Master of Science (IT) Sem – 07

Lj School Of Computer Applications

Task Management with collaboration

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1. Introduction

- Managing and monitoring tasks is essential during the any kind of product development process. Handling things manually can be rather chaotic at times, especially when a large number of individuals are engaged.
- The "TaskQuest" platform helps users organize and manage team work, get updates, and prioritize reminders.
- The system offers important functions such as progress monitoring, process reporting, collaborations, and quick interaction to improve productivity and efficiency. Team members can remain on top of their work and avoid mistakes.
- The real-time collaboration features empower teams to work together, share updates, and discuss tasks within the app, enhancing productivity and communication.

1.1. Existing System

- The features and functionality of existing task management systems differ but they often include tools for project management, work assignment, and progress monitoring.
- Some existing system doesn’t have robust and secure platform to work in which security is a concern.
- For small teams or users new to platform to work may be overly complex and difficult to learn. It may cost some extra charges to organization.
- Although most systems offer collaboration tools, not all provide seamless real-time updates, which can delay communication and task tracking.

1.2. Need for New System

- The new system can be used to manage the cases more accurately and efficiently.
- System will provide the report generating, organize tasks, real time updates, get reminders and analysis and many more functionalities.
- The need for software that can process information much faster than existing and can therefore help to increase the flow of work and timely availability of information was inevitable. In order to satisfy all above requirement, this software system has been developed and enhanced.

1.3. Objectives for New System

- The aim of creating the task management web app with collaboration is to deliver an easy, efficient, and scalable solution that improves task organization, team communication.
- In order to streamline the task allocation and tracking with team member and provide collaborative feature, the system has been implemented

1.4. Problem Definition

- "TaskQuest" - Task management and collaboration systems achieve the demands of project processes. It provides a platform and allows features to be worked on "Role based access control" and with real time collaboration behaviour to organise the tasks.

1.5. Core components

Admin	Team Member	Team Leader
• Login • Manage Users • Manage Permission access • Assign Projects • Add/promote Leader	• Register • Login • Reset Password • View Tasks • Filter Tasks • Dashboard • Add comment • Manage Profile • Get reminders • Deadline extension	• Login • Generate reports • Manage teams • Manage Tasks • View projects • Manage access

1.6. Project Profile

Project Name	TaskQuest
Front-end	ReactJS, Tailwind CSS
Back-end	ExpressJS
Libraries	Material UI
Database	MongoDB
Tools	MS-OFFICE, DIA Builder, creatly
IDE	Visual Studio Code

1.7. Assumptions & Constraints

- Assumptions:
  - User must need to understand the system to use the system
  - Users will have a reliable internet connection to guarantee that real-time collaboration, data synchronization, and communication functions operate properly.
  - The app assumes an online, real-time environment. Developing an offline mode for users in areas with limited internet access would require additional resources and complex synchronization protocols.
- Constraints:
  - Lack of Backup services
  - Less Scalability
  - less payment methods

1.8. Advantages & Limitations

Advantages	• Enhanced security • Organised flow • Visual Dashboards / reports
Limitations	• User learning curve • Scalability issues • Low maintance

2. Requirement Determination

- Requirement determination for task management involves gathering, analyzing, and documenting the needs and expectations of stakeholders.

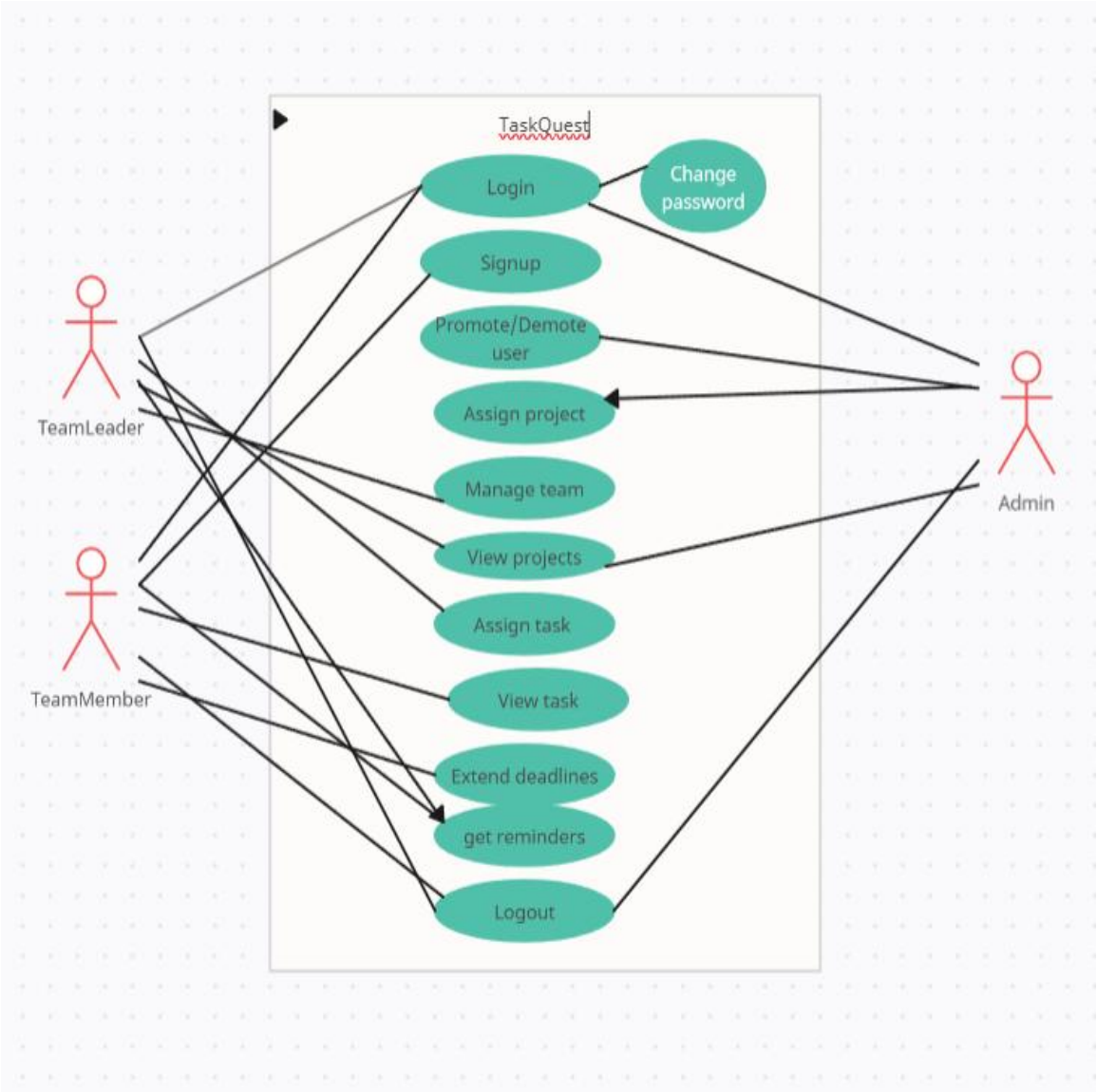
- This phase is consisting of:
  - Surveys & sampling
  - Client's requirements
  - Identifying the non-functional requirements
  - Review existing system if available

