

Synopsis for Project

PRISM – Productivity, Resource, Insights, Sentiment Management

Introduction

Enterprise Resource Planning (ERP) systems have become a backbone for modern organizations by integrating core business processes such as HR, payroll, project management, and communication into a unified platform. However, existing solutions are often either too complex and costly for small and medium enterprises (SMEs) or lack the scalability and intelligence required by growing businesses. With the rising need for real-time collaboration, AI-driven insights, and user-friendly interfaces, there is a demand for an ERP solution that bridges this gap effectively.

Problem Statement

Many organizations, especially SMEs, struggle with fragmented systems—separate tools for HR, payroll, project management, and communication—leading to inefficiency, higher costs, and limited visibility. Large ERP platforms often come with high subscription fees, steep learning curves, and unnecessary complexity, making them unsuitable for smaller businesses. Moreover, the lack of integrated communication tools and real-time analytics hinders effective decision-making. Therefore, there is a need for a comprehensive, affordable, and scalable ERP solution that unifies business operations, enhances collaboration, and delivers actionable insights through intelligent dashboards.

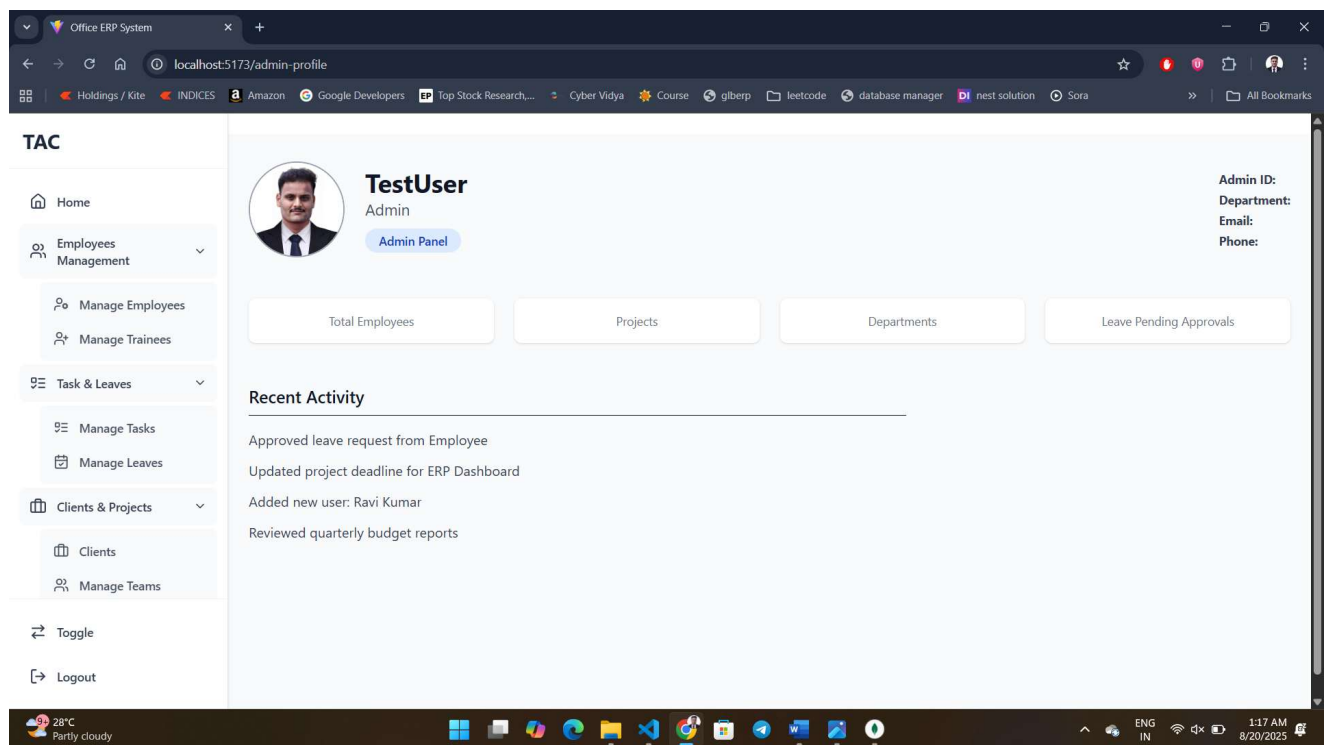
Objectives and Scope

1. Objectives

The primary objectives of the proposed ERP platform are as follows:

