UTM
UNIVERSITI TEKNOLOGI MALAYSIA

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SCHEDULE MANAGEMENT SYSTEM

Project 3: Analysis and Design

SECD2613: SYSTEM ANALYSIS AND DESIGN

NO.	NAME	MATRIC NO
1.	MUHAMMAD HAZIQ BIN MOHD HAFIZAL	A23CS0132
2.	MUHAMMAD HAFIZ BIN MOHD SHAHARUDDIN	A23CS0130
3.	NAZATUL NADHIRAH BINTI SABTU	A23CS0144
4.	NURUL ATHIRAH SYAFIQAH BINTI MOHD RAZALI	A23CS0163

GROUP NAME : SUNFLOWER

COURSE : 1 SECBH

LECTURER'S NAME : DR. AHMAD NAJMI BIN AMER HAIDER NUAR

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1.0 Overview of the Project

As undergraduate students majoring in Bioinformatics at Universiti Teknologi Malaysia (UTM), we are committed to pursuing academic excellence. To fulfil the requirements for the Systems Analysis and Design course (SECD2613), we undertook this project to demonstrate our capabilities in this important area. This project allowed us to apply theoretical knowledge to a real-world challenge, developing a practical solution that could have a significant impact on the academic writing experience.

We believe that a cloud-based thesis management system can address current limitations and enable students and supervisors to navigate the thesis writing process more easily and effectively. The following sections of this proposal will delve deeper into the current challenges of the traditional thesis writing process, followed by a detailed description of the proposed cloud-based management system, its features, and its features. it and the potential benefits it brings to the academic community

2.0 Problem Statement

The academic world, particularly research-intensive environments, faces a critical roadblock: the inefficiency of managing complex thesis writing projects. Lecturers and postgraduate students currently rely heavily on traditional, manual processes like pen and paper, spreadsheets, and basic project management software. These methods, while familiar, are demonstrably inadequate for the intricate demands of academic research and writing.

These manual processes are plagued by several limitations. Data entry for tasks, deadlines, and communication notes in spreadsheets and notebooks is time-consuming and prone to errors. This human element introduces the potential for inaccuracies, missed deadlines, and wasted time spent on corrections. Furthermore, traditional methods hinder real-time collaboration and co-writing of thesis documents. Version control issues arise from using email attachments and external cloud storage solutions. Feedback exchange becomes fragmented, lacking a centralized platform for discussions and annotations on drafts.

Spreadsheets and notes also fail to provide a comprehensive view of project progress. Both students and supervisors struggle to track overall completion, identify potential delays, or adjust timelines effectively. This lack of transparency can lead to confusion and missed opportunities to address issues before they escalate. Inefficient workflows translate to wasted time spent on manual updates, sorting through documents, and clarifying communication through scattered email threads. These activities detract from the core research and writing activities critical for academic success.

The limitations of manual processes have significant negative impacts on the academic writing experience. The inefficiencies can significantly delay thesis completion due to missed deadlines and overall workflow hangups. The stress associated with missed deadlines, confusion, and disorganization can negatively impact the well-being of postgraduate students. Time wasted on manual tasks and communication management

reduces overall efficiency and productivity for both students and supervisors. Lack of centralized communication platforms can lead to misunderstandings and breakdowns in communication between students and supervisors. Disorganization and inefficiency can hinder the quality of research and writing, potentially leading to subpar thesis work.

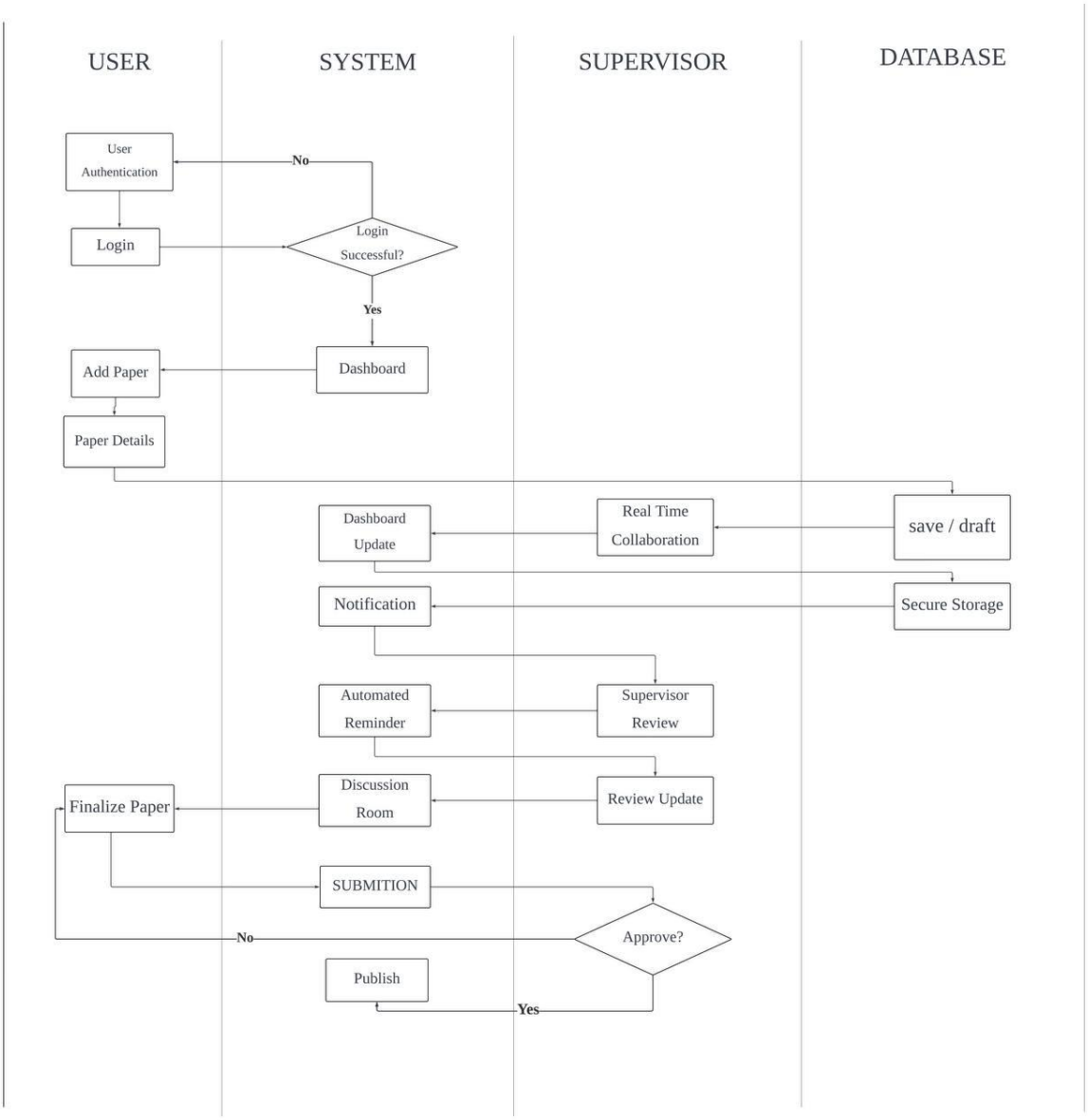
The current methods for managing thesis writing are outdated and hinder the success of both students and supervisors. There is a critical need for a more efficient, collaborative, and cloud-based solution specifically designed to address the challenges faced in academic research and writing projects. By implementing a new approach, we can create a more streamlined and productive workflow, fostering academic excellence and a more positive learning environments for all stakeholders.

3.0 Proposed Solution

This paper proposes a solution: a cloud-based thesis management system designed specifically, to address these pain points. This innovative platform will empower postgraduate students and their supervisors to navigate the thesis writing process with greater efficiency, organization, and collaboration. By replacing outdated manual processes with a centralized and user-friendly system, this project aims to Reduce wasted time. Eliminate the need for cumbersome tasks like creating and updating multiple spreadsheets or managing versions of documents through email attachments. Secondly, to enhance collaboration by foster seamless communication and real-time co-editing of drafts between students and supervisors. It can also improve organization by providing a central platform to manage tasks, deadlines, and project milestones, ensuring everyone remains on the same page. Next, it is to increase transparency. Offering supervisors a clear view of student progress and facilitate timely feedback exchange. Lastly, to boost productivity by equipping students and supervisors with the necessary tools to streamline the thesis writing process, allowing them to focus on the core research and writing tasks.

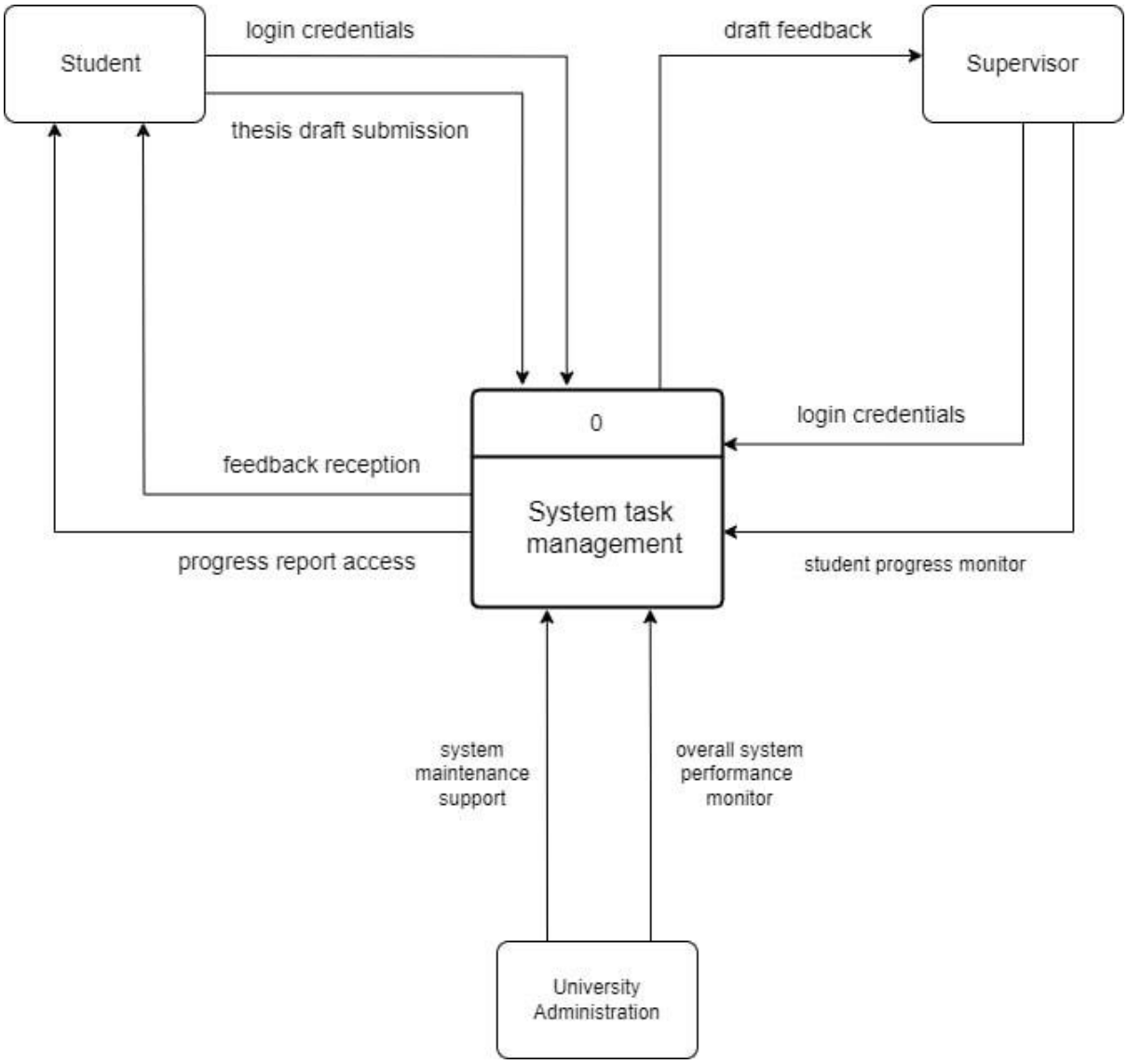
This cloud-based system has the potential to revolutionize the thesis writing experience for postgraduate students and their supervisors. By transforming the traditional, often cumbersome process into a more efficient and collaborative one, this project aims to significantly improve the quality and timeliness of thesis completion.

