Integrated Programming and Technologies

Introduction

Purpose of the Document

The purpose of this document is to provide comprehensive documentation for the Task Management System. It serves as a reference for understanding the system's structure, functionality, roles, and usage. It is also intended to assist in maintaining, enhancing, and troubleshooting the system throughout its lifecycle.

Scope of the System

The system is designed to Assign task, tracking, and user role management within an organization. It allows administrators to manage users and roles, enables managers and supervisors to assign and monitor tasks, and provides employees with a platform to view and update their task progress. The system also includes features for Monitoring, Sending task,and giving feedback. It is a web-based application accessible through modern browsers.

Target Audience

This document is intended for the following audiences:

Developers – to understand the architecture and design for future maintenance or upgrades.

Administrators – to manage user roles, permissions, and overall configuration.

Managers and Supervisors – to use the system for task assignment and monitoring.

Employees– to understand how to interact with and use the platform effectively.

Testers – to validate functionalities based on the described features and workflows.

System Overview

System Description

The Task and User Management System is a role-based web application designed to simplify task delegation, tracking, and user oversight within an organization. It provides a centralized platform where tasks can be created, assigned, monitored, and reported on, depending on user roles. The system enforces access control and permissions based on predefined roles: Admin,Manager,

Supervisor, and EmployeThe system helps improve productivity by ensuring clear task visibility, efficient role management, and streamlined communication between users at different hierarchy levels.

Key Features

- **Role-Based Access Control:** Each user role (Admin, Manager, Supervisor, Employee) has specific permissions and access.

- **Task Assignment and Tracking:** Tasks can be created, assigned to individuals, tracked for status, and updated until completion.
- **User Management:** Admins can add, edit, or deactivate users and assign them specific roles.
- **Progress Monitoring:** Supervisors and managers can view real-time updates on task statuses and employee performance.
- **Report Submission:** Employees and supervisors can upload documents and write reports linked to specific tasks.
- **Notifications System:** Users receive alerts when tasks are assigned, updated, or completed. **Document Upload:** Attachments can be added to tasks or reports for better context and documentation.
- **Search & Filter:** Quickly locate tasks, users, or reports using advanced search and filters.

Use Cases

Use Case	Description
Task Assignment	A manager logs in, creates a task, and assigns it to a supervisor or employee.
User Role Management	The admin adds a new user to the system and assigns them the role of "Supervisor".
Task Progress Update	An employee views their assigned task, updates the progress to "In Progress", and later marks it as "Completed".
Report Submission	A supervisor uploads a summary report for a completed project task assigned to their team.
System Monitoring	A manager views the dashboard to monitor all current tasks and their completion status.
Permission Restrictions	An employee can only view and update their own tasks and cannot see or modify other users' data.

User Guide

Navigating the UI

Upon logging in, users are directed to a personalized Dashboard based on their role.

Example: An Admin will see full menu options including user management, while an Employee will only see "My Tasks", "Reports", and "Profile".

Sidebar (Left Panel): Contains main navigation links like: Dashboard, Tasks, Users (Admin & Manager only), Reports (Supervisor & Manager) Account name, Logout.

Top Bar: Includes: Notifications

Role-Based Access/Permissions

Role	Can View	Can Create/Edit	Can Delete/or Deactivate	Special Access
Admin	All users, all tasks	All user data, Edit department, designation	Yes (users)	Manage users, roles,
Manager	All tasks, all reports	Assign tasks to employees	Yes (tasks)	Monitor system activity
Supervisor	Tasks assigned by manager	Monitor and give feedback to employees	No	Review task progress, submit reports
Employee	Tasks assigned to them	Update task progress, submit report	No	View only their own records

