



Demure Tech

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Deliverable #1: Task Manager Application Overview

The purpose of the Task Management Application developed by Demure Tech is to create a comprehensive tool that helps individuals organize their daily, weekly, and monthly tasks in a structured, efficient manner. The system aims to enhance productivity by offering users the ability to track their tasks, prioritize them, and meet deadlines more effectively. The platform is designed to accommodate different user roles (e.g., admin and user) and offers several customization options to tailor the task management experience to individual preferences.

The Task Management Application offers users a variety of essential features to ensure efficient task tracking. The system allows users to create, view, edit, and delete tasks, and categorize them according to different workflows like goals, time management, agendas, or projects. It also integrates a task prioritization feature and supports the setting of due dates. Additionally, users can attach images to tasks for better clarity and organization. The personalization aspect of the platform is another key feature, as users can customize their dashboards with different background colors, images, and even access a weather widget for added engagement. This tool is intended to provide a central platform that is both user-friendly and customizable, aligning with a variety of productivity needs.

Deliverable #2: Site Analysis & Wireframe Design System Overview

The Task Management Application is designed to be a dynamic and adaptable platform that supports both personal and professional task management. Its core functionality revolves around a user-friendly interface, allowing users to organize tasks in a way that suits their daily routines. Through this system, users can easily manage their time by creating tasks with varying levels of importance, assigning deadlines, and tracking progress over time. With a clean design, the platform ensures that users can focus on task completion without unnecessary distractions, creating a smooth user experience.

Features and Functionality

The Task Management Application is equipped with an array of features, including:

- **Task Creation Application:** Users can create tasks with titles, descriptions, due dates, and priority levels. This ensures that tasks are easily organized and tracked.

- **Categorization:** Tasks can be organized into categories such as Goals, Time Management, or Projects. This feature allows for better task classification and organization, helping users sort tasks based on their workflow.
- **Prioritize:** Users can assign priority levels (low, medium, high) to tasks, making it easier to focus on the most urgent tasks first.
- **Image Attachment:** Users can upload images to tasks, which is useful for visualizing tasks or providing more detailed context (e.g., project blueprints, reference images).
- **Personalization:** Users can adjust their dashboards by changing background colors, uploading images, and selecting a weather widget to display real-time weather updates based on their location.
- **Login and Security:** The system offers secure user authentication with password hashing, email validation, and the ability to reset or recover passwords, ensuring the security of user accounts.

This system is aimed at providing a comprehensive solution to task and productivity management, with a high degree of customization to suit individual needs.

Wireframe Design

Task Manager

Username

Password

Login

[Register](#)

Click Next

Figure 1 Click to view wireframe PowerPoint presentation. Press ESC to exit PowerPoint.

Deliverable #3: Database Schema and Relationships

The User Table is a foundational component of the system's database, containing information about each user. The table includes:

- **UserId (Primary Key):** A unique identifier for each user.
- **First and Last name:** For personalized greetings and user-specific features.
- **Email Address:** Used for login and account recovery purposes, with an added check for uniqueness.
- **Password:** The user's password is securely hashed for authentication purposes.
- **Role:** Users can have different roles, such as "user" or "admin," with distinct levels of access and privileges within the system.
- **CreatedAt:** The timestamp when the account was created.

This table allows for user-specific task management, security, and authentication.

The Tasks Table tracks task-related data for each user. It includes:

- **TaskID (Primary Key):** A unique identifier for each task.
- **UserID (Foreign Key):** Links each task to the corresponding user in the Users Table.
- **Title:** A brief name or description of the task.
- **Description:** A detailed description of the task's requirements.
- **Due Date:** The deadline for completing the task.
- **Priority:** A field for categorizing tasks as high, medium, or low priority.
- **Status:** Indicates whether the task is incomplete or complete.
- **Image Path:** Stores the location of any image files attached to the task.
- **CreatedAt:** The timestamp of when the task was created.

This structure ensures that all tasks are linked to specific users and provides essential details to track and manage each task effectively.

- **Categories Table:** Allows users to create custom categories, enhancing the task organization and filtering process. Each category is linked to a task.
- **Comments Table:** Supports collaboration by enabling users to add comments to tasks, facilitating communication regarding task progress.
- **Reminders Table:** Enables users to set reminders for specific tasks, ensuring they stay on top of deadlines.

These tables are designed to support the robust functionality of the system and enable efficient data management.