4.0 Current Business Process / Workflow

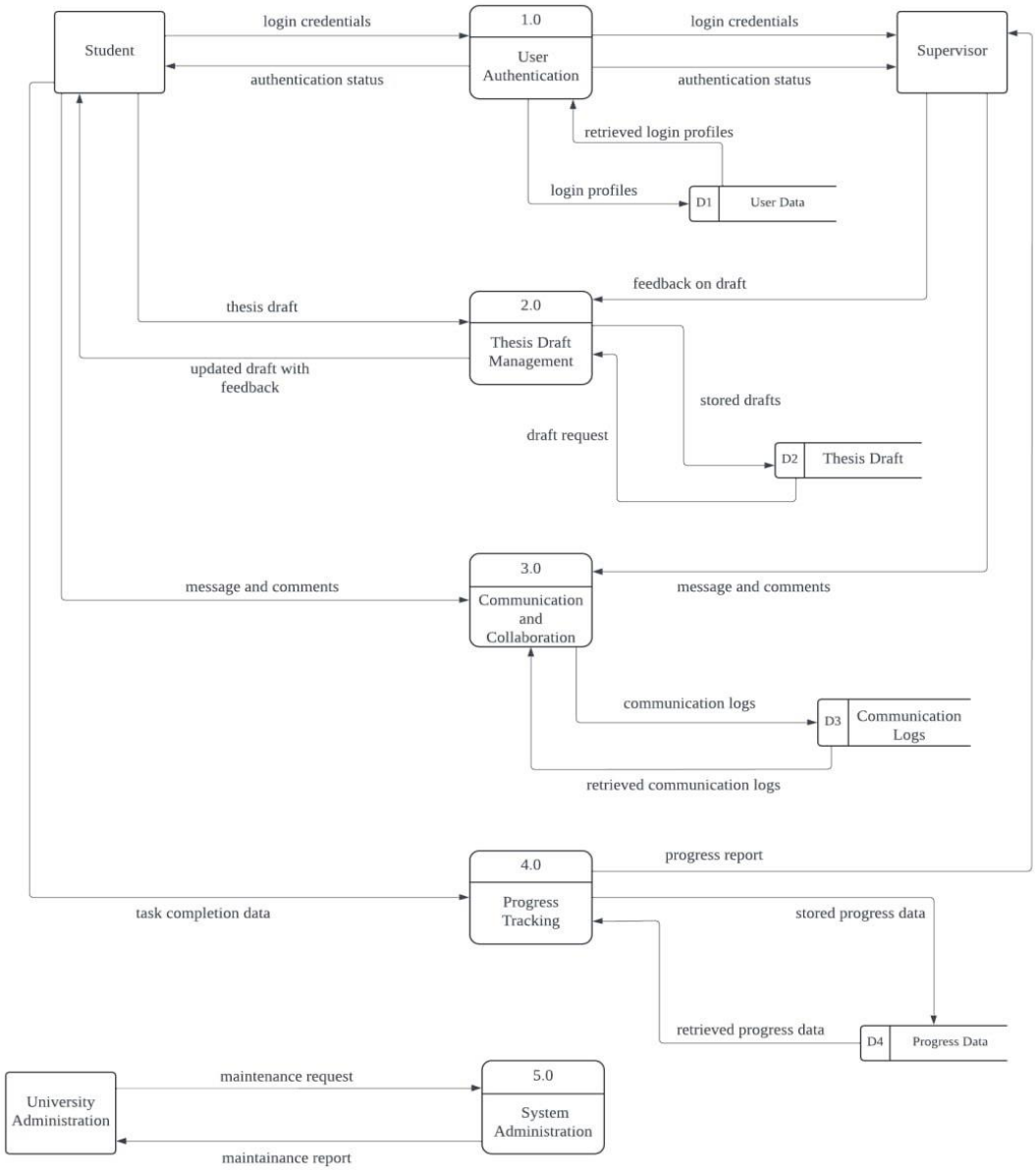


5.0 Logical DFD (AS-IS)

5.1 Context diagram

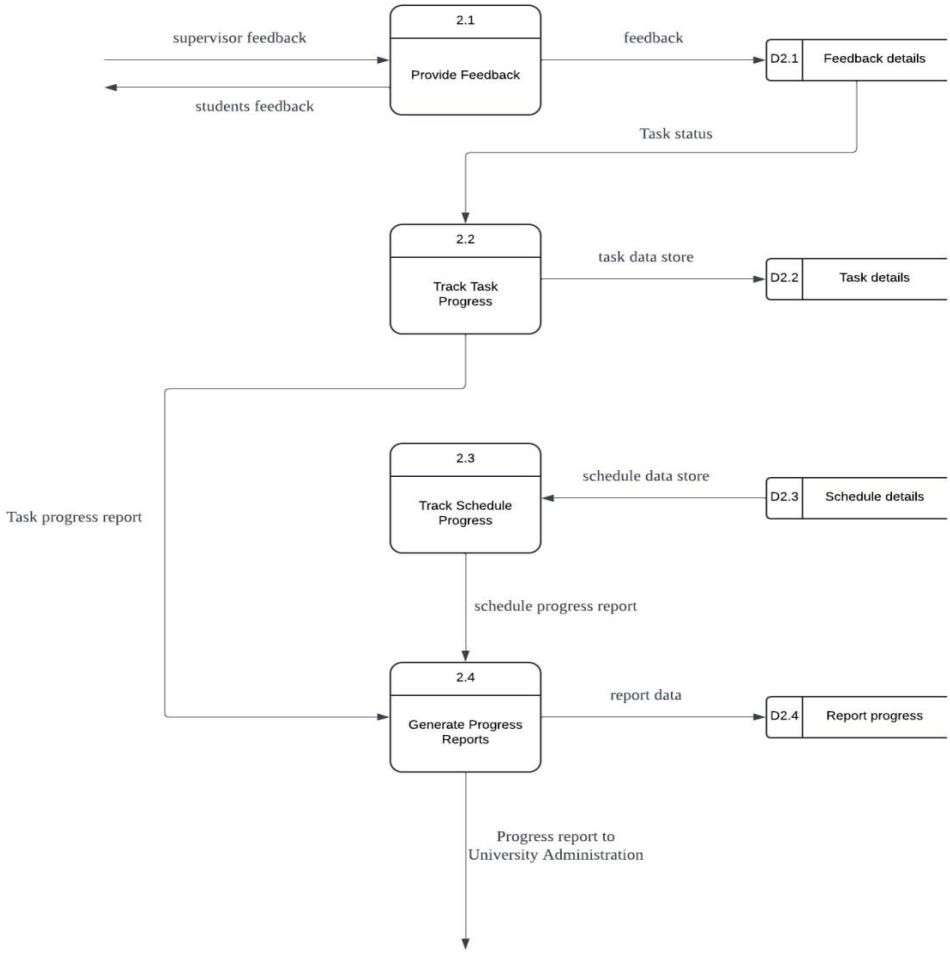


5.2 level 0 diagram

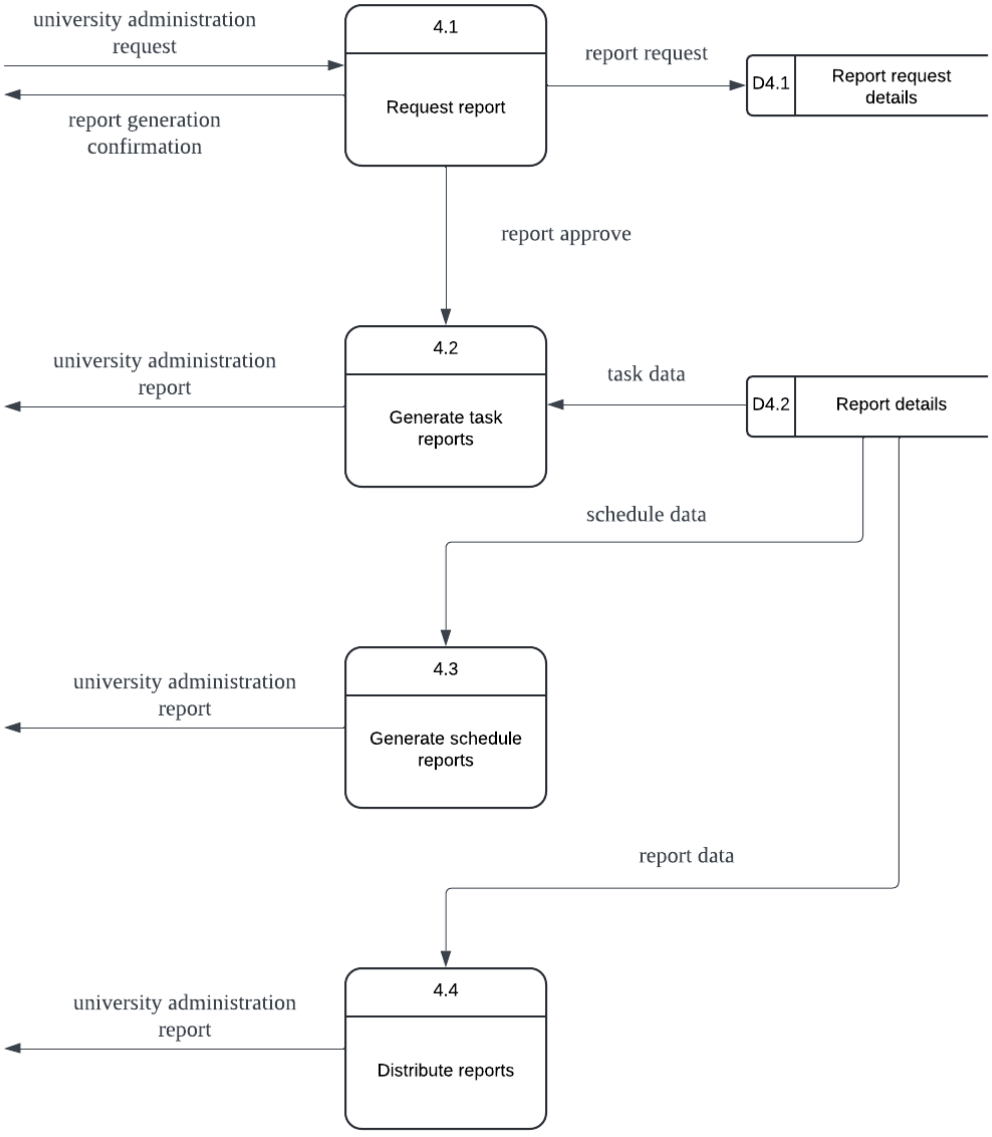


5.3 child diagram

Process 2.0 Thesis Draft Management



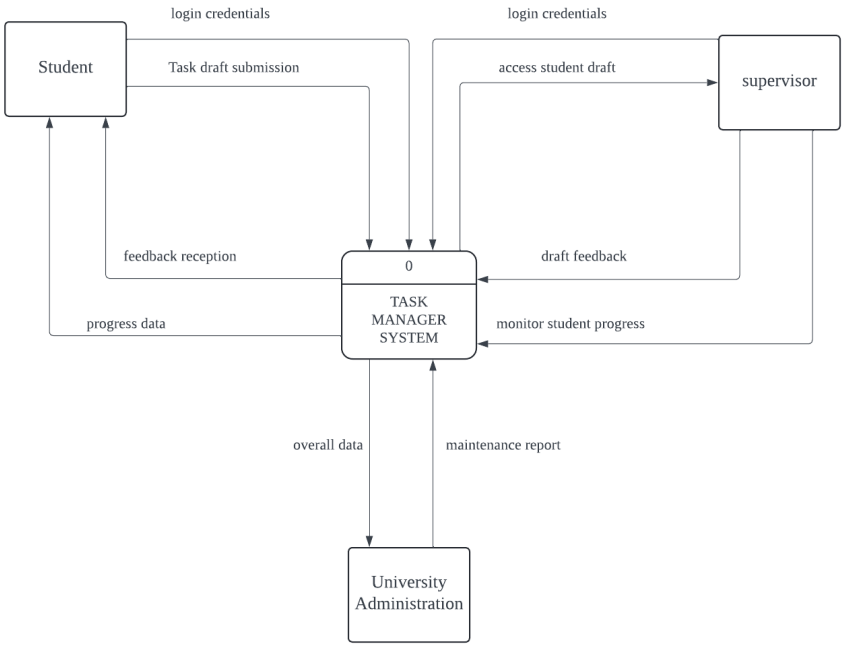
Process 4.0 Progress Tracking



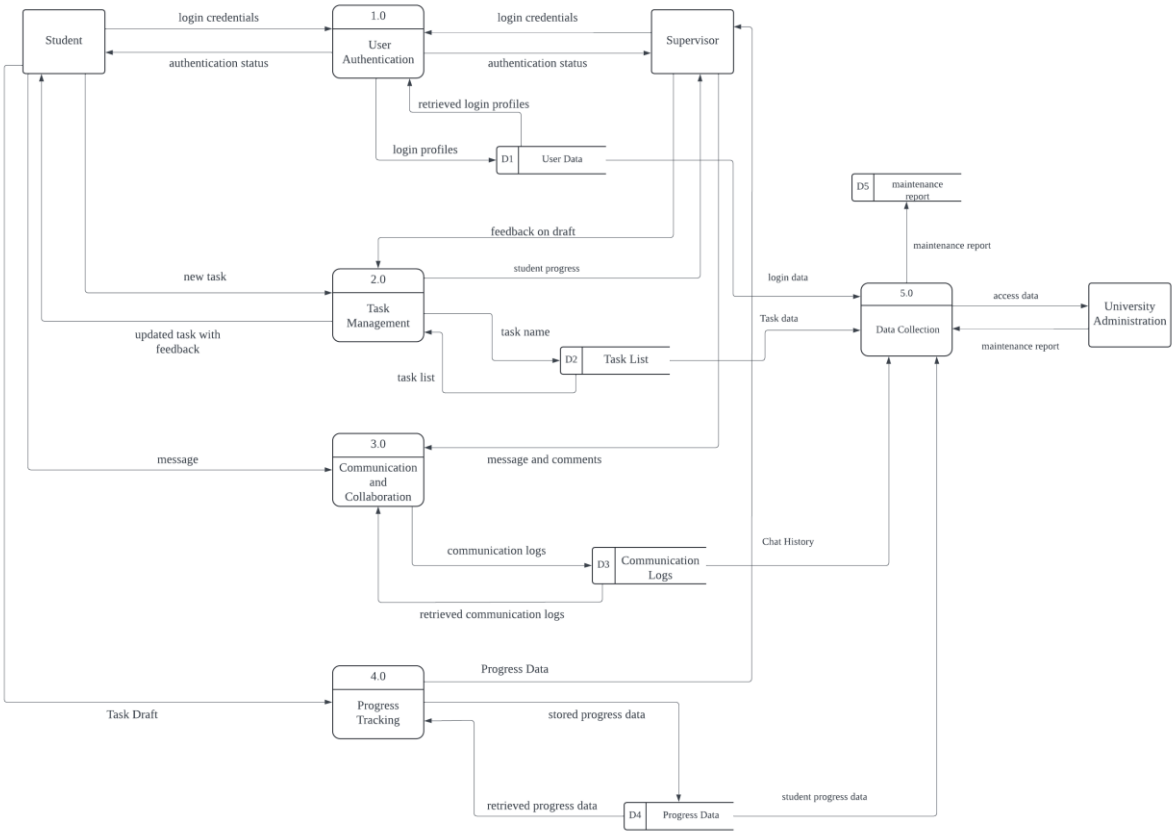
6.0 System Analysis and Specification

6.1 Logical DFD TO-BE system

6.1.1 Context Diagram

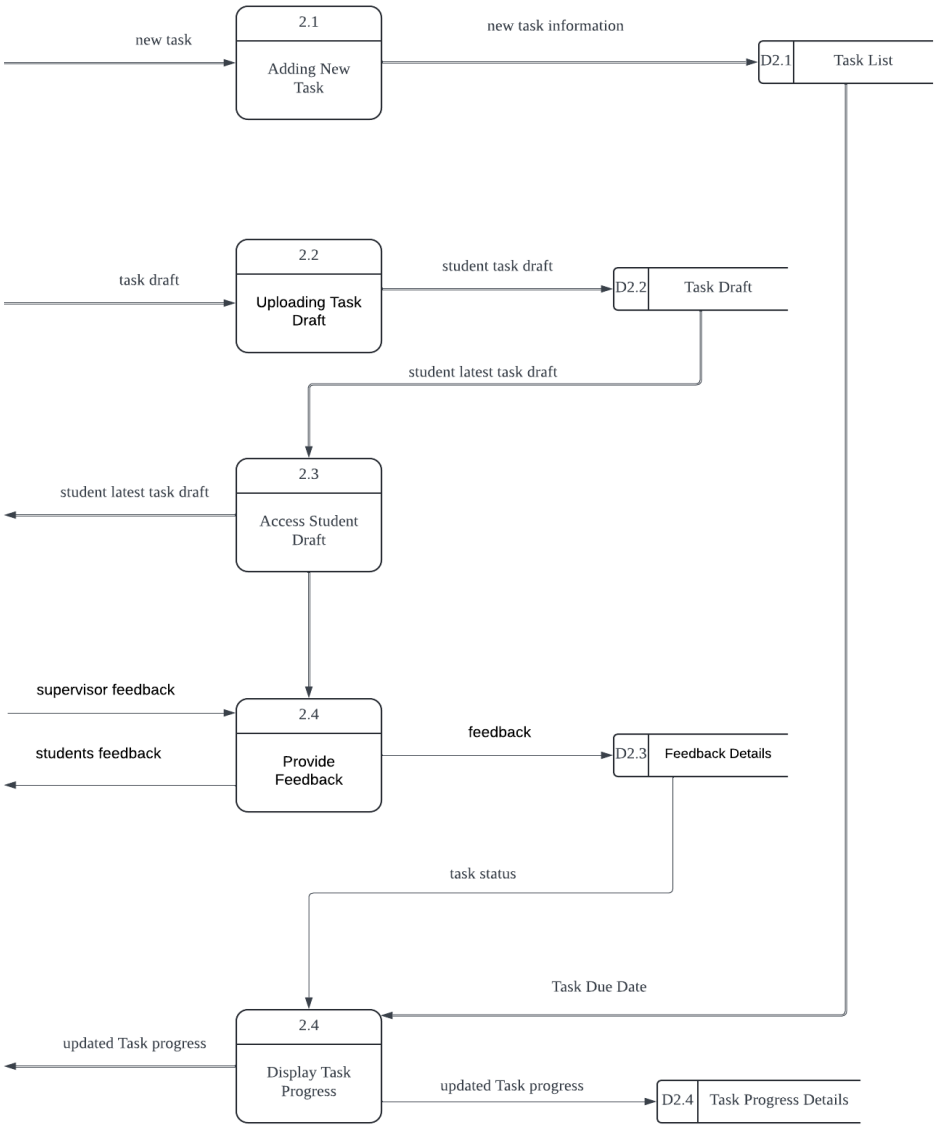


6.1.2 Diagram 0

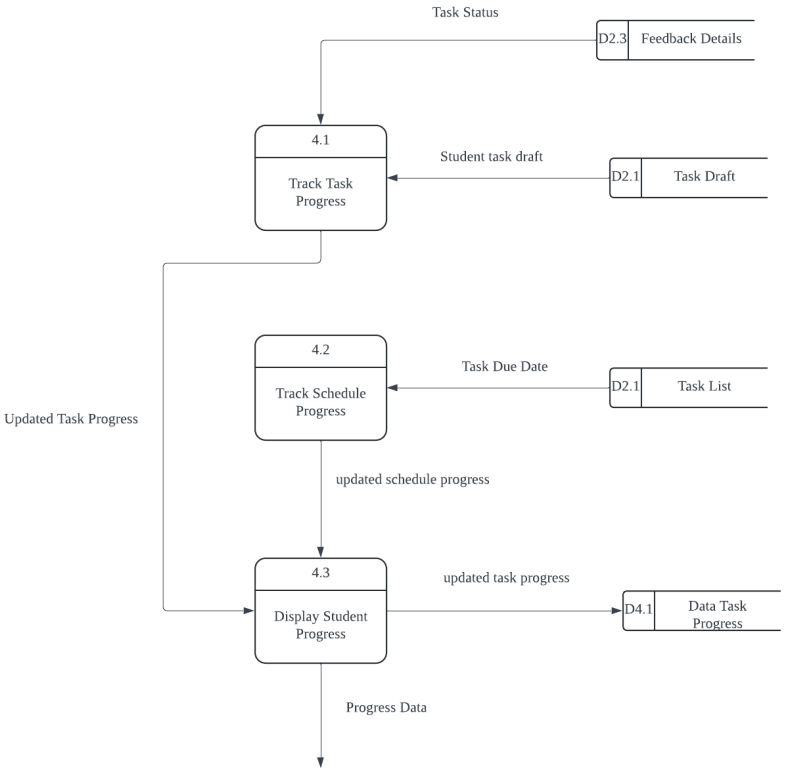


6.1.3 Child Diagram

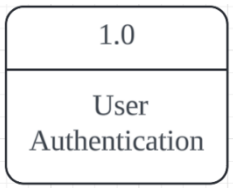
Process 2: Task Management



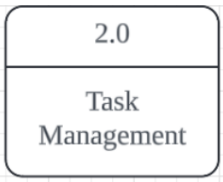
Process 4: Progress Tracking



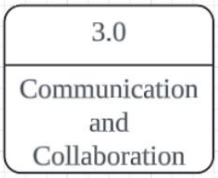
6.2 Process Specification (based on Logical DFD TO-BE)

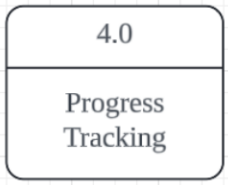
Process	Process Specification Form
	**Input Data Flow:** login credentials, login credentials, retrieved login profiles
	Output Data Flow: authentication status, login profiles

	Structured English:
	START
	VALIDATE login credentials
	BEGIN IF
	IF login credentials IS VALID
	STORE login credentials
	ELSE
	GO to login page