Key Functionalities and How to Use Them

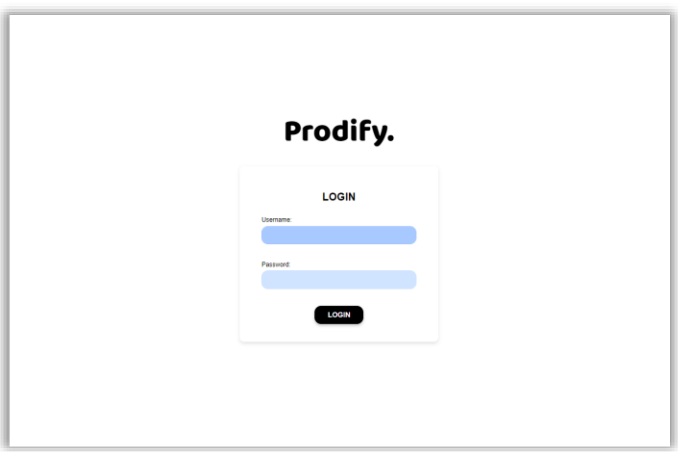
*Logging In

1.Navigate to the login page.

2.Enter your username/email and password.

3.Click the Login button.

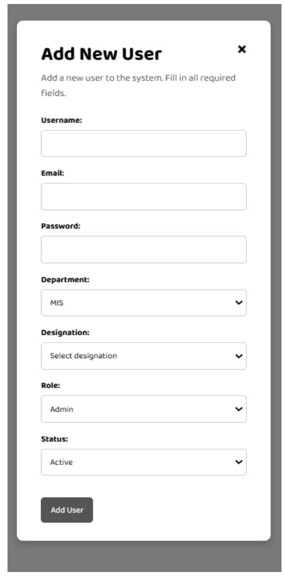
4.You will be redirected to your role-based dashboard.

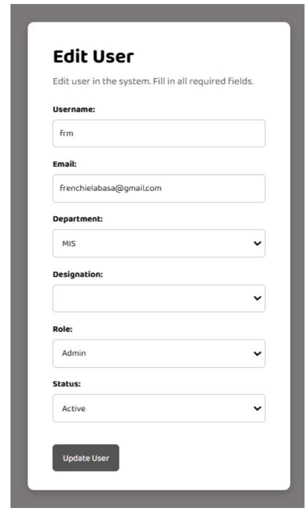


(ADMIN)

***Add a user** (Admin only)

1. Go to User Management.
2. Click "Add User".
3. Fill in: Username, Email, Password, Department, Designation, Role and lastly status.
4. Click Add User.



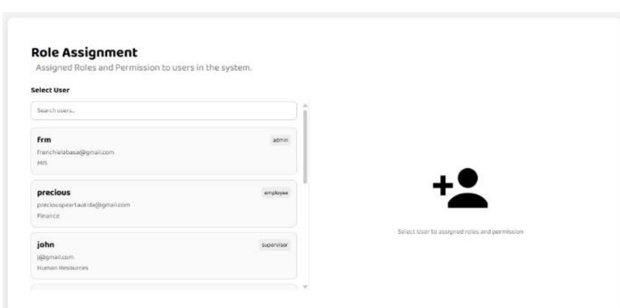


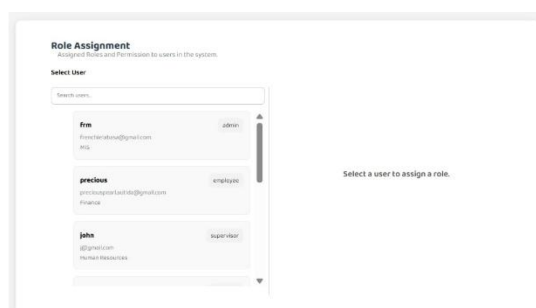
(Edit User)

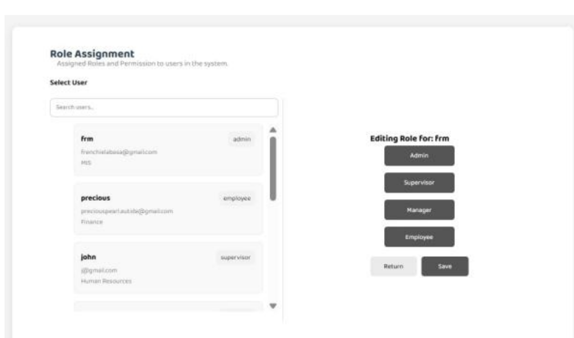
If you want to Edit a user just go User management and choose a User and you will see edit and click It. After that just fill up the changes that you want. If you are done, click Update user.