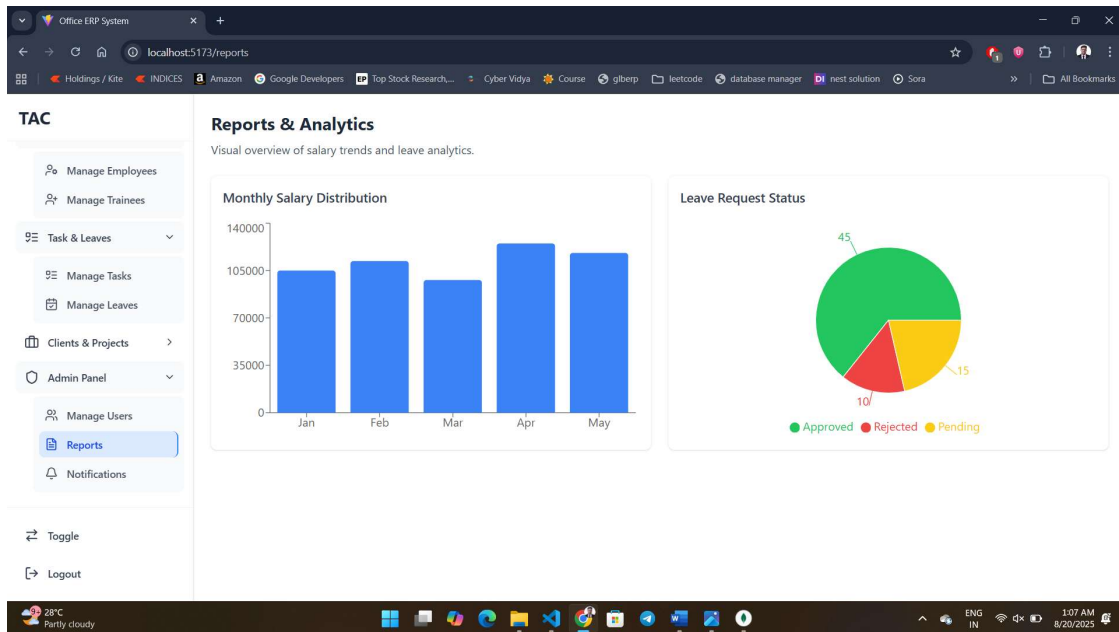
1. Integrated ERP Platform

- Develop a comprehensive ERP solution that unifies project management, HR management, payroll, employee management, and internal communication tools into a single system.



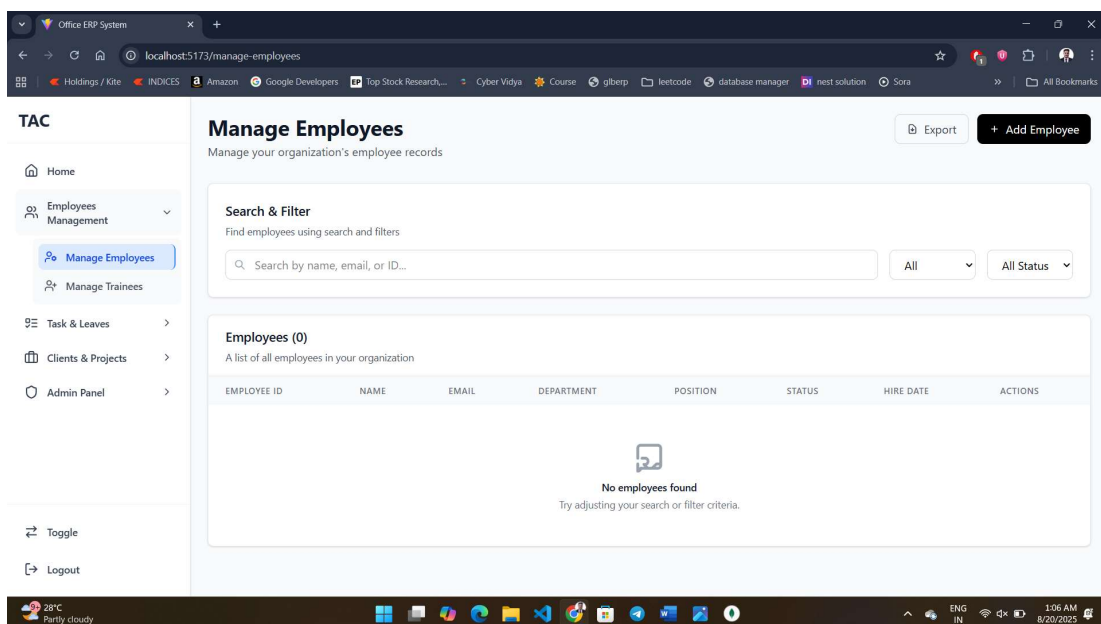
2. Admin Dashboard

- Provide administrators with a centralized dashboard that ensures full organizational visibility, enabling monitoring of projects, employees, salaries, and performance metrics in real-time.