2.1. Targeted Users

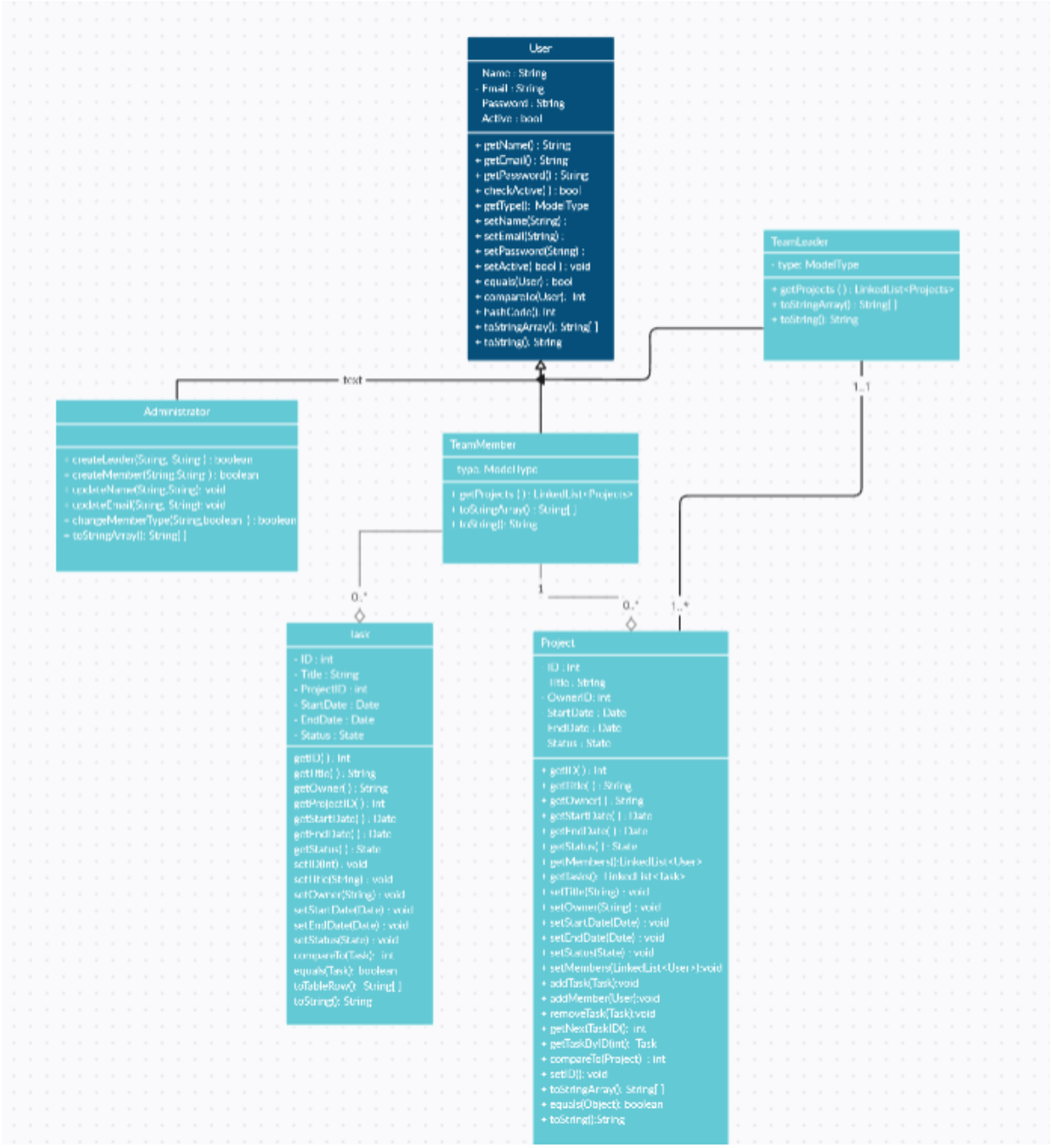
- Team leader
- Team member
- Admin

3. System Design

3.1 Use case diagram

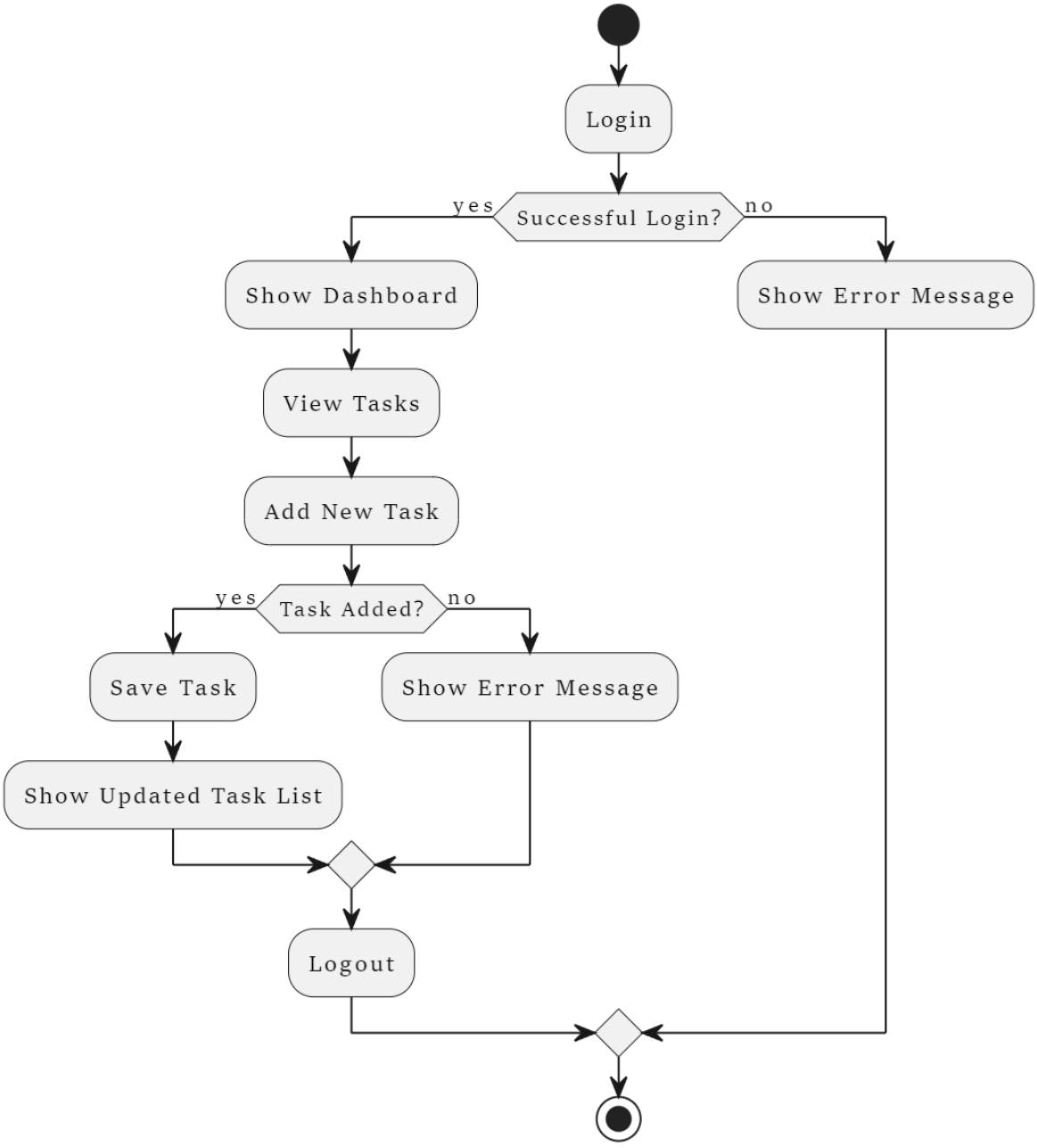


3.2 Class Diagram

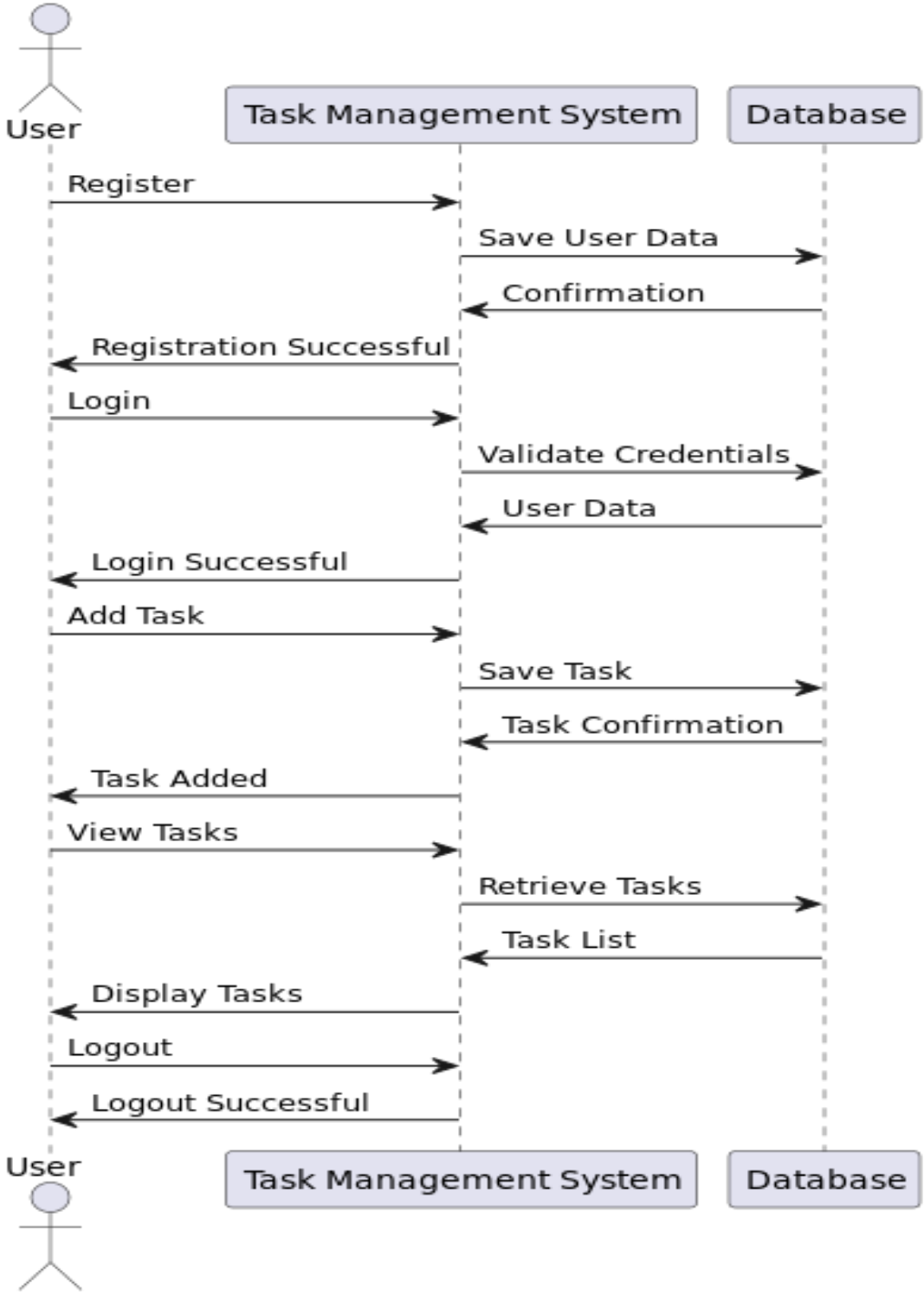


3.4 Activity Diagram

An activity diagram to add task by user



3.5 Sequence diagram



3.5. Data Dictionary

User table

Field	Datatype	Constraints	Description	Sample
_Id	Object	primary key	Table id	ObjectId(“ 66d0b4a3ab787645b3291b70”)
First name	Varchar2(25)	Not null	Firstname of the user	Arnold
Last name	Varchar2(25)	Not null	Lastname of the user	Macwan
Email	Varchar2(25)	Unique	Email of the user	abc@gmail.com
Password	Varchar2(10)	Not null	Password	abc@123
Userprofile	Varchar2(50)	Not null	Path of image of the user	pics/img.png

Task table

Field	Datatype	Constraints	Description	Sample
taskId	Object	Primary Key	Unique identifier for the task	ObjectId("12c0b...")
title	Varchar(50)	Not null	Title of the task	Design UI