***Role Assign** (Admin only)

1. Go to Role Assignment.
2. Click the "Add with human icon ".
3. Now choose the user that you want to change the role.
4. After choosing the user click the roles that you want to apply and confirm.







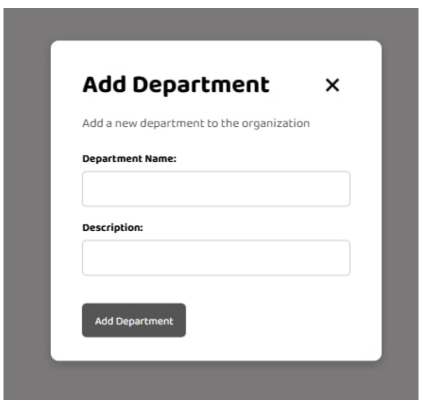
***Add/Edit Department** (Admin only)

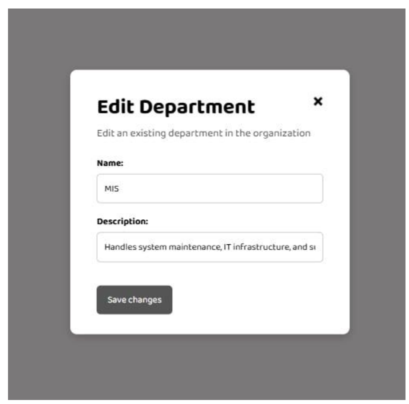
(Add Department)

1. Go to Department.
2. Click the Add department
3. Now fill up the Department Name and Description.
4. And if your done just click the Add Department

(Edit Department)

1. Go to Department.
2. you see a table of users Click the "edit" of your chosen user.
3. Now fill up the changes that you want.
4. If you are done click save changes.





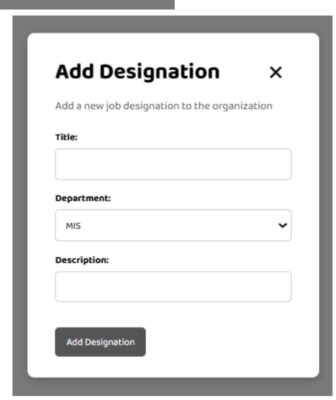
***Add/Edit Designation** (Admin only)

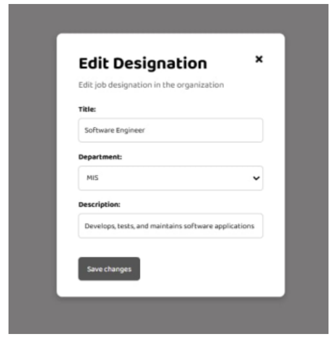
(Add Designation)

1. Go to Designation.
2. Click the Add designation
3. Now fill up the Title,

Department and Description.

4. And if your done just click the Add Designation





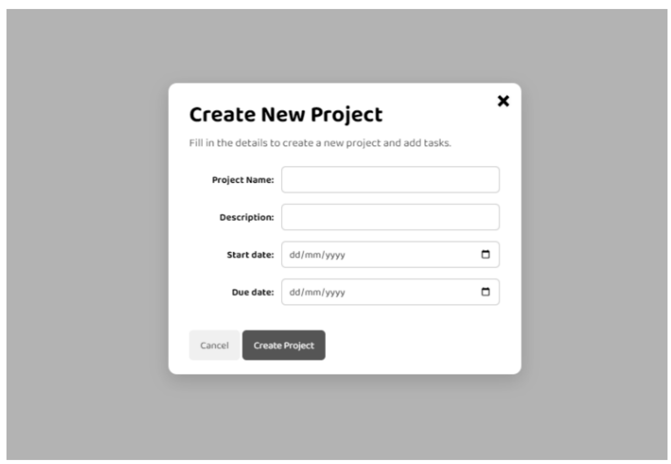
(Edit Designation)

1. Go to Designation.
2. you see a table of users Click the "edit" of your chosen user.
3. Now fill up the changes that you want.
4. If you are done click save changes.

