WORKFLOW MANAGEMENT PROJECT

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Introduction

- A Workflow Management System is a digital platform designed to organize, streamline, and automate business processes across teams and departments. It enables users to manage tasks, monitor progress, and collaborate effectively by integrating features like role-based access, task dependencies, real-time notifications, and document management

Problem Statement

Organizations often face challenges in managing workflows due to unclear task assignments, inefficient communication, lack of real-time tracking, and difficulty in identifying process bottlenecks. These inefficiencies lead to delays, reduced productivity, and increased operational costs. A structured workflow management system is needed to streamline processes, automate repetitive tasks, and provide real-time insights for better decision-making.

Objectives

- ▶ Streamlining Processes: Simplify and automate business processes to reduce manual efforts and enhance efficiency
- ▶ Improved Collaboration: Facilitate seamless communication and collaboration across teams, ensuring tasks are completed on time.
- ▶ Transparency and Accountability: Provide full visibility into task statuses, user actions, and system activity logs for enhanced accountability
- ▶ Real-Time Updates: Ensure users are notified in real-time about task updates, meeting schedules, and critical alerts for timely actions.

Objectives

► Document Management and Security: Ensure secure document management, with version control access to sensitive files

► Client/Stakeholder Engagement: Improve collaboration with clients and stake holders by providing them with access to project progress, task reviews, and feed back options.

► Scalability and Flexibility: Design the system to be scalable and adaptable to accommodate growing teams, projects, and business needs.

Purpose and Need of the project

- **Purpose**:The purpose of a Workflow Management System is to optimize and automate business processes, ensuring that tasks are completed efficiently and on time. It helps organizations streamline communication, improve collaboration, and maintain transparency across teams

- **Need**:The need for the Workflow Management System arises from the increasing complexity of business operations, the need for efficient task management, collaboration, and tracking. Organizations face challenges in managing projects, coordinating teams, ensuring deadlines are met, and maintaining accountability across various departments or stakeholders.

Social Relevance

Enhances productivity by providing a structured platform for task creation, assignment, and tracking. It promotes collaboration among teams, supports remote work, and improves workflow efficiency in businesses, educational institutions, and non-profits. With secure authentication and it helps users manage tasks effectively, reducing stress and boosting accountability. By enabling digital transformation and paperless work, it contributes to modern, efficient, and organized project management.

Software Requirements Specification

▶ **Functional Requirements**

User Management:

▶ Implement user registration functionality.
▶ Use secure authentication methods such as username/password
▶ Ensures secure authentication with success or failure status.

Dashboard:

▶ Displays key metrics, task statuses, and system activity.
▶ Uses visual elements like charts, notifications.
▶ Provides real-time updates and analytical reports.

- *Task Management:*
- Allows users to create tasks with a name, description, priority, and deadline.
- Enables assigning tasks to specific users or teams and sends notifications to assignees.
- Allows setting dependencies between tasks and automates transitions based on task completion.

- *Document Management:*
- Allows users to upload and attach documents to tasks.
- Ensures proper file storage and linking to tasks.

- *Notifications:*
- Sends automated reminders for upcoming task deadlines.
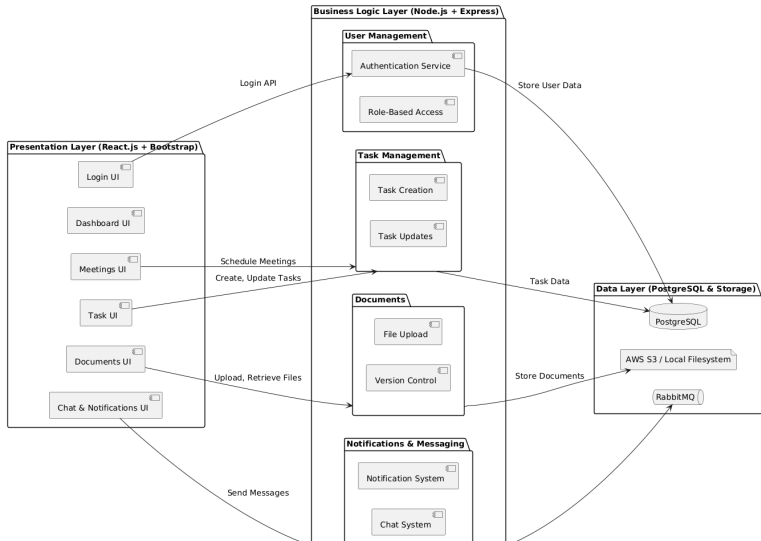- Helps users stay on track with their tasks.