description	Text	Not null	Detailed description of the task	Design the login UI
status	Varchar(10)	Not null	Current status of the task	Pending
priority	Varchar(10)	Not null	Priority level of the task	High
dueDate	Date	Not null	Due date for the task	2024-09-10
assignedTo	Foreign Key	Not null	Links the task to the assigned user	userId

Team table

Field	Datatype	Constraints	Description	Sample
Id	Object	Primary Key	Unique identifier for the team	ObjectId("12c0b...")
Team_name	Varchar (50)	Not null	name of the team	Frontend Team
Members	Varchar (50)	Not null	List of the members	[user1,user2]

Comment table

Field	Datatype	Constraints	Description	Sample
Id	Object	Primary Key	Unique identifier for the table	ObjectId("12c0b...")
Author	Foreign key	Foreign key references user table	Links to the user who wrote the comment	userid
Date	Date	Not null	Date of the comment received	20-04-2024
Message	Varchar (250)	Not null	Message description	It was good

Project table

Field	Datatype	Constraints	Description	Sample
Id	Object	Primary Key	Unique identifier for the table	ObjectId("12c0b...")
Name	String	Not null	Name for the project	Chatify
Teams	Array	-	Stores the teams associated with project	[t1,t2]
Assigned to	String	Not null	Stores the detail of leader project assigned to	John Doe
Created_at	Date	Default	Timestamp at time of creation	12-05-2023
Status	String	-	Status of project	Delayed
Due date	Date	-	Deadline date for the project completion	12-07-2024

4. Development

4.1. Coding standard

- Project structure:
  - Use clear and descriptive names for the whole directory of the project and also recommend the naming conventions rules for the variables and functions names.

- Code-version management:
  - Use a version control system (i.e., GitHub) for the project to collaborate effectively.

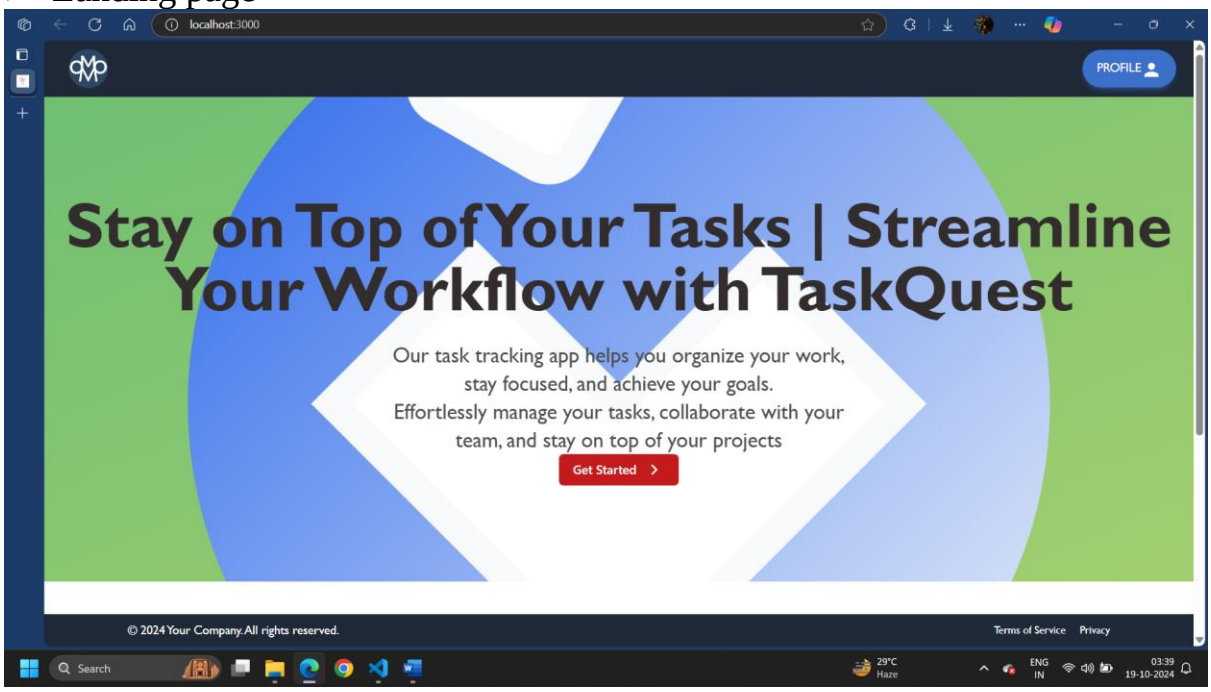
- UI design:
  - Design a user-friendly interface so that user can use the system and understand it easily.