(MANAGER)

***Create New Project** (Manager only)

1. Go to Project.
2. Click “Create Project".
3. Fill in: Project Name, Description, Start Date, Due date.
4. Click Create Project.



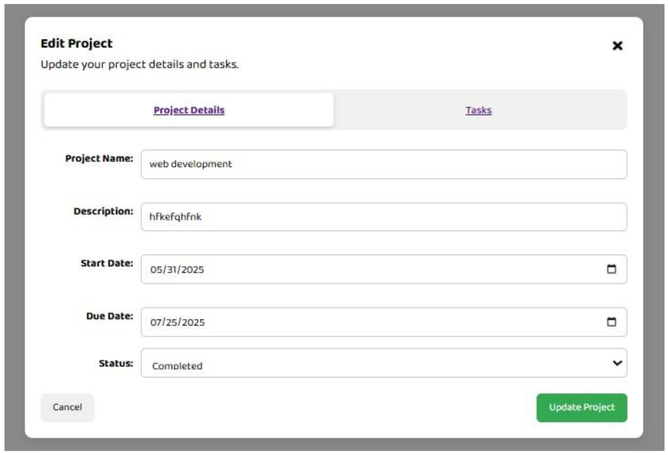
***Edit Project** (Manager only)

1. Go to Project.

2. You see the table and go to action Click edit.

3. Now Fill in the Project Name, Description, Start Date and etc. that you want to change.

4. Click Update Project.



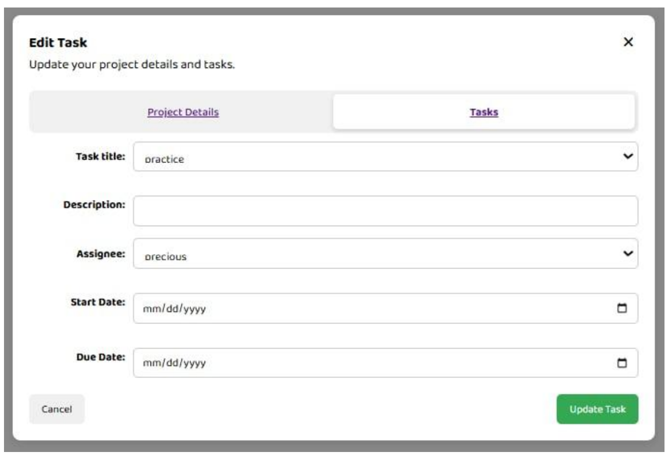
***Edit Project** (Manager only)

1. In Edit task you can access it if you Go to Project and Task Management.

2. You see the table and go to action Click edit.

3. Now Fill in the Task title, Description, Assignee and etc. that you want to change.

4. Click update task.



(SUPERVISOR)

***Task Review** (Supervisor only)

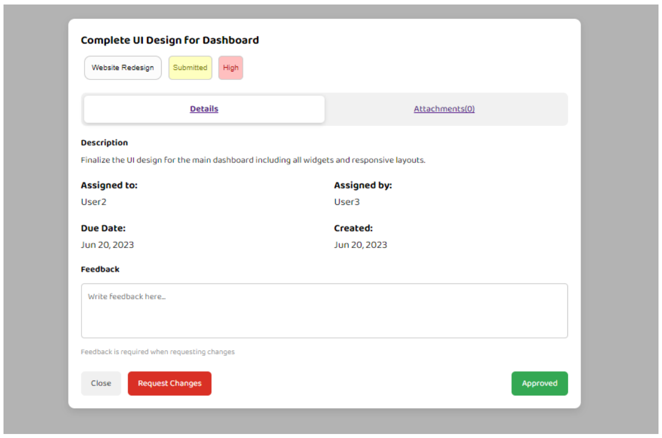
1. Go to Task Review.

