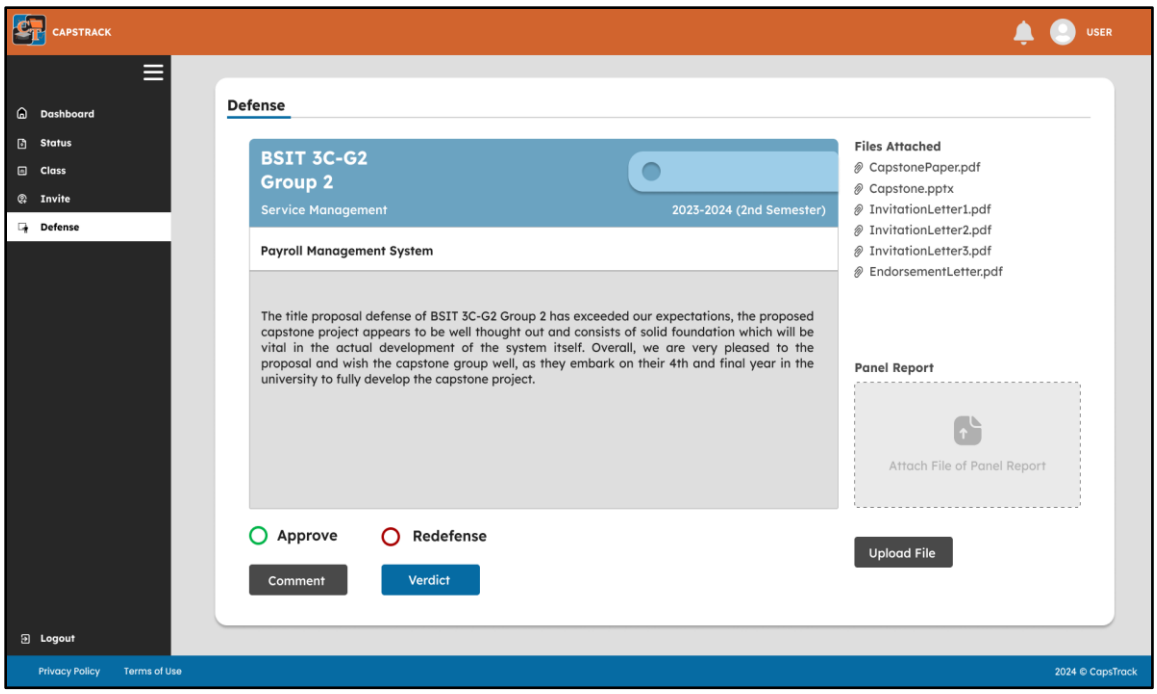



Figure 12.31 depicts the view of the defense page on the chairman capstone panelist side, in which the chairman capstone panelist can give their verdict, comments and panel reports about the capstone defense.

**Figure 12.31**

*Chairman Capstone Panelist View Page of Capstone Defense Verdict on the system.*


CAPSTRACK
USER
Dashboard
Status
Class
Invite
Defense
Logout
Defense
BSIT 3C-G2
Group 2
Service Management
2023-2024 (2nd Semester)
Payroll Management System
The title proposal defense of BSIT 3C-G2 Group 2 has exceeded our expectations, the proposed capstone project appears to be well thought out and consists of solid foundation which will be vital in the actual development of the system itself. Overall, we are very pleased to the proposal and wish the capstone group well, as they embark on their 4th and final year in the university to fully develop the capstone project.
Files Attached
CapstonePaper.pdf
Capstone.pptx
InvitationLetter1.pdf
InvitationLetter2.pdf
InvitationLetter3.pdf
EndorsementLetter.pdf
Panel Report
Attach File of Panel Report
Approve
Redefense
Comment
Verdict
Upload File
Privacy Policy
Terms of Use
2024 © CapsTrack

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