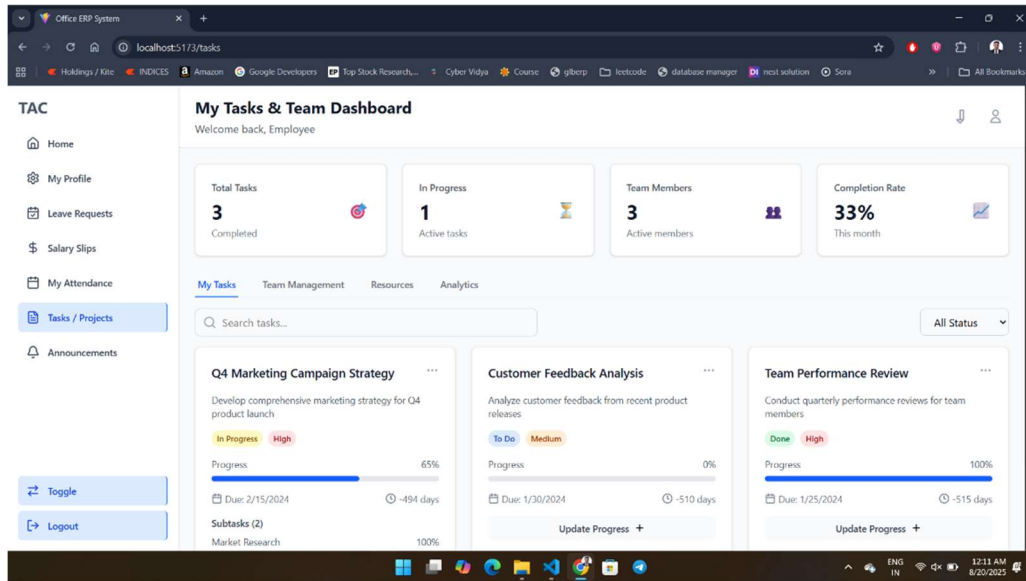
3. HR Dashboard

- Design a dedicated HR interface for efficient management of workforce operations, including attendance, payroll, employee and intern records, and performance tracking.



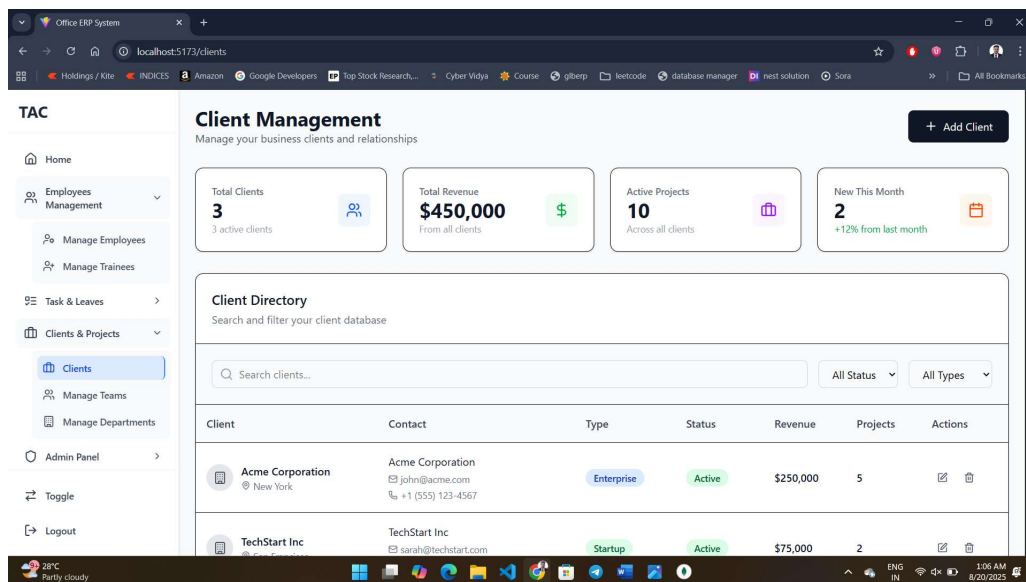
4. Project Dashboard

- Offer employees a project-centric dashboard with Jira-like features for task management, deadlines, project progress tracking, and collaboration with team members.