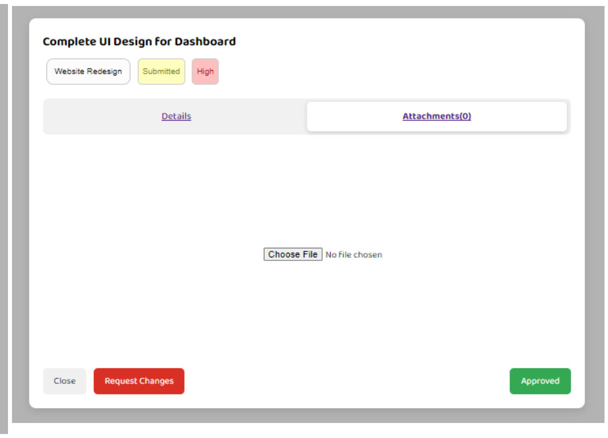
2. You See The Action Click "Review".

3. Fill in the Feedback,.

4. Click Request changes or Approved depends on your choices.

5. On the right side if you click the attachment you will see the file included in the task And do the step 4.





(EMPLOYEE)

***Submission** (Employee only)

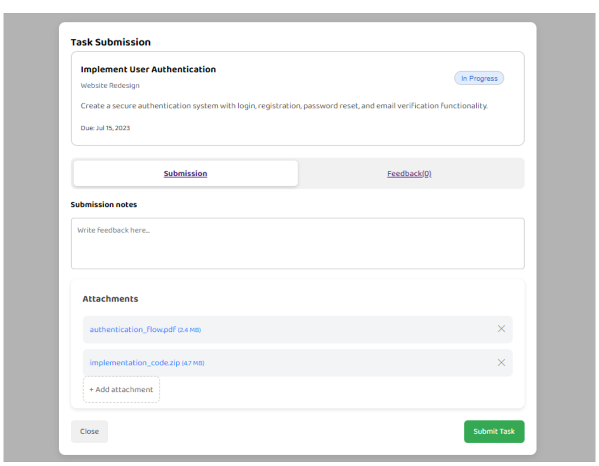
1. Go to Task Overview.

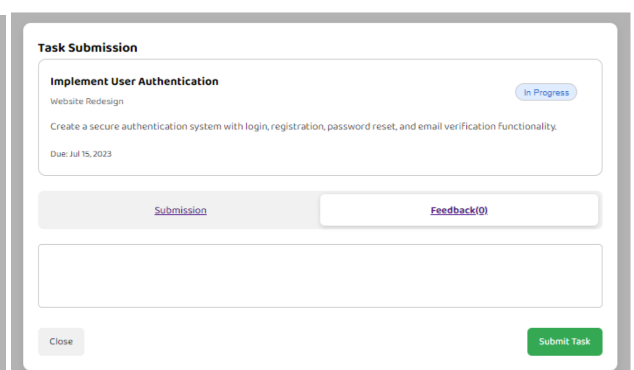
2. You See The Action Click "Start task, Resubmit, Submit".

3. Now Fill in the submission notes and attach a file.

4. Click Submit task.

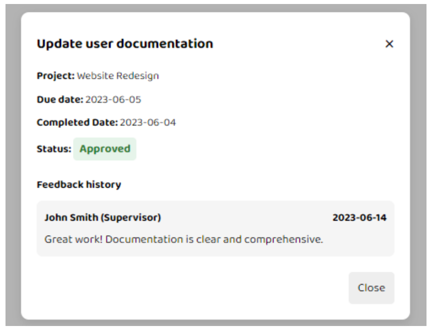
5. On the right side if you click Feedback and your task already approved. You will see the feedback of the supervisor that approved your task





***Task History** (Employee only)

- first go to task history, you see the action click the eye icon and you will see the details of your completed, returned or all returned task.