- **Non-Functional Requirements**

- Performance: System shall process all user actions (login, task updates, notifications) within 2 seconds under normal load conditions.
- Security:All sensitive data (passwords, user information) shall be encrypted using encryption standard.
- Verification:The system shall require email verification to confirm user identity before granting access to the platform status.
- Reliability:The system should be available and operational 24/7
- Scalability:The system should function properly when the number of users and data increases.
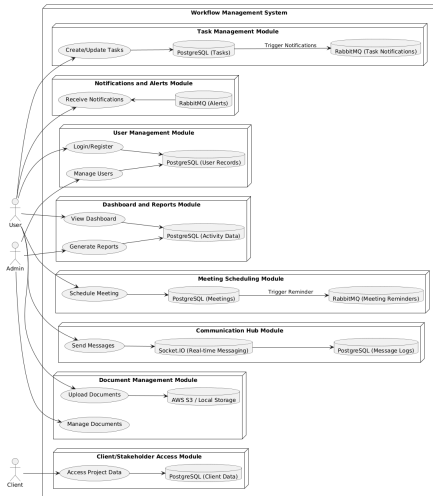
Technology Stack

- ▶ Frontend: ReactJS (Forms, Role-based UI Components)
- ▶ Backend: Node.js (Express.js for API endpoints)
- ▶ Database: PostgreSQL (Users table with fields: id, name, email, password, role, status)
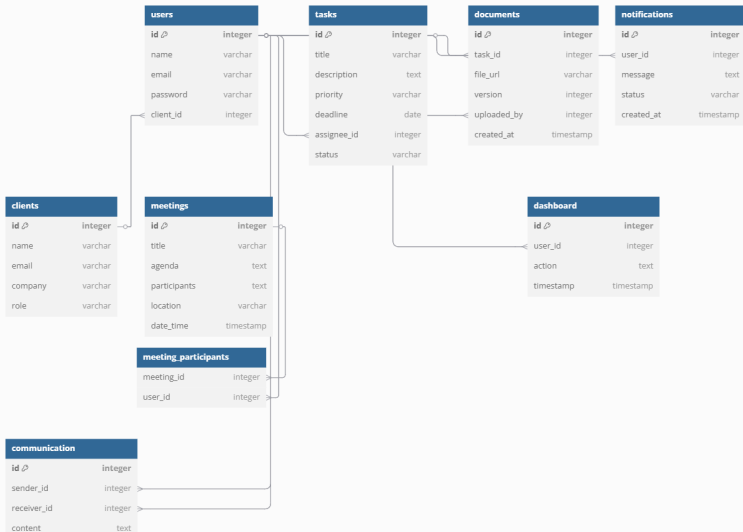- ▶ Authentication: JSON Web Tokens (JWT) for session management

System Architecture

Workflow Management System - Three-Tier Architecture

Business Logic Layer (Node.js + Express)

User Management
- Authentication Service
- Role-Based Access

Task Management
- Task Creation
- Task Updates

Documents
- File Upload
- Version Control

Notifications & Messaging
- Notification System
- Chat System

Presentation Layer (React.js + Bootstrap)
- Login UI
- Dashboard UI
- Meetings UI
- Task UI
- Documents UI
- Chat & Notifications UI

Data Layer (PostgreSQL & Storage)
- PostgreSQL
- AWS S3 / Local Filesystem
- RabbitMQ

Login API
Store User Data
Schedule Meetings
Create, Update Tasks
Task Data
Upload, Retrieve Files
Store Documents
Send Messages

Data Flow Diagram

Database Design

Screenshots

Login

Email

Password

I'm not a robot

reCAPTCHA

Privacy - Terms

Login

Don't have an account? Sign Up

Sign Up

Name

Email

Password

I'm not a robot

reCAPTCHA

Privacy - Terms

Sign Up

Already have an account? Login

Workflow Management

- Dashboard
- Tasks
- Reports
- Notifications
- Documents
- Communication
- Users

Logout

Welcome to Workflow Management

5 Pending Tasks

3 Reports Generated

2 New Notifications

10 Active Users

Completion Status

- Development: 25 percent completed
- Testing and Development: In progress.
- Deployment: Final release scheduled in S6.

Conclusion

► The Workflow Management System enhances task organization, collaboration, and efficiency.

► It provides a structured approach to task assignment, progress tracking, and automation.

► Features like email verification, recaptcha, and document management improve usability and security.

► The system ensures scalability, security, and compliance