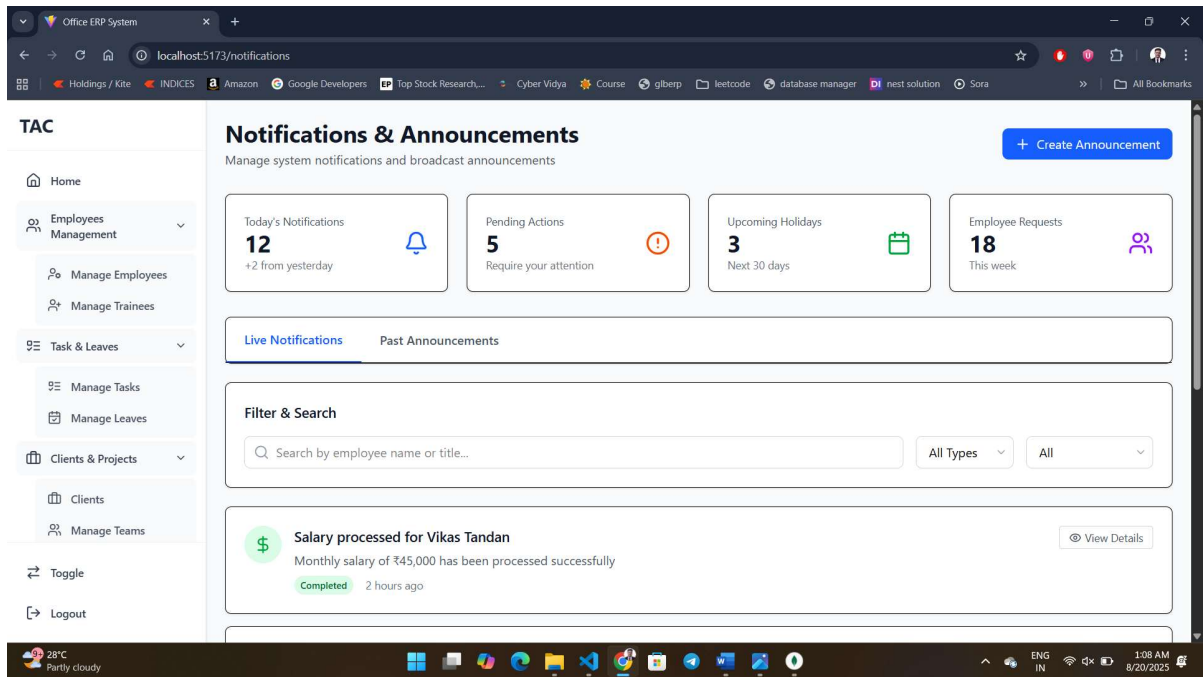
5. Business Model

- Implement a subscription-based pricing model that makes the ERP affordable, scalable, and accessible for small and medium-sized businesses.



6. User Experience

- Ensure a user-friendly UI/UX design that minimizes the need for extensive training while enhancing productivity across administrators, HR managers, and employees.



7. Communication Tools

- Integrate built-in meeting and video conferencing tools, similar to Microsoft Teams, to enhance seamless internal communication and team collaboration.

2. Scope

The scope of the ERP platform encompasses the following functional areas and deliverables:

1. Project Management Module

- Task creation, assignment, and tracking.
- Milestones and deadlines monitoring.

- Collaboration tools (comments, file sharing).
- Visual project progress indicators (Gantt charts, Kanban boards).

2. HR & Payroll Management Module

- Employee onboarding and offboarding.
- Attendance and leave management.
- Payroll automation and salary slip generation.
- Employee/intern records and performance evaluation.

3. Admin Dashboard

- Centralized organizational overview.
- Real-time reports on workforce, salaries, and projects.
- Access control and role-based permissions.
- Analytics and performance KPIs.

4. Employee Dashboard

- Individual task and project tracking.
- Daily/weekly performance insights.
- Collaboration with team members.
- Direct access to HR and payroll information.

5. Communication & Collaboration Tools

- One-on-one and group chat functionalities.
- Video/audio conferencing with screen sharing.
- Meeting scheduling with calendar integration.
- Notification and reminder system.

6. Business & Pricing Model

- Multi-tier subscription plans (basic, standard, premium).
- Scalability for small and medium enterprises (SMEs).
- Cloud-based deployment for accessibility and security.

7. UI/UX & Accessibility

- Intuitive design minimizing training needs.
- Mobile and web-friendly responsive design.
- Multi-language support for diverse user groups.
- Accessibility compliance (WCAG standards).