System Architecture & Design

Design Decisions

UI/UX Design Evolution

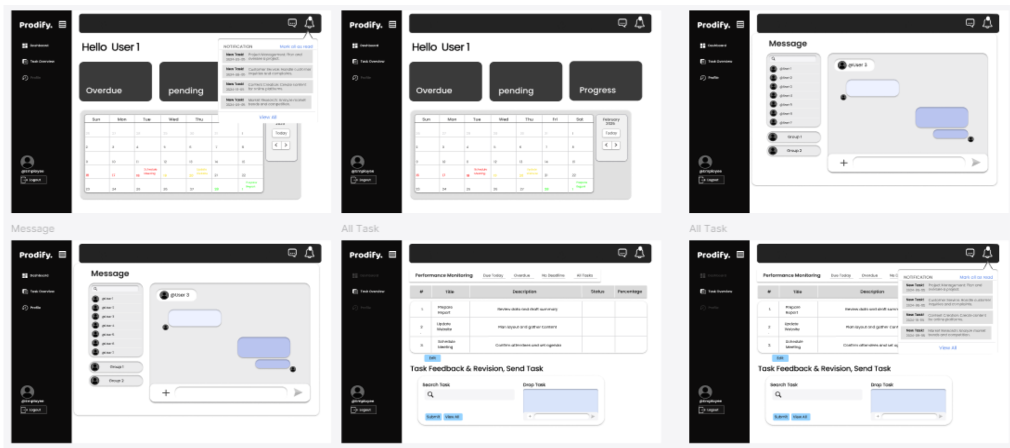
During the development process, our team went through three design iterations to achieve a clean and user-friendly interface:

First Design (Canva)

We initially used Canva to draft our interface. However, the design did not align with our system's purpose. The layout was visually unappealing, the color palette lacked harmony, and overall, the interface didn't provide a pleasant user experience.

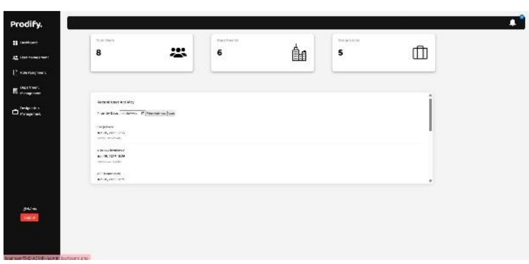
Second Design (Figma - Practice Phase)

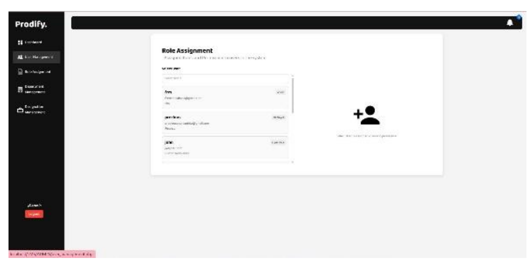
We shifted to Figma for more flexibility and control. At first, using the tool was challenging due to unfamiliarity, but with practice, we gradually improved. In this phase, we successfully identified a neutral color scheme using shades of grey and black, which was gentle on the eyes. However, the overall layout and structure still felt cluttered and inconsistent.

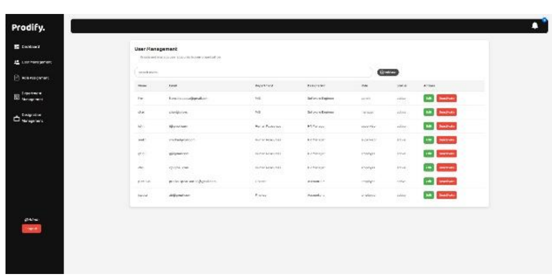


Final Design (Figma - Minimalist Approach)

In our third and final iteration, we embraced a minimalist design philosophy. We focused on simplicity, consistency, and usability. The clean layout, muted color palette, and intuitive navigation made the interface more accessible and aesthetically pleasing for all user roles. This final version is now implemented in our system.