- Error handling:
  - Implement an error free code and use error handling mechanism for user interactions.

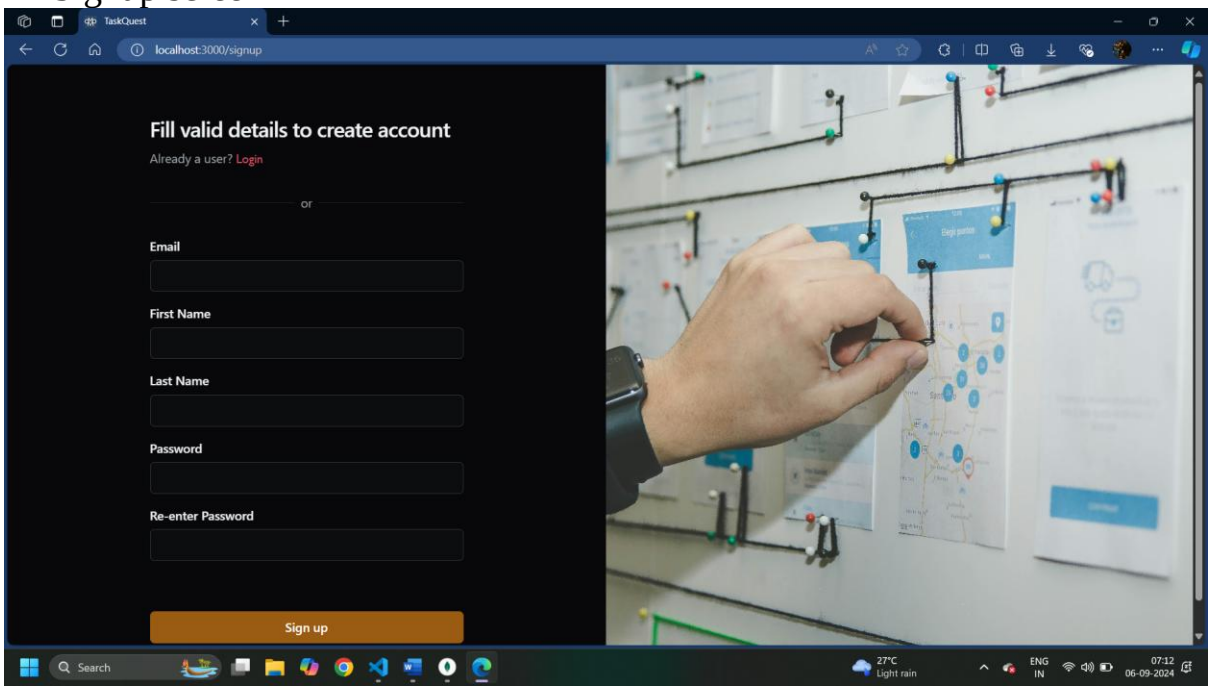
- Further development:
  - Maintain the system as well conduct regular reviews that genuine feedback for the system.
  - Always look for the further improvement of the system that can make the system work more accurate and reliable