	END IF
	END

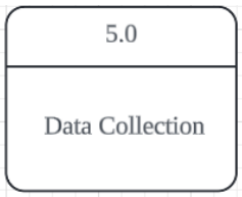
	**Input Data Flow:** new task, feedback on draft, task list
	Output Data Flow: task name, student progress, updated task with feedback

	Structured English:
	START
	WHILE (newtask< 50)
	ADD new task
	STORE new task
	SEND student progress
	RECEIVED feedback
	UPDATE student task
	DISPLAY task list
	ENDWHILE
	END

	**Input Data Flow:** message, message and comments, retrieved communication logs
	Output Data Flow: communication logs
	Structured English: START SEND message RECEIVE message

	STORE message RETRIEVED message END
	**Input Data Flow:** Task Draft, retrieved progress data
	Output Data Flow: Progress Data, stored progress data

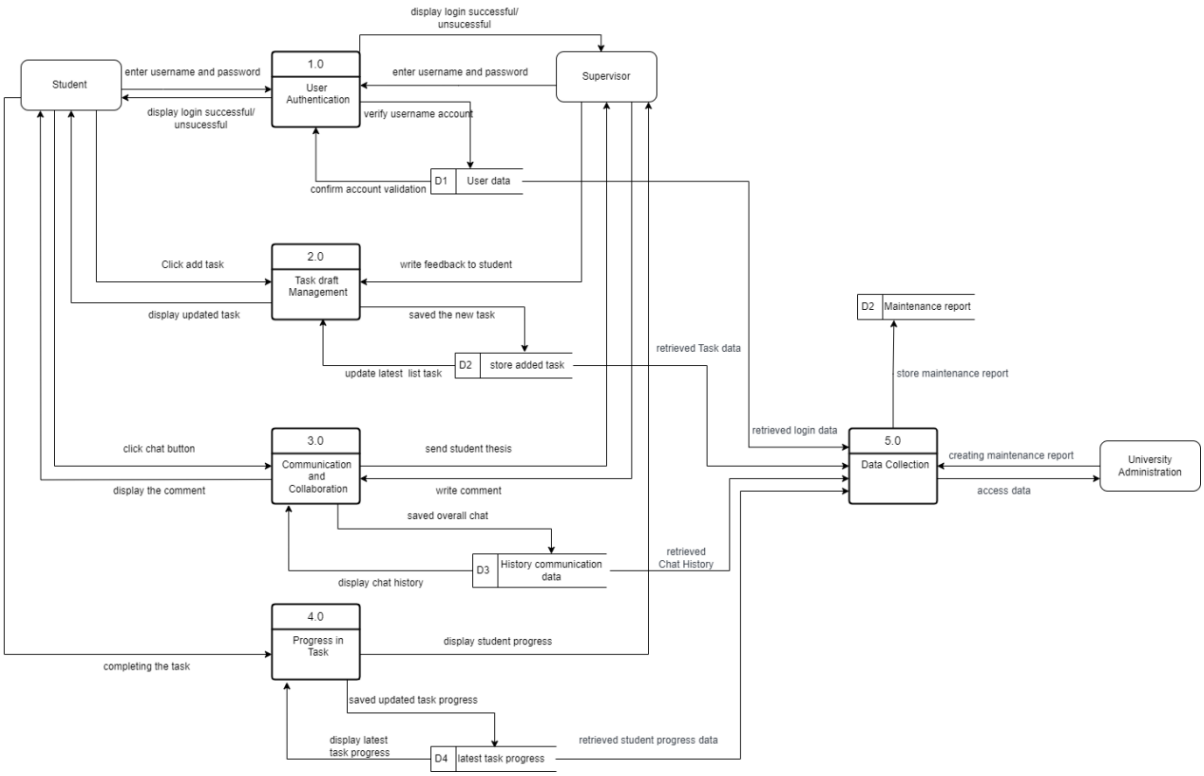
	Structured English:
	START
	WHILE (task < totaltask)
	VALIDATE task draft
	SEND progress data
	STORE progress data
	RETRIEVED progress data
	DISPLAY progress data
	ENDWHILE
	END

	**Input Data Flow:** login data, Task data, Chat History, student progress data, maintenance report
	Output Data Flow: access data, maintenance report
	Structured English: START RETRIEVED login data, task data, chat CREATE maintenance report STORE maintenance report SEND maintenance report DISPLAY maintenance END