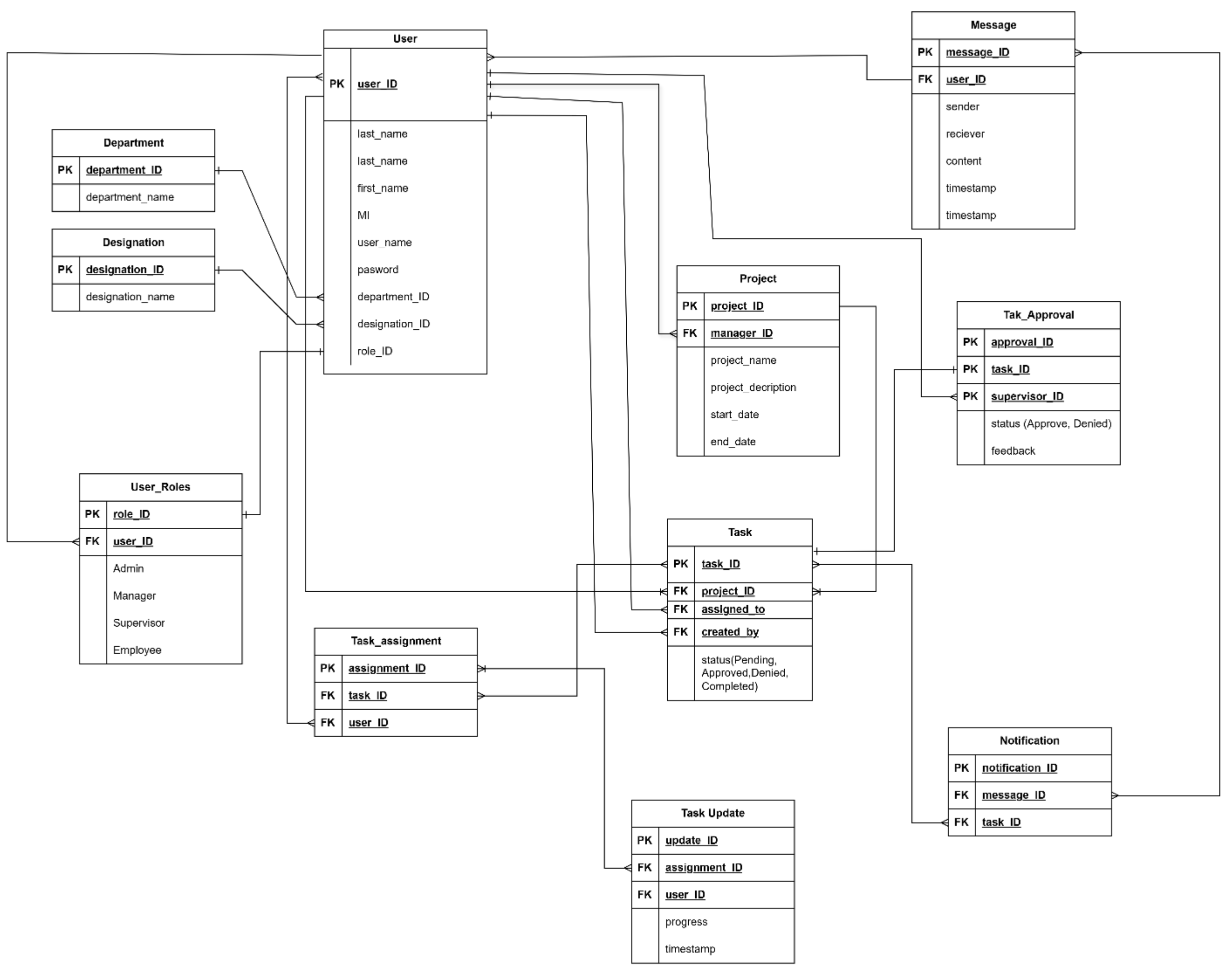




Module Breakdown

Module	Description
Authentication	Handles login, logout, session management, and password encryption.
User Management	Admin can create, edit, assign roles, and deactivate accounts.
Department Module	Manages creation and display of departments. Links users to departments.
Task Management	Allows Managers/Supervisors to create, assign, and track tasks.
Dashboard	Displays relevant information (tasks, users, departments) based on role.
Search/Filter	Enables search and real-time filtering in user, task, and department lists.
Notification System	Alerts users about assignments, deadlines, and updates.

Database Schema



Developer Guide

This section explains how the Task Management System is organized and how we contribute as a team using assigned roles and GitHub for version control.

Code Structure

The system is built using **PHP**, **MySQL**, **HTML/CSS**, and **JavaScript**, with a folder structure based on user roles and features:

- /config/ – Contains configuration files like connection.php for database connection.
- /admin/, /manager/, /supervisor/, /employee/ – Role-specific folders with dashboard and feature pages.
- /includes/ – Shared UI components such as header.php, and sidebar.php.

How We Contribute

Although we mostly use one laptop, we divide our tasks based on our strengths:

- **Frontend Developer** – Designs and codes the user interface (HTML, CSS, JavaScript)
- **Backend Developer** – Works on PHP functionality such as login, task management, and user roles.
- **Database Manager** – Designs and manages the MySQL database, creates tables, and writes SQL queries.

We take turns working or collaborate together on one laptop, then regularly push updates to **GitHub**.

Version Control (GitHub Workflow)

We use **GitHub** to manage code versions and updates. The project has two main branches:

- **main** – The working branch where we commit and push all updates.
- **master** – A backup branch for safety in case issues occur in main.

https://github.com/CHAN-07/TMSSS

https://github.com/French0223/TMSS

System Testing

This section outlines how we tested the Task Management System to ensure it works as expected across different user roles and system features.