4.2. Screenshots

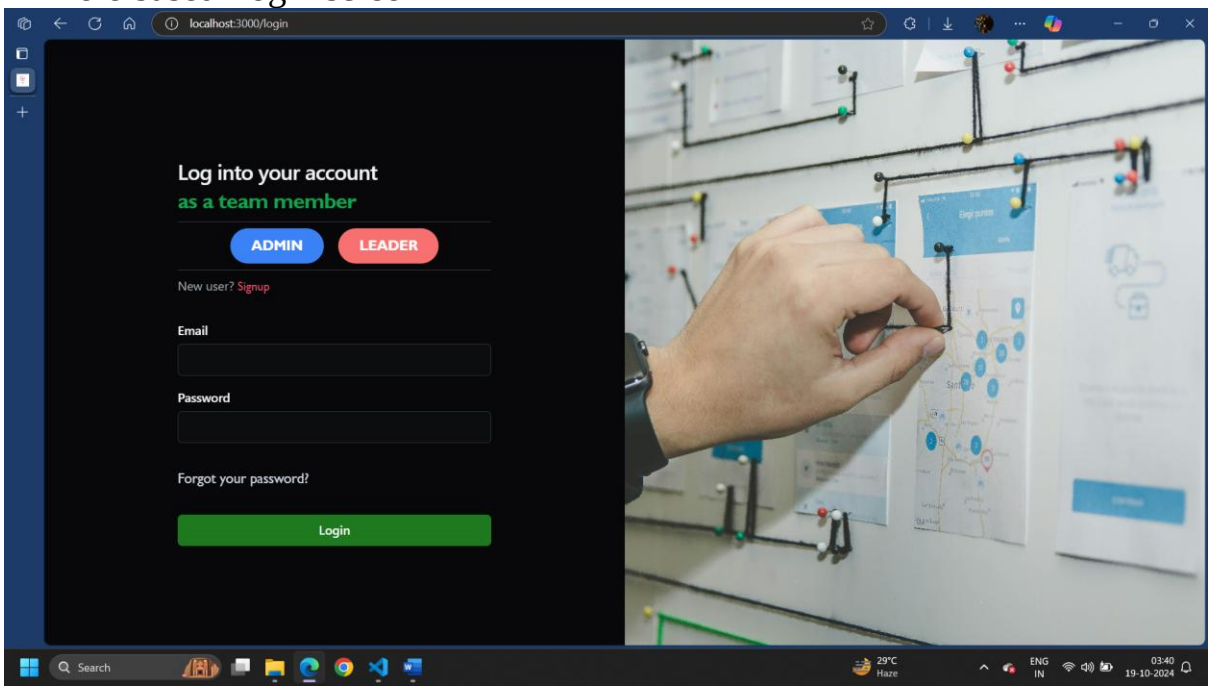
- Landing page



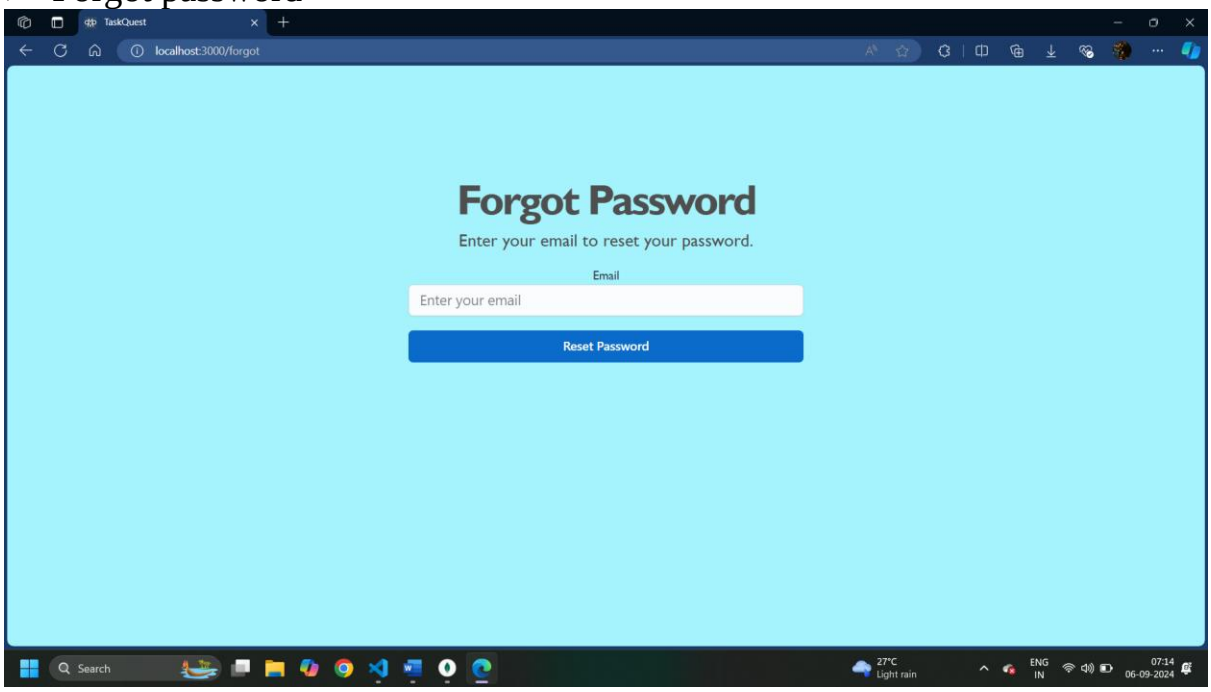
- Signup screen



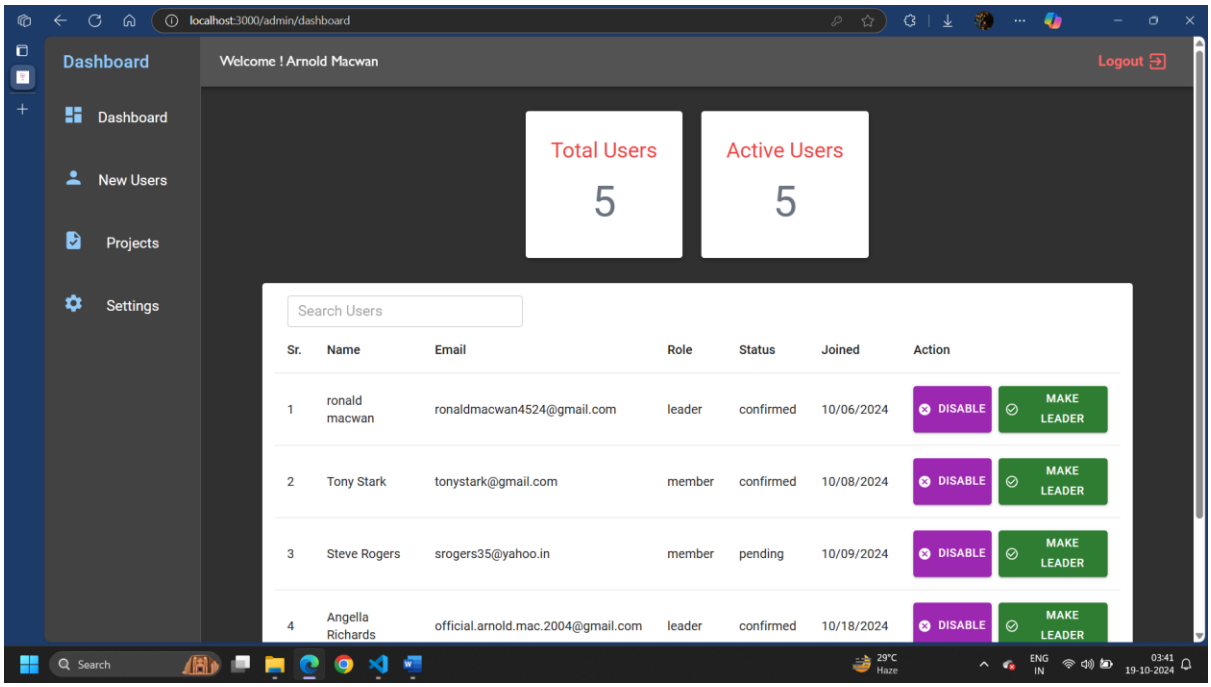
- Role based Login screen



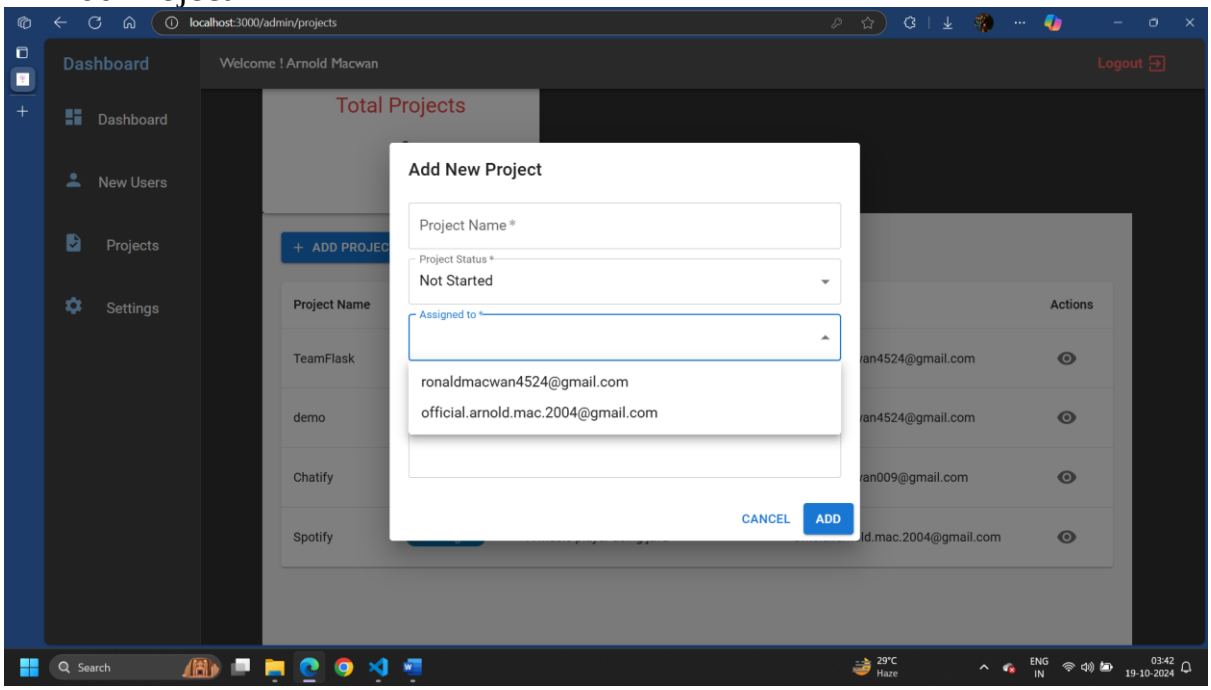
- Forgot password



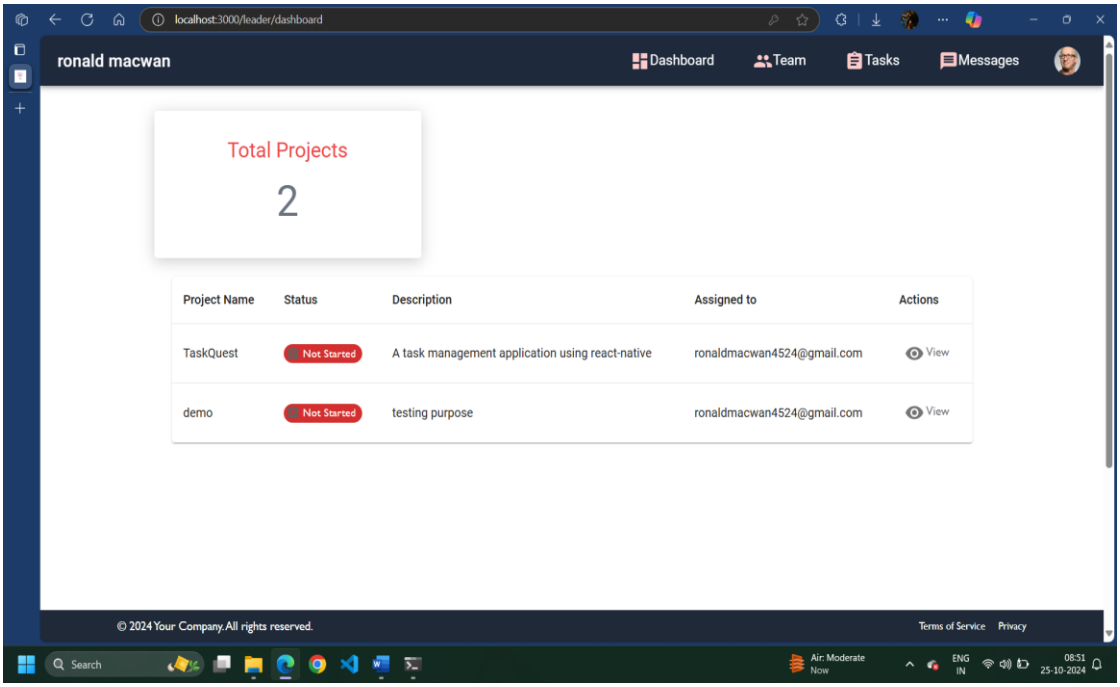
➢ Admin Dashboard



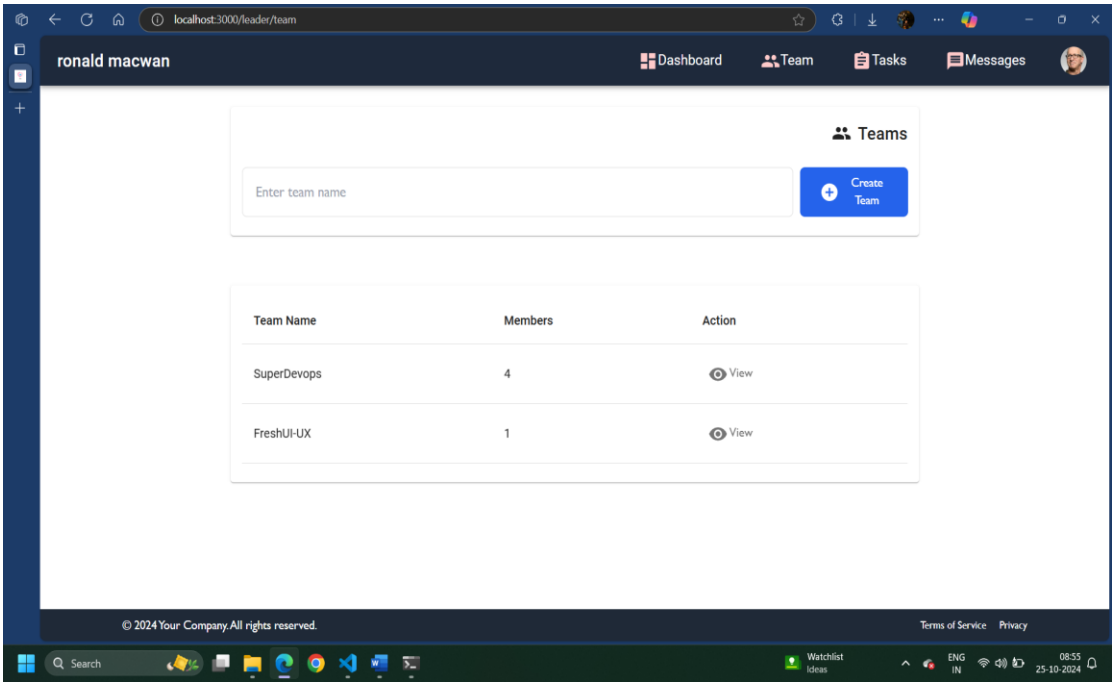
➢ Add Project



➢ Leader Dashboard



➢ Team List

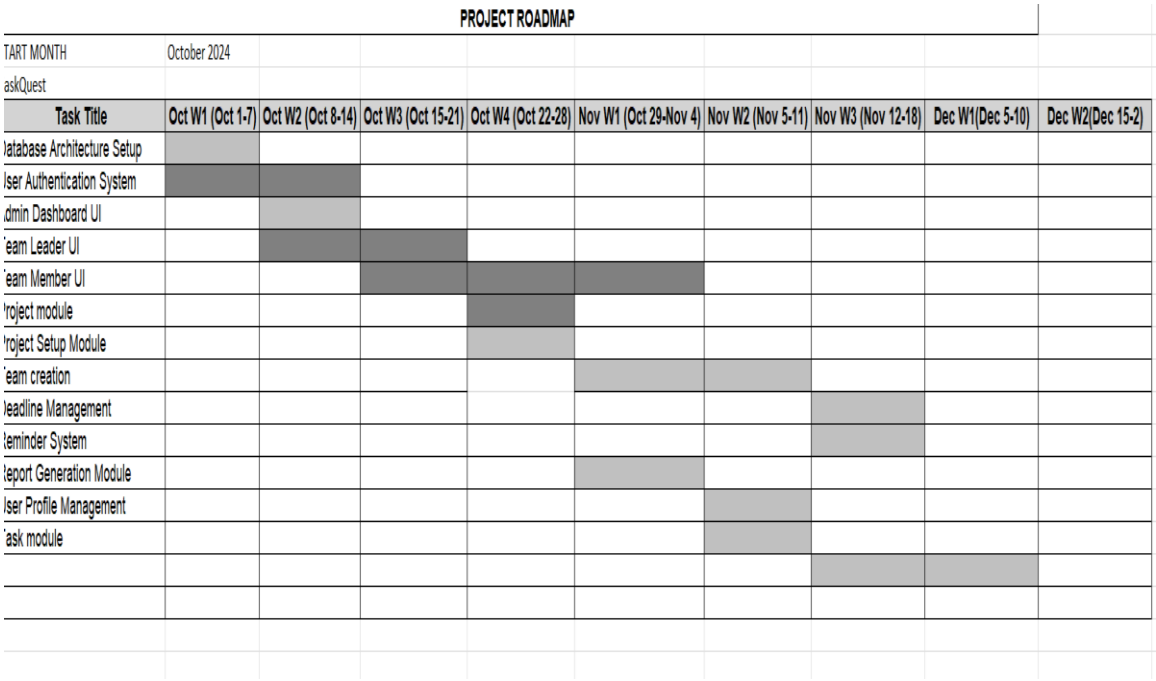


AGILE DOCUMENTATION

1. Project charter

Project name	Task management – with collaboration
Guide	
Project expected start date	10-8-2024
Project expected end date	15-11-2024
Project Scope	• Integration of collaborative platform • Custom Admin UI deployment • Report download • Safe & secure storing user information