7.0 Physical System Design

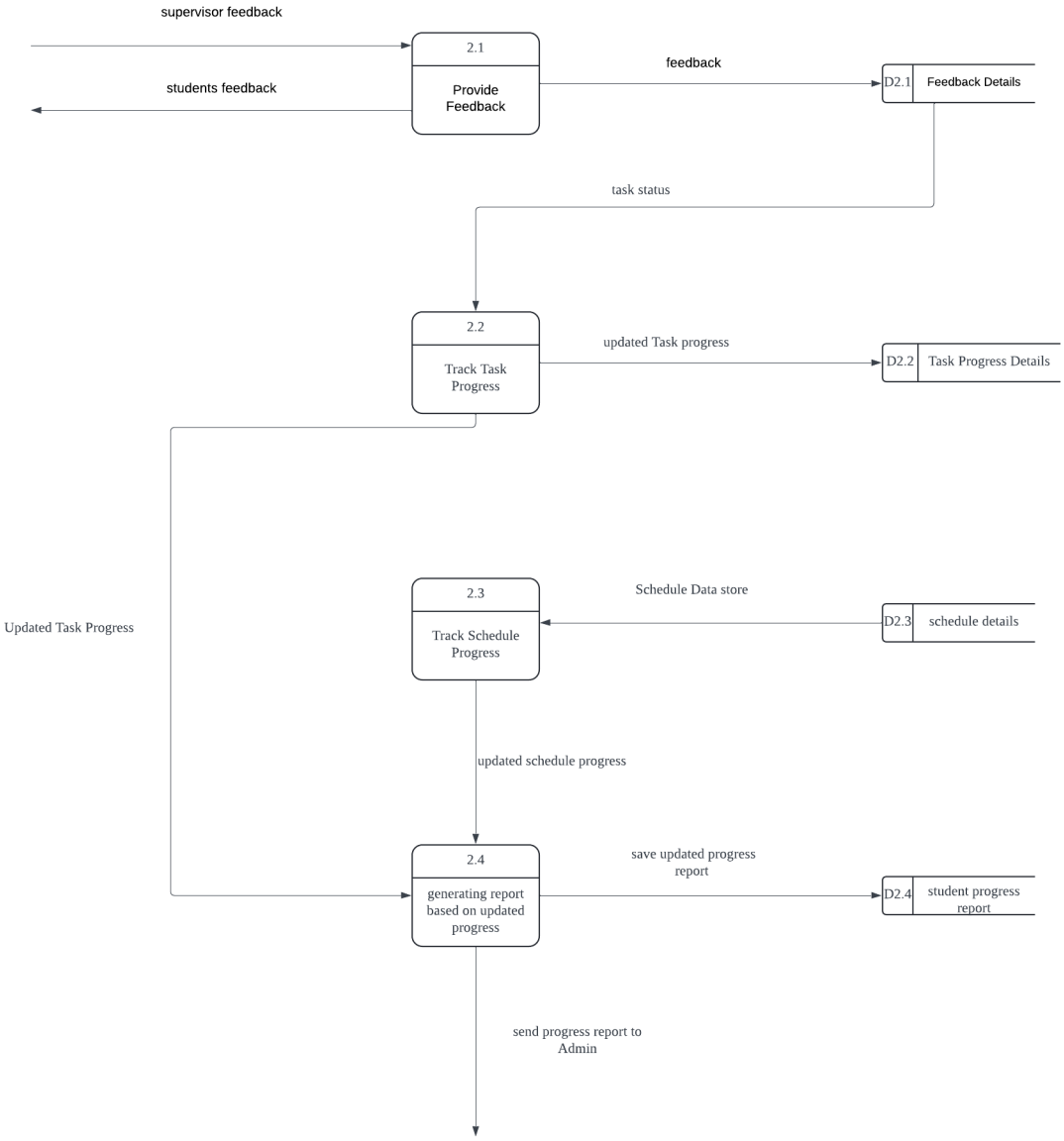
7.1 Physical DFD TO-BE system

7.1.1 Diagram 0

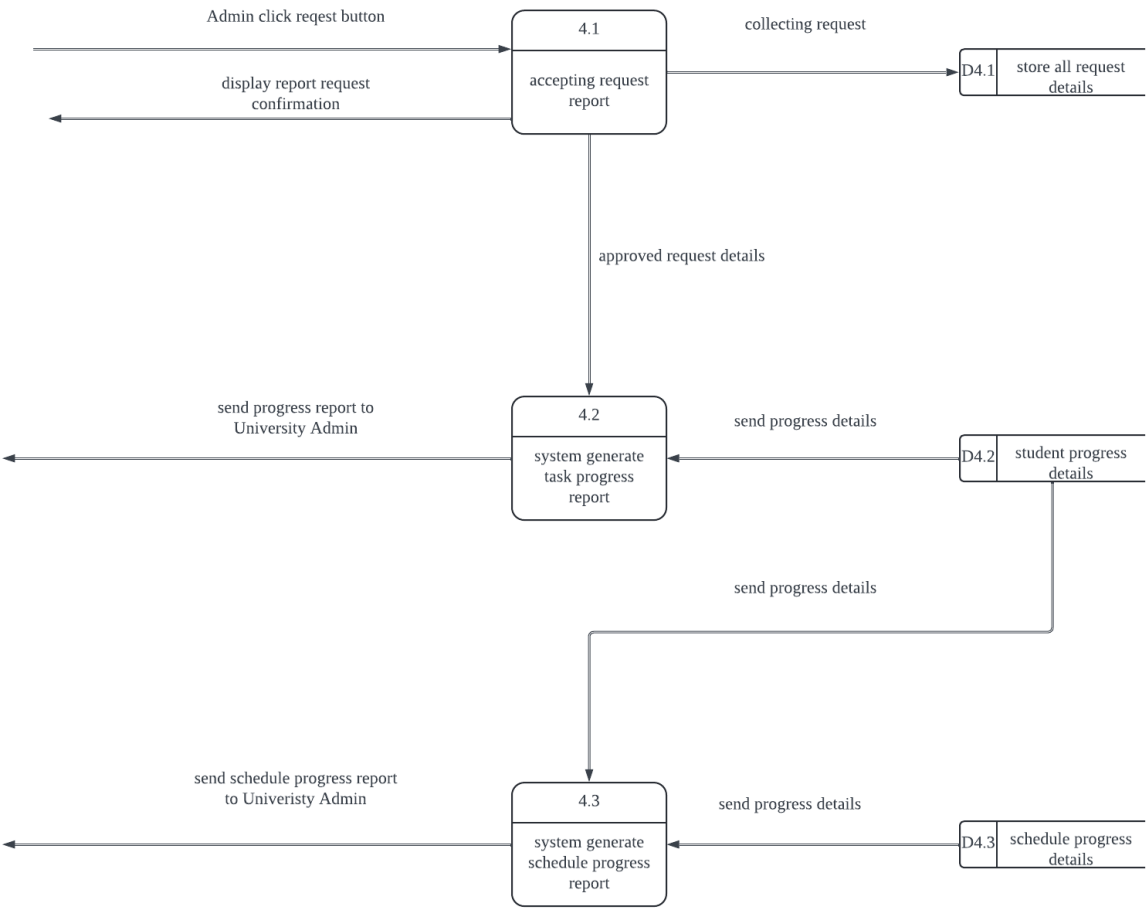


7.1.2 Child Diagram

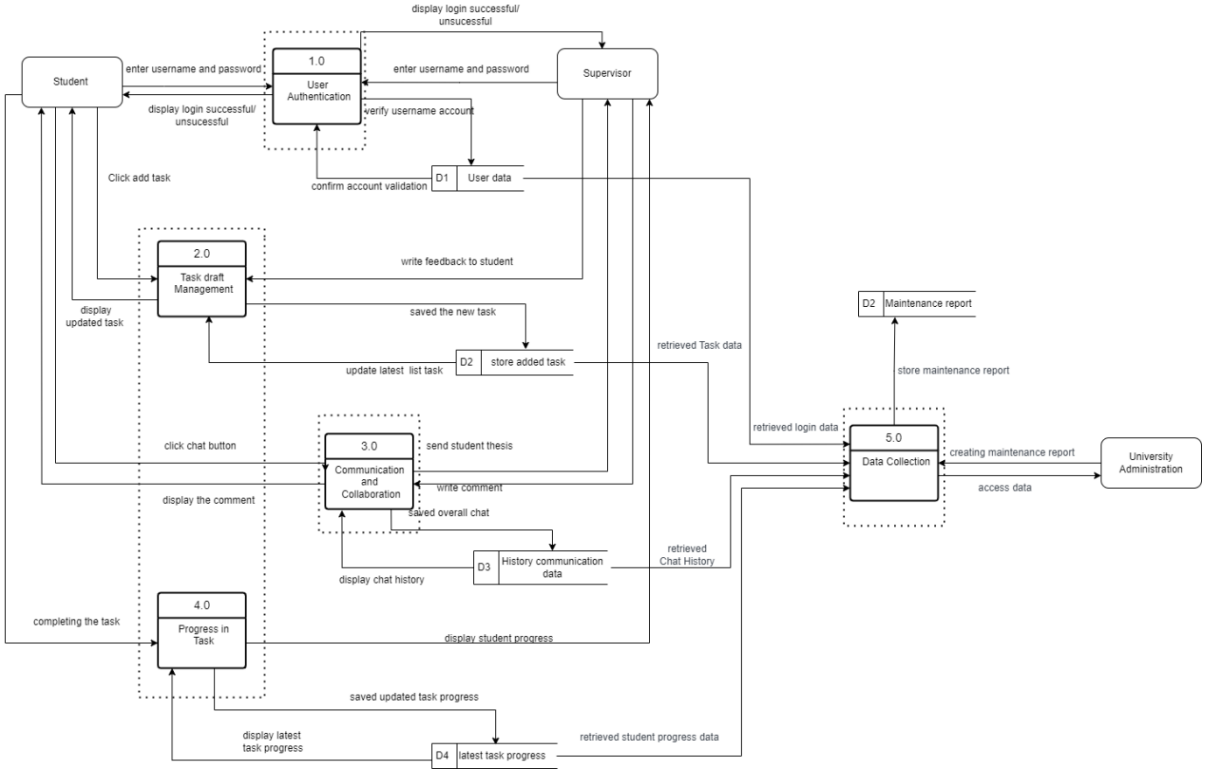
Process 2: Task draft Management



Process 4: Progress Tracking



7.1.3 Partitioning



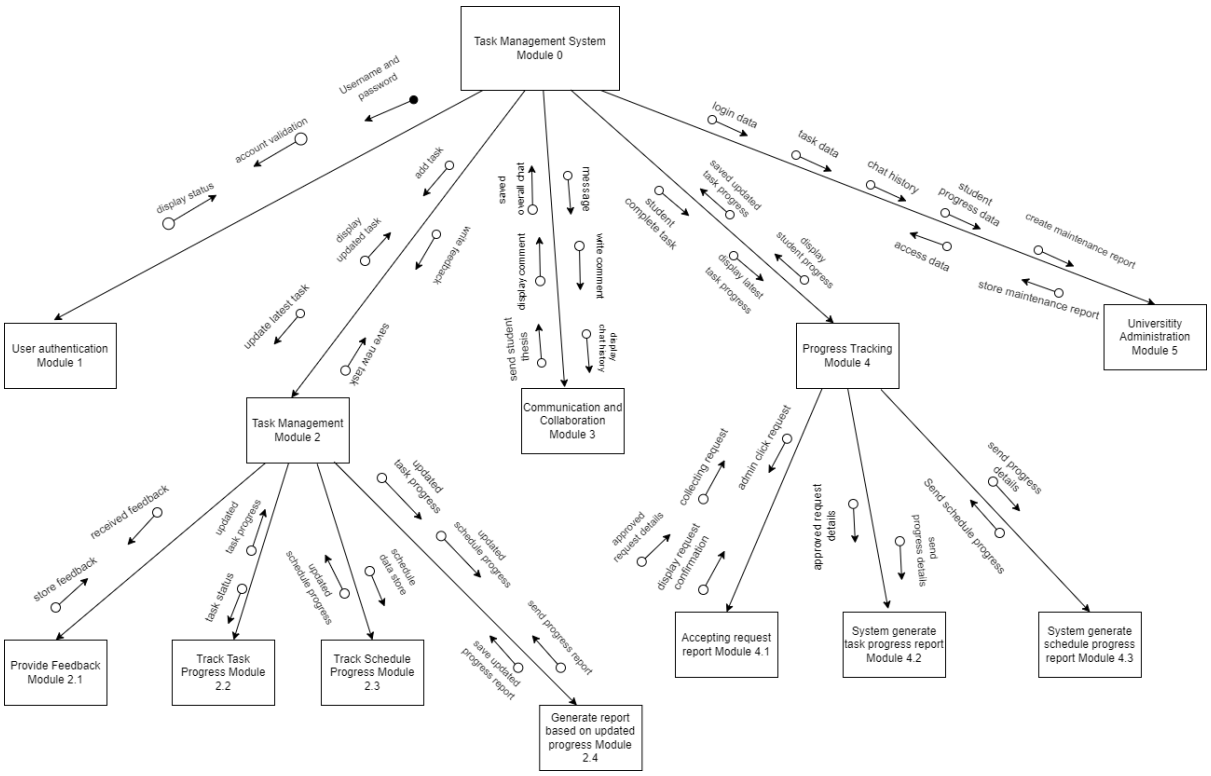
7.1.4 CRUD Matrix

Activity	User Account (Student)	User Account (Supervisor)	Tasks	Notification (Message, Reminder, Overdue Task)	System Administrator
Logging in process	R	R			CU
Manage Notification	R	R	R	CU	
Thesis Paper	CRUD				
Task Management and Scheduling	R	CUD	RU		
Task Listing			CRUD		
Chat Tools	CRUD	CRUD		U	
Security Measurement					CRU
C = Create/Capture/Gather R = Read/Access U = Update D = Delete					