Testing Approach

We used **manual testing** for each module based on the assigned user roles:

- **Admin**
- **Manager**
- **Supervisor**
- **Employee**

Each group member tested the modules assigned to their role. We logged in as each role and manually performed operations to check if the expected output matches the actual behavior.

Test Cases and Results

Test Case	Role	Expected Result	Actual Result	Status
Login with valid credentials	All Roles	User is redirected to their dashboard	Redirects correctly	Passed
Add new user	Admin	User is saved and shown in the user list	Works as expected	Passed
Assign task to employee	Manager	Task is saved and visible to the assigned employee	Task appears	Passed
Submit task with attachment	Employee	Task is submitted with file link	File uploads fine	Passed
Approve task with remarks	Supervisor	Task status changes to approved	Status updates	Passed

Tools Used

- **Browser Developer Tools –** For checking layout and JavaScript errors.
- **phpMyAdmin –** To directly inspect and verify the database records.
- **GitHub –** To track updates and rollback changes if needed.

Bug Tracking

Issue	Status	Fix
Task status not updating	Resolved	Added missing SQL update query
Missing user role dropdown	Resolved	Added <select> dropdown in the form
Loss of database due to XAMPP errors	Not resolved	We lost the database multiple times because of XAMPP crashes and port conflicts, causing

Issue	Status	Fix
		significant delays. As a result, we had to redo all the tables and data from scratch. To minimize future risks, we started exporting regular SQL backups and changed Apache’s port from 80 to 8080.

Security Considerations

Authentication & Authorization

- The system manages user login sessions with PHP sessions after verifying credentials against the database.
- Role-Based Access Control (RBAC) is implemented by checking the user’s role field upon login and redirecting users to dashboards specific to **Admin, Manager, Supervisor, or Employee** roles, restricting access according to privileges.

Future Enhancements

- Plan to migrate all passwords to **bcrypt hashing** and update the login flow to verify hashed passwords.