Methodology

The methodology follows a **System Development Life Cycle (SDLC)** approach using the Agile model to ensure iterative improvements and feedback integration.

1. Requirement Gathering & Analysis

- Collect requirements from stakeholders (Admins, HR managers, Employees).
- Identify functional and non-functional needs (scalability, security, usability).

2. System Design

- Create system architecture and database schema.
- Design dashboards (Admin, HR, Employee/Project) with modular structure.
- Plan integration of communication and video conferencing tools.

3. Technology Stack Selection

- Backend: Spring Boot / Node.js.
- Frontend: React / Angular with responsive design.
- Database: MySQL / MongoDB.
- APIs for video conferencing and communication tools.

4. Module Development

- **Admin Module:** Organization control, analytics, salary & performance management.
- **HR Module:** Attendance, payroll, records, employee lifecycle management.

- **Project Module:** Task assignment, tracking, collaboration (Jira-like).
- **Communication Module:** Meetings, chat, video conferencing.

5. Integration & Testing

- Integrate modules for smooth interoperability.
- Conduct unit testing, integration testing, and user acceptance testing (UAT).

6. Deployment

- Deploy ERP on cloud servers for scalability.
- Provide subscription-based access for organizations.

7. Maintenance & Updates

- Regular bug fixing and performance optimization.
- Feature enhancements based on feedback.

Hardware and Software Resources

Hardware Requirements

- **Server-Side (Deployment on AWS EC2):**
 - Minimum: 4 vCPUs, 16 GB RAM, 100 GB SSD storage
 - Scalable instance for handling high concurrent users
- **Client-Side (User Systems):**
 - Any modern system with at least: Dual-core processor, 4 GB RAM, 512 MB GPU, latest browsers
- **Network Requirements:**
 - Stable internet connection (minimum 10 Mbps recommended)
 - Load balancer for handling peak traffic

Software Requirements

Backend

- **Technology:** Node.js (REST APIs)
- **Frameworks:** Express.js
- **Authentication:** JWT / OAuth 2.0
- **Testing Tools:** Mocha / Jest

Frontend

- **Frameworks:** React.js & Vue.js (hybrid approach for different modules)
- **Styling:** Tailwind CSS
- **UI/UX Tools:** Figma (for design prototyping)

Database

- **DBMS:** MongoDB (NoSQL, scalable for ERP modules)
- **Hosting:** MongoDB Atlas / AWS DocumentDB
- **Backup:** Automated backup scripts

Collaboration & Communication Tools

- **Custom-built modules** for:
 - Chat (WebSocket-based)
 - Video Conferencing (WebRTC-based)
 - Meeting Scheduler

Deployment & Hosting

- **Cloud Provider:** AWS EC2
- **Web Server:** Apache HTTP Server
- **Load Balancing & Scaling:** AWS Elastic Load Balancer (ELB)
- **CI/CD Pipeline:** GitHub Actions / Jenkins integrated with AWS CodeDeploy

Security

- **Data Encryption:** SSL/TLS, AES-256 for data at rest

- **Firewall & Access Control:** AWS Security Groups
 - **Monitoring:** AWS CloudWatch, ELK Stack
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Expected Outcomes

1. Centralized ERP Platform

- A single system integrating **project management, HR, payroll, employee records, and communication tools** to reduce fragmentation of operations.

2. Admin Dashboard

- Real-time organizational insights for administrators covering **projects, employees, salaries, and performance metrics** in one view.

3. HR Dashboard

- Streamlined HR operations including **attendance tracking, payroll automation, employee/intern management, and performance evaluation**.

4. Project Dashboard (Employee View)

- Jira-like features to enable employees to manage **tasks, deadlines, project progress, and team collaboration** effectively.

5. Built-in Communication & Collaboration Tools

- Custom-developed tools (chat, meetings, and video conferencing) similar to **Microsoft Teams**, ensuring seamless internal communication.

6. Scalable Subscription-Based Model

- Affordable ERP system designed for **SMEs**, with subscription plans for scalability and wider adoption.

7. User-Friendly UI/UX

- Intuitive design using **React, Vue, and Tailwind** to minimize training needs and enhance productivity.

8. Robust Deployment & Scalability

- Deployment on **AWS EC2** with **Apache servers** and **CI/CD pipelines**, ensuring high availability, security, and scalability.

9. Data Security & Reliability

- Secure storage and handling of employee and organizational data using **MongoDB** and authentication mechanisms.

10. Enhanced Productivity & Cost Reduction

- Improved workflow efficiency, reduced manual work, and lower operational costs through automation.