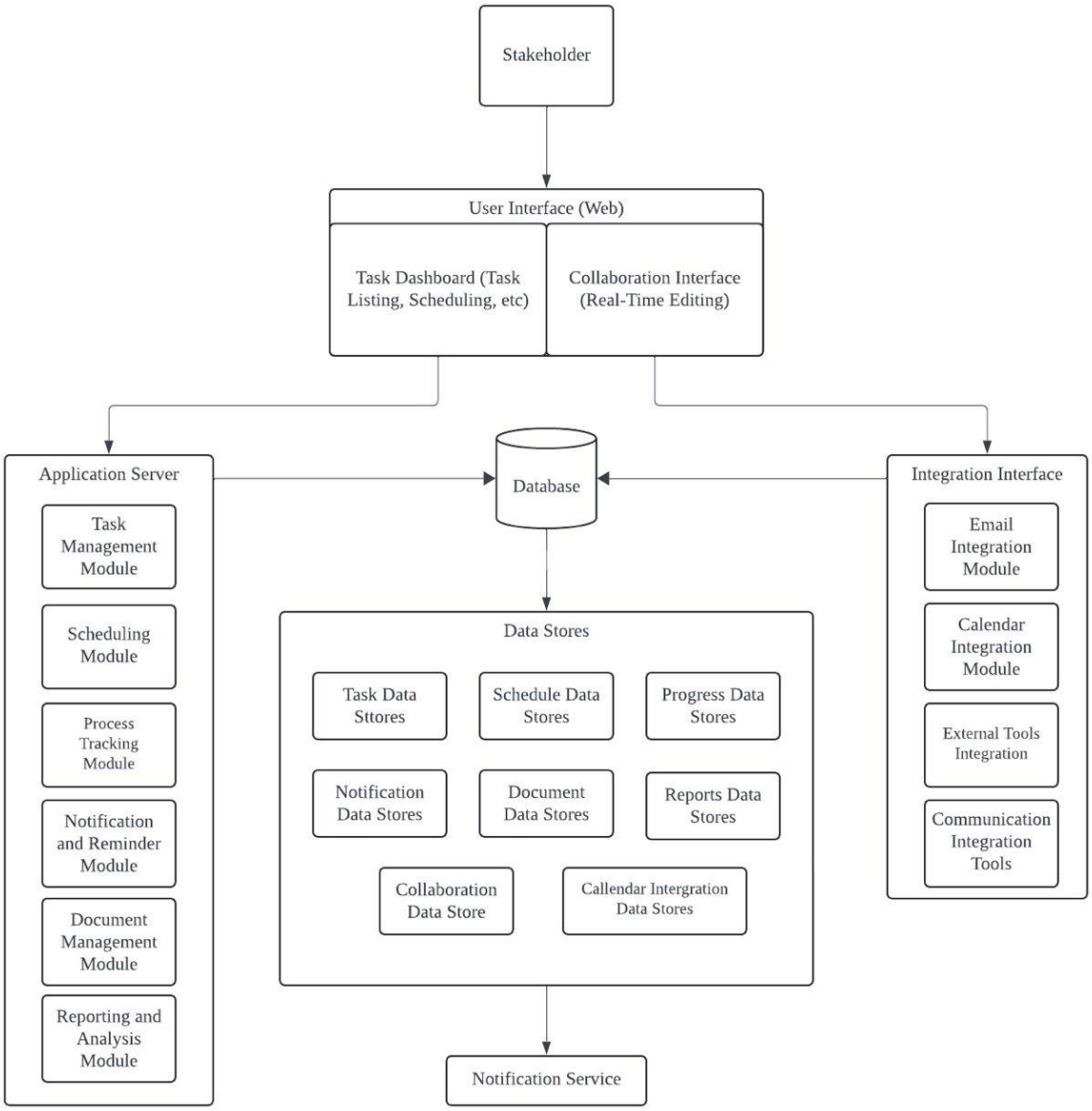
7.1.5 Event Response Table

Event	Source	Trigger	Activity	Response	Destination
User Logs in	User, System Administrator	User submits login details	Find user record and verify password	Authentication granted	User
Manage Notification	System Administrator	Event or status update	Generate and send notification	Send notification to user	User
Thesis Paper Submission	Student	Student submit thesis paper	Upload and store thesis paper	Notify supervisor or new submission	Supervisor
Task Management and Scheduling	User	User creates or updates task	Create or update task, set deadline update status	Update task status	System Administrator
	System Administrator	Manage and execute task	Assign task to user		
Task Listing	User	User views task list	Update new task	Display Task List	User
	System Administrator	Set access permission	Retrieve, filter and sort tasks		
Chat Tools	User	User initiates or responds to chat	Send and receive chat messages	Update chat thread	User
Security Measurement	System Administrator	Admin updates security settings	Authorize user's new details, monitor access logs	Update security protocols and authorize access	System administrator