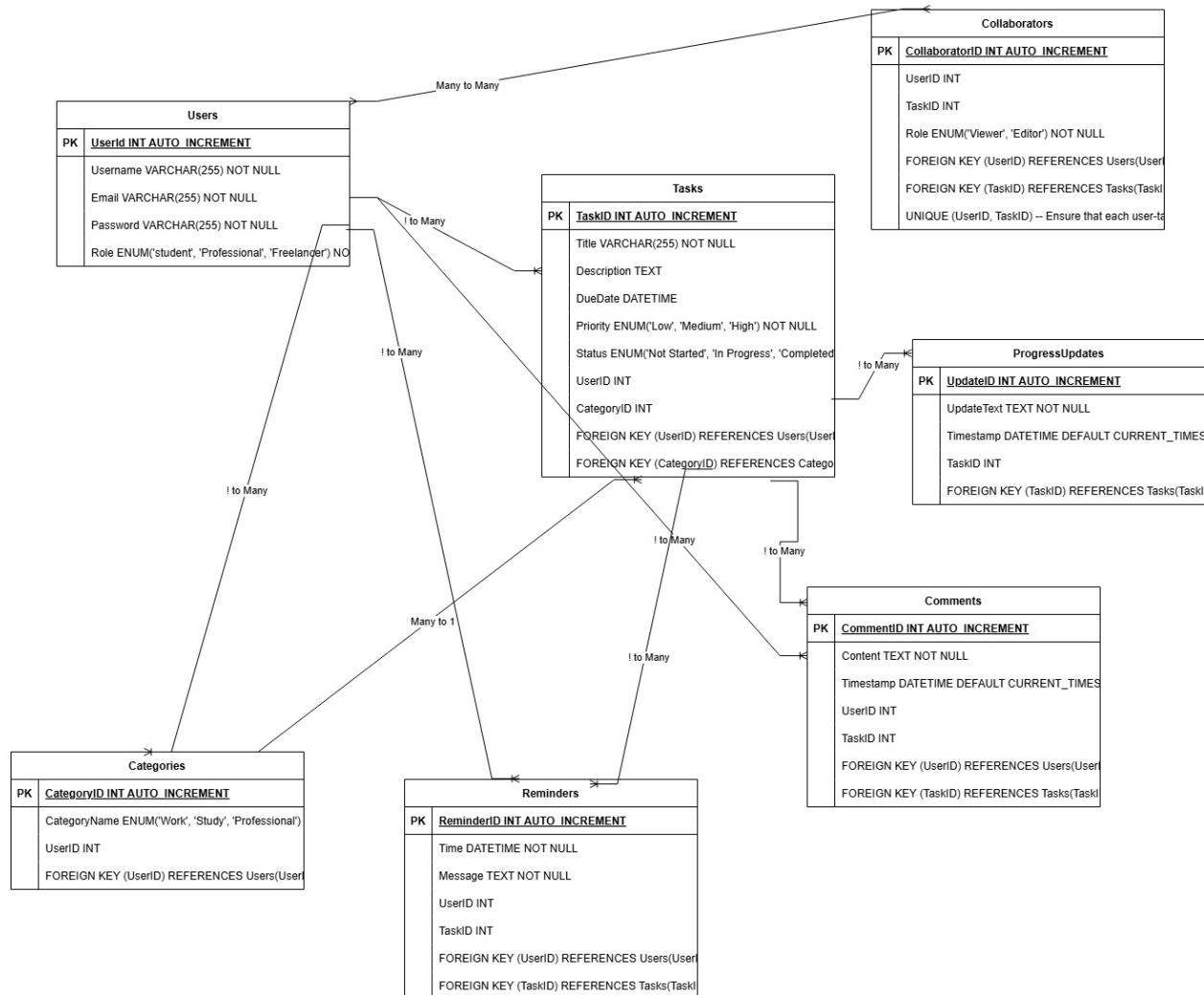


Figure 2 Database Schema

Deliverable #4: Task Manager Database Design Summary

Database Structure

The database structure is designed to optimize data organization, retrieval, and management. The primary tables Users, Tasks, and Categories are linked through foreign keys, ensuring seamless relationships between users and their tasks. By maintaining this structure, the system allows for an efficient, scalable way of managing user data and tasks. The design also incorporates additional tables, such as Comments and Reminders, which extend the platform's collaborative and reminder features.

Key Features

- **Relational Design:** The use of primary and foreign key relationships ensures consistency and data integrity across tables. For example, each task is directly linked to a user and can be associated with specific categories.
- **Efficient Querying:** With indexed fields like UserID and TaskID, querying the database for tasks related to a specific user or category is fast and efficient.
- **Scalability:** The database design can easily scale to accommodate additional tables or data relationships as the platform evolves, ensuring long-term growth.

This structure supports the application's functionality, providing an organized way to store and manage data efficiently.

Deliverable #5: Task Management System Features and Challenges User Interface and User Experience

Interface and User Experience

The Task Management System offers a clean, minimalist design that prioritizes user ease-of-use. The homepage features an intuitive dashboard that users can personalize, with a sidebar providing easy navigation to tasks, settings, and account options. The system's layout is designed for quick access to key features such as task creation, viewing tasks, and task editing.

The dashboard itself is dynamic, displaying the weather, greetings based on user data, and an overview of tasks, including due dates and priority. The visual aspects, including the background and task organization, can be customized to fit user preferences, enhancing engagement and making the platform feel more personal.

Functionality and Interactivity

The platform provides rich interactivity through forms for task creation, editing, and deletion. Users can drag-and-drop tasks to adjust their priorities and due dates. Task images are displayed directly within the task details, offering visual context. Notifications and reminders for upcoming tasks ensure users stay on track. The system also allows users to mark tasks as complete and track their progress over time.

Deliverable #6: Security Plan for Demure Tech Task Management System Development Process

Securing the Code

To ensure the security of the source code, the team implemented robust access control using **private repositories** and **role-based access control (RBAC)**. Additionally, two-factor authentication (2FA) is required for all developers to add an extra layer of protection to the development process. Static code analysis tools, like **SonarQube**, are used in the CI/CD pipeline to identify vulnerabilities during the development phase.

Securing the PHP Server and MySQL Database

The server is configured with secure settings, including disabling unnecessary PHP functions and enforcing **SSL/TLS encryption** for database communication. User passwords are stored using bcrypt hashing, ensuring that even in the event of a breach, password data remains protected. Prepared statements and parameterized queries prevent **SQL injection** attacks, securing the database from malicious inputs.

Securing the Network and Operating System

The network and operating system security are reinforced by **regular OS updates**, and unnecessary services are disabled to minimize attack surfaces. A **Web Application Firewall (WAF)** is used to mitigate common threats, such as **Cross-Site Scripting (XSS)** and **SQL injections**. **SSH key-based authentication** and **VPN** protect remote server access.

Protection Against External Attacks and Environmental Disasters

The system includes redundancy and failover capabilities, such as **multi-region data deployment**, ensuring high availability even during localized failures. **Automated encrypted backups** and **disaster recovery** plans ensure that data can be restored in case of an environmental disaster or data loss.