Project mission	Our mission is to provide such a platform so that every user using the system will get the enhanced online service to organise their tasks accordingly their customization.
Project vision	Our vision is to provide user-friendly platform to newbies who face difficulties to manage and track their tasks.

2. Project Roadmap



3. Sprint table

Id #	Task	Assigned to	Status	Estimated time(hours)	Story points
1.	Database setup	Mathan	Completed	3	5
2.	Authentication	Arnold	Completed	8	8
3.	Admin Dashboard UI	Manthan	Completed	6	7
4.	Forgot password	Arnold	Completed	2	6
5.	Leader Dashboard UI	Arnold	Completed	4	7
6.	Member Dashboard UI	Manthan	Completed	6	8
7.	Profile management	Arnold	Delayed	3	4
8.	Task module	Arnold & Manthan	Delayed	9	8
9.	Generate report	Arnold	Ongoing	2	6
10.	Deadline management	Arnold	Delayed	3	7
11.	Reminder/notification	Manthan	Delayed	4	7

Proposed Enhancements

- System is focusing on resolving current issues and enhancing functionality.
- Improvements include more data security, efficient analytics using machine learning.
- Implement Role based access control.
- Going to add basic real time chat in the system.

Conclusion

- A task management system is essential for improving product development, data security, and real time collaborations. we aim to deliver a more efficient, user-friendly, and scalable solution.