7.1.6 Structure Chart



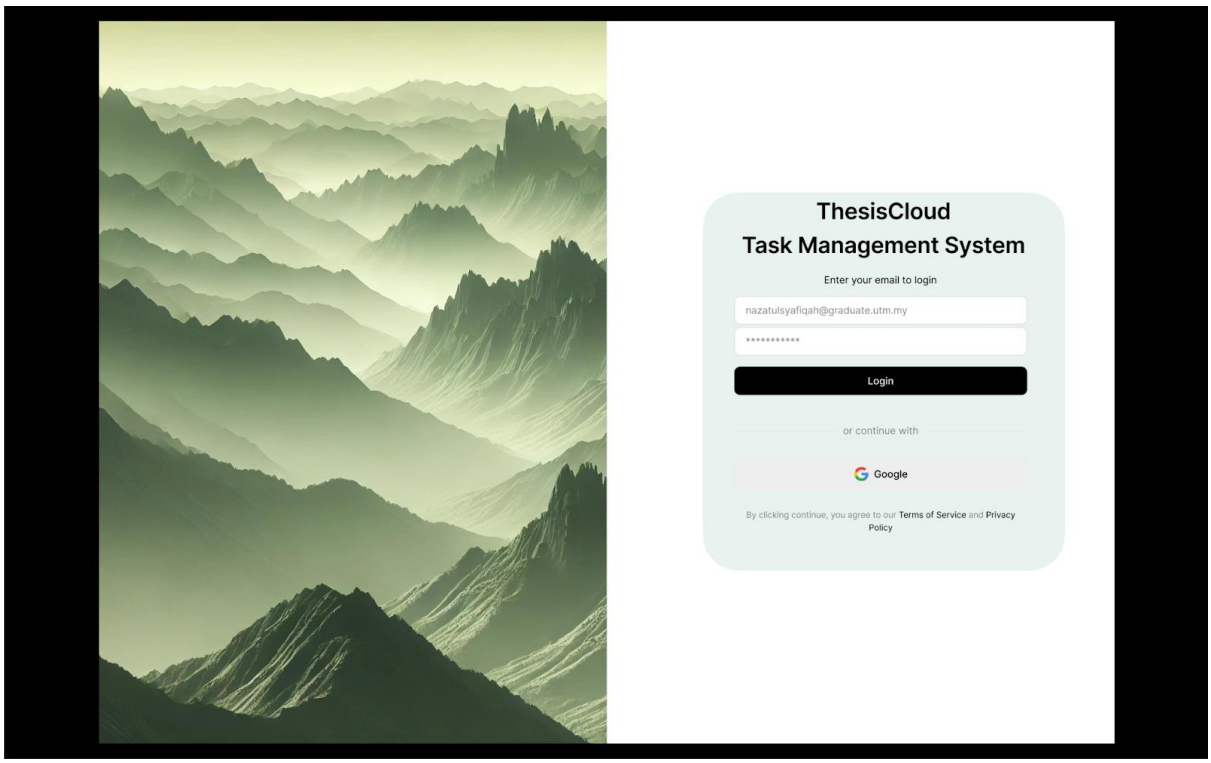
7.1.7 System Architecture



8.0 System Wireframe

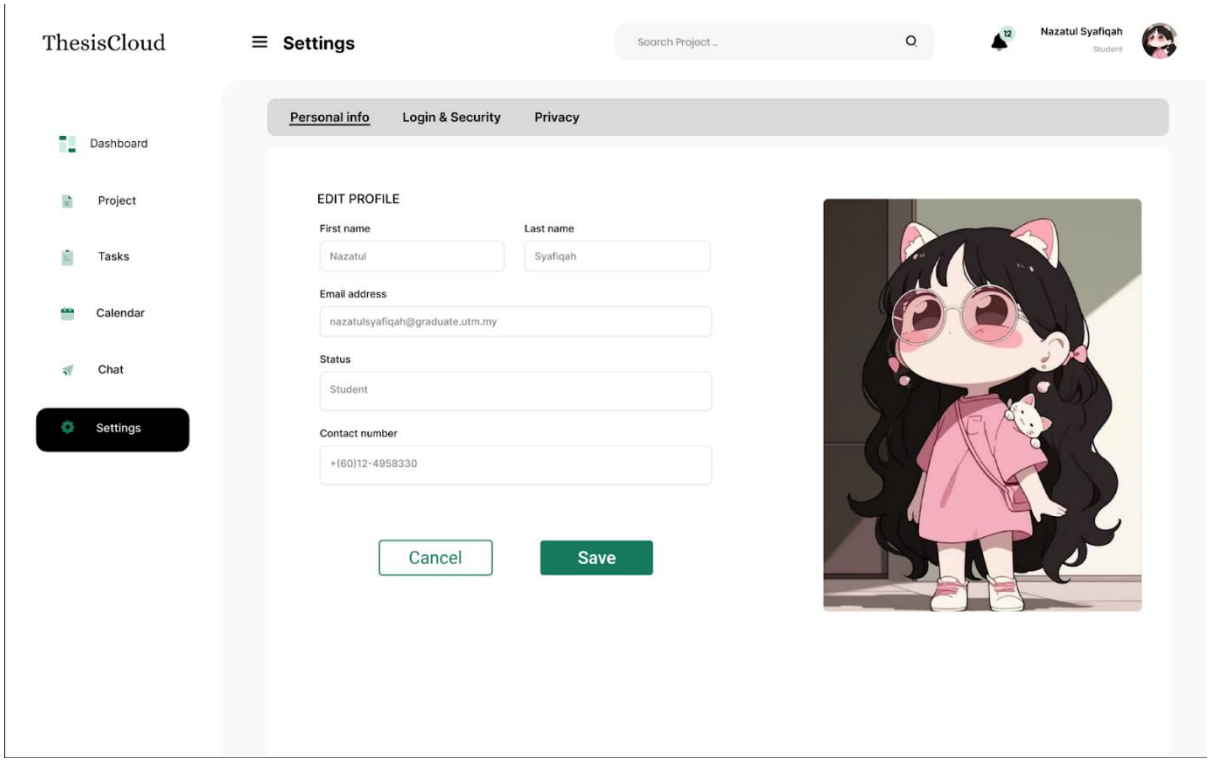
8.1 Input Design

1. Login Page



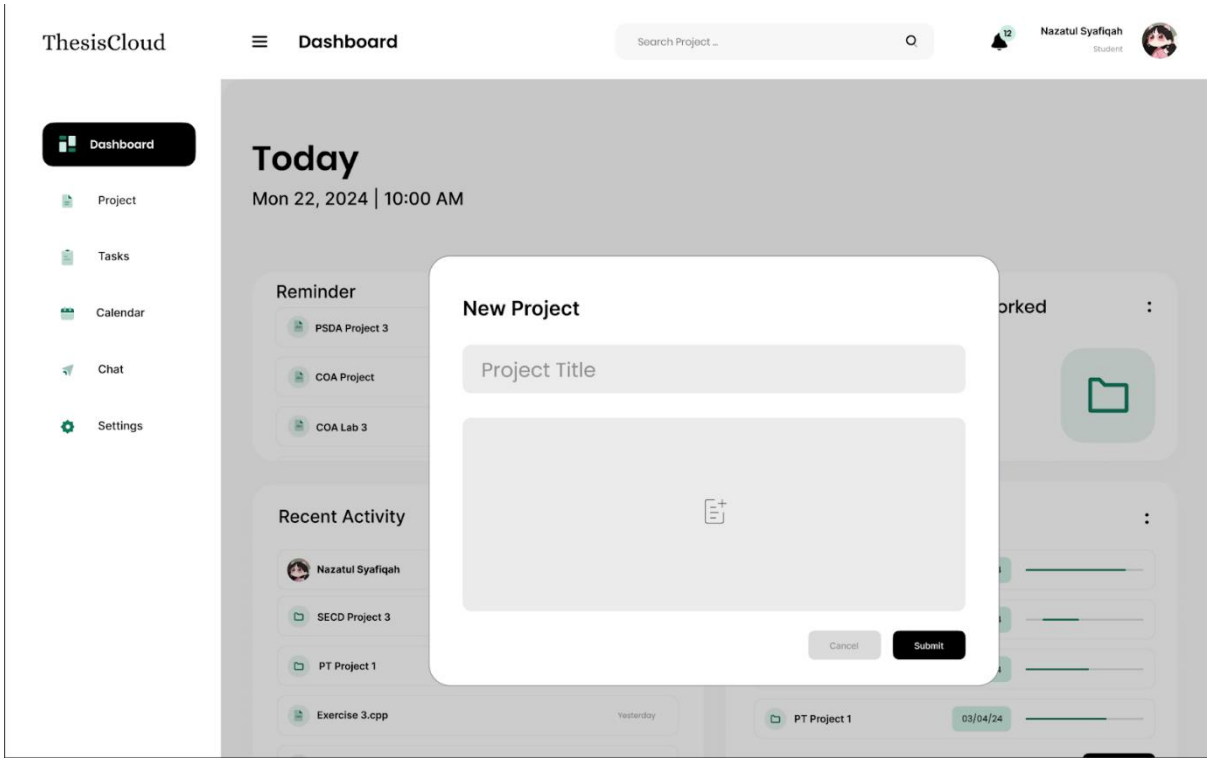
The screen above represents the Account Login page of the proposed ThesisCloud website. This screen allows users to log into their accounts using their email and password to access the website. This page is categorized under input design because it requires users to enter their email and password to gain access to the website. The page will appear during the initial launch of the website, immediately after the user navigates to the site or clicks to open the website.

2. Personal Information Settings Page



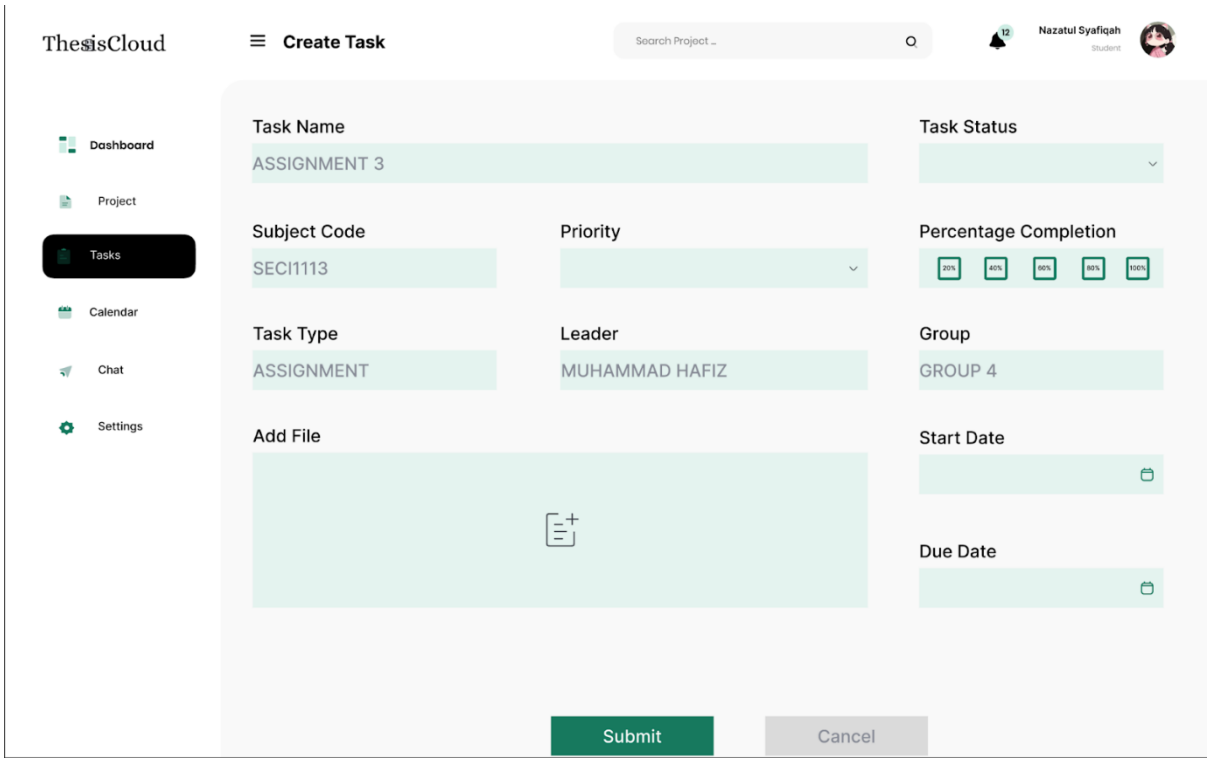
The screen above represents the personal informal settings page of the proposed ThesisCloud website. This screen allows users to change their personal information like their first name, last name, email address, status and contact number. This page is categorized under input design because it requires users to enter their information to change their current profile status and information. The page will appear when the user clicks the settings icon and feature.

3. New Project Page



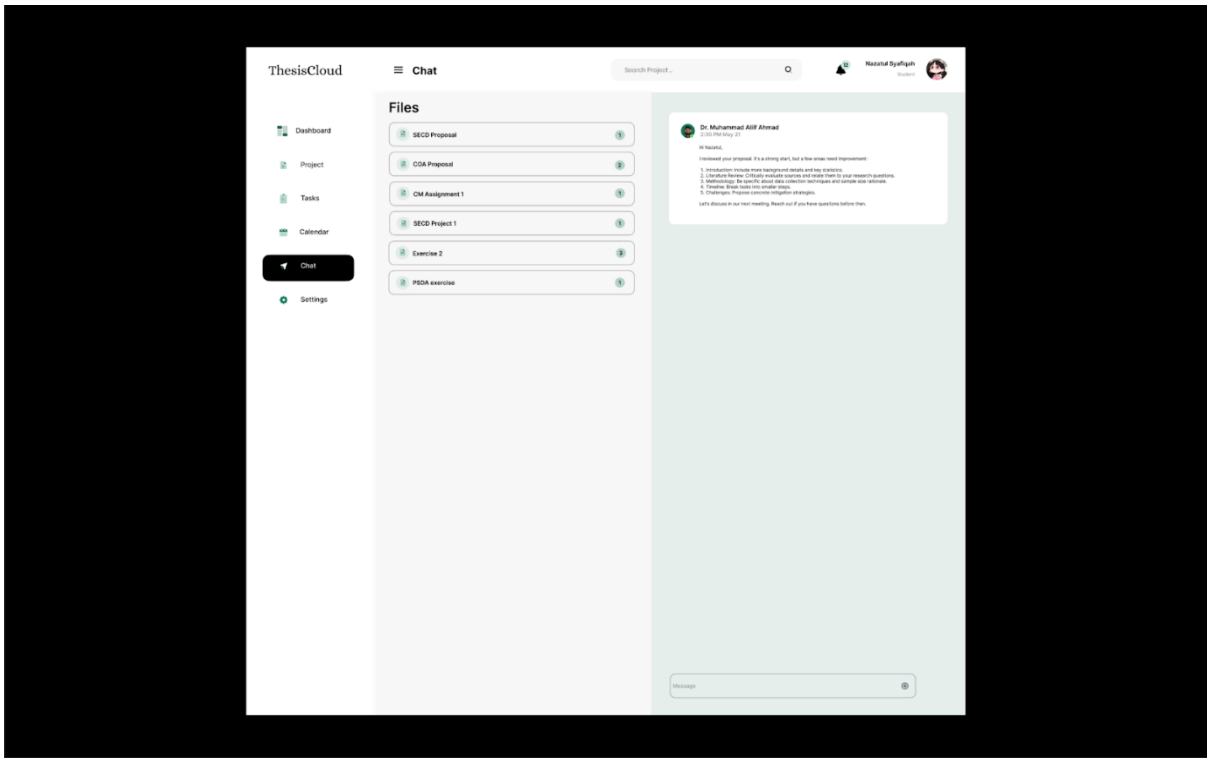
The screen above represents the new project page of the proposed ThesisCloud website. This page allows the users to upload their project file. This page serves as an input design because users will need to enter their attachments and key in the project name. It will be accessible within the website after users navigate to the project feature, providing a streamlined interface for communication and collaboration among postgraduate students and lecturers using the WorkStudio platform.

4. Create Task Page



The screen above represents the create task page of the proposed ThesisCloud website. This page allows postgraduate students and lecturers to create new projects by providing essential details such as task name, subject code, the priority of the task, task type, the leader of the group, task status and the percentage of completion. The name of the group, due date and start date are also able to key in on this page. It falls under input design as users must input all the necessary task information. The create task page can be found in the task section of the website, offering an organized yet user-friendly interface for postgraduate students and lecturers to simplify their work tracking and ensure efficient timely completion of projects and assignments on the WorkStudio platform.

