

TECHNICAL ARCHITECTURE & DESIGN SPECIFICATION

Employee Management System (EMS)

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CONFIDENTIAL DOCUMENT

Technical Architecture & System Documentation

Employee Management System (EMS)

1. Infrastructure & Tech Stack Rationale

1.1 Core Architecture

The sys
can scal

1.2 The Stack

Compon

2. System Flow & Diagrams

2.1 High-Level System Architecture

WEB APPLICATION ARCHITECTURE



BROWSER

HTTPS



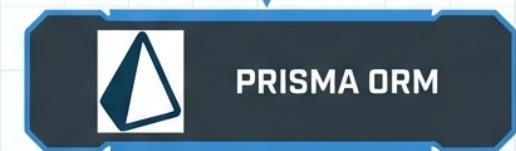
NEXT.JS
FRONTEND

API



NESTJS
BACKEND API

DATABASE QUERY