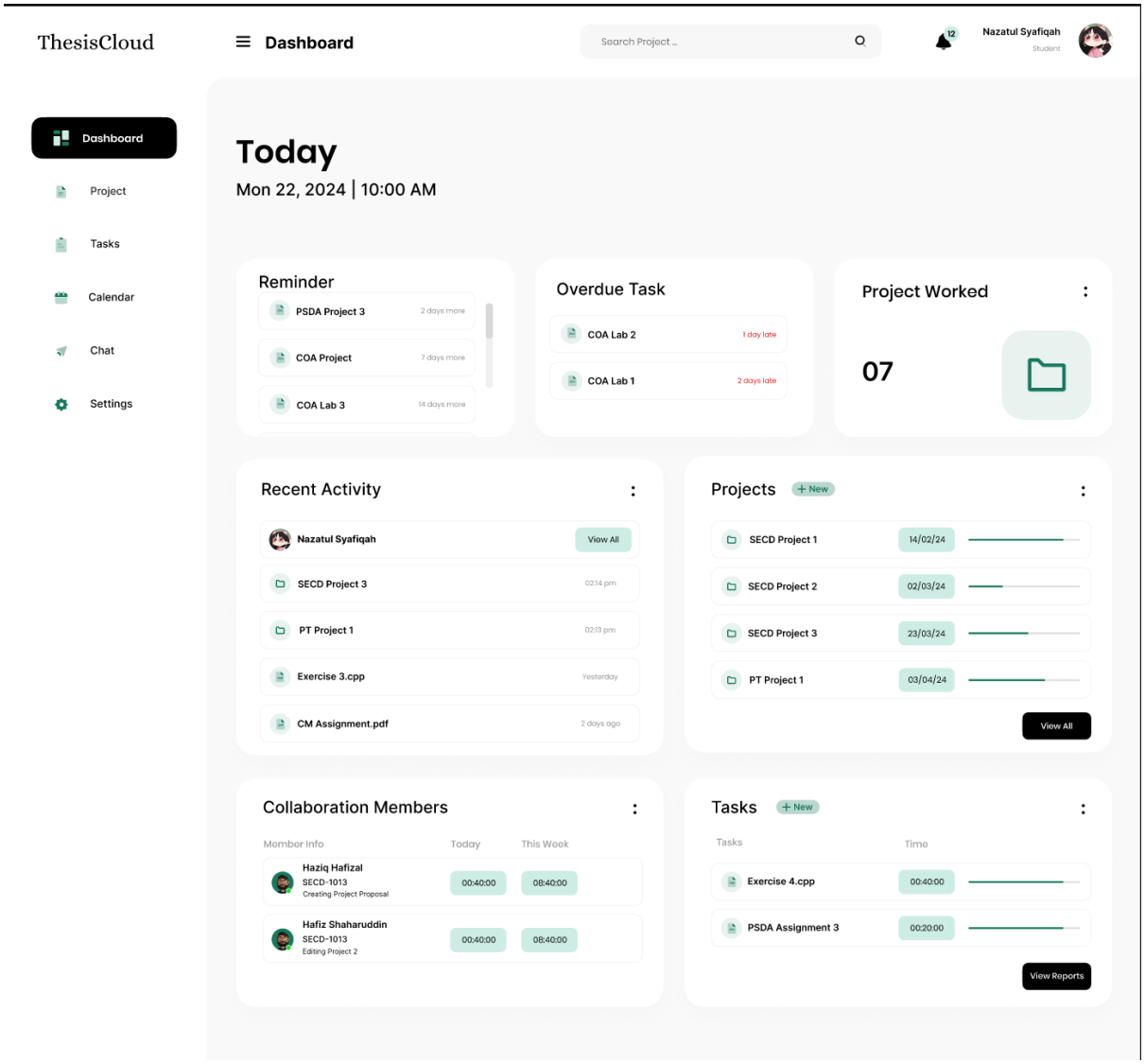
5. Chat Page



The chat page of the proposed ThesisCloud website is shown on the screen above. This page shows all received messages and communications from other users on the platform. It is an input and output design as the chat page presents the ability to chat to other users and presents data to users in a structured layout, enabling them to view, respond to, or save messages and documents. The chat section of the website allows postgraduate students and lecturers to communicate with one another directly on the ThesisCloud platform. This page falls under both input and output design as it displays messages and allows users to manage their inboxes effectively.

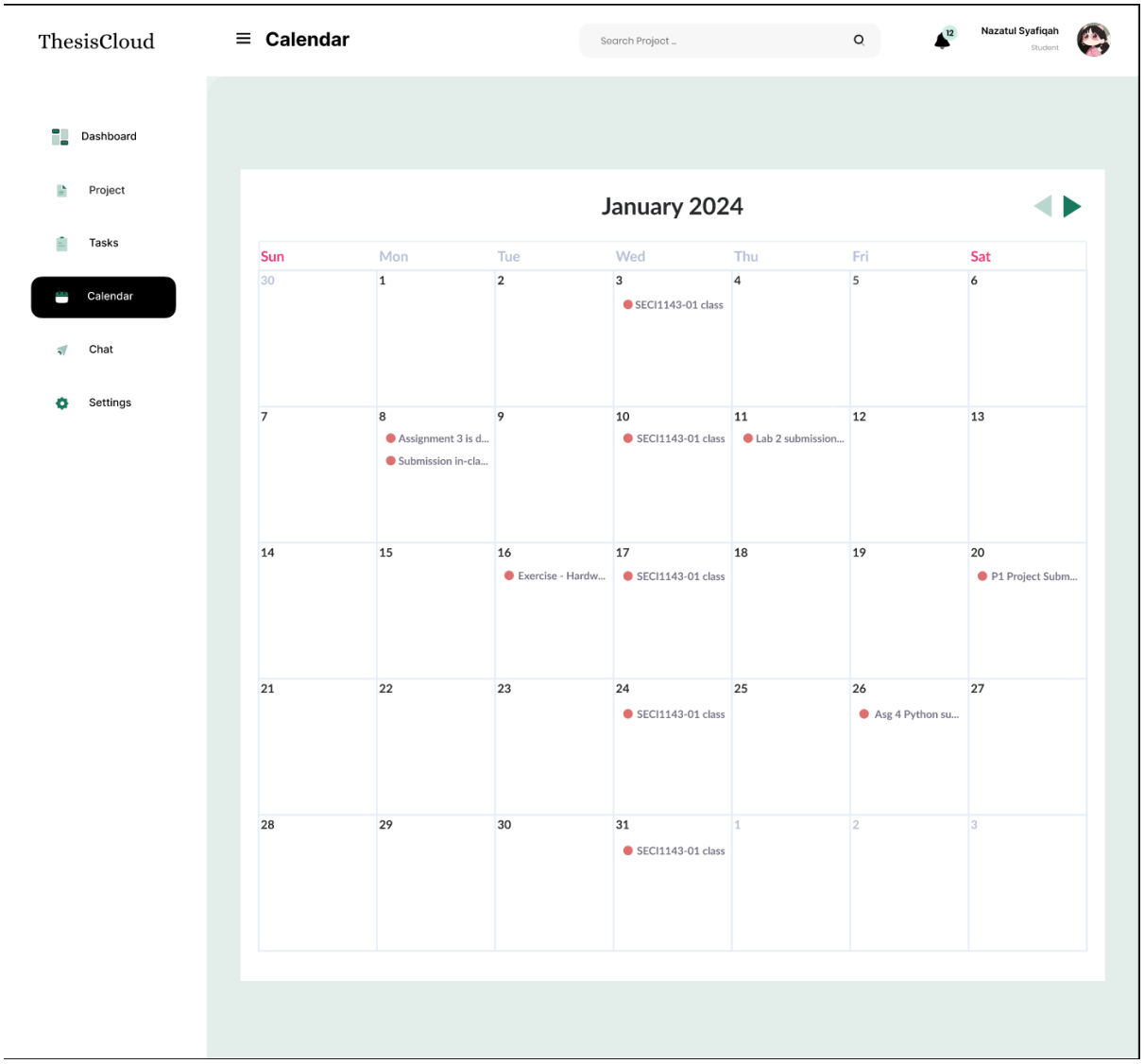
8.2 Output Design

1.0 Dashboard Page



The screen above represents the dashboard page of the proposed ThesisCloud website. This page provides users with an overview list, featuring a task button, project button, calendar button, chat button, and settings button, all of which navigate to their own unique pages. Additionally, users can see their reminders, overdue tasks, projected work, recent activities, projects, collaboration members and tasks. This page falls under output design as it primarily displays an overview of tasks and navigational options without requiring significant user input on this specific page.

2.0 Calendar Page



The screen above represents the calendar page of the proposed ThesisCloud website. This page provides users with a calendar for each month with the task and projects that will appear on the day that it is assigned. This page falls under output design because it displays the days in the calendar of each month and displays the tasks for the users. The user can access the calendar by clicking the calendar button.

9.0 Summary of proposed system

ThesisCloud is designed to make the thesis writing process easier and more efficient for postgraduate students and their supervisors. This online platform replaces old, manual methods with a simple and centralized system that helps manage tasks, encourages collaboration, and boosts productivity.

One of the main features of ThesisCloud is its task management and scheduling. Users can create and organize tasks, set deadlines, and assign team members. The system updates project timelines automatically, helping everyone stay on track and meet their deadlines without needing to update everything manually.
ThesisCloud also makes collaboration smooth and straightforward. The platform allows real-time co-editing of documents, easy feedback exchange, and clear communication among team members. Users can share documents, leave comments, and get notifications for immediate feedback, making the thesis writing process more interactive and efficient.

The system includes automated progress tracking, updating task statuses based on user inputs or predefined actions. This feature provides real-time visibility into the progress of each task. Users can generate detailed reports and visualizations to see how their project is progressing and make informed decisions to avoid delays.

ThesisCloud also sends personalized reminders and alerts to keep users informed about upcoming deadlines, key milestones, and any changes in task statuses. Users can customize these notifications to suit their preferences, ensuring they stay updated without being overwhelmed.

Data management and security are top priorities for ThesisCloud. The system securely stores all data related to tasks, users, and communications. It also integrates with external services like email notifications and authentication, making the platform even more efficient and user-friendly.

By using ThesisCloud, students and supervisors can reduce administrative tasks and focus more on their research and writing. This system not only improves task management but also fosters better collaboration and organization. Overall, ThesisCloud has the potential to transform the thesis writing process, leading to higher quality and more timely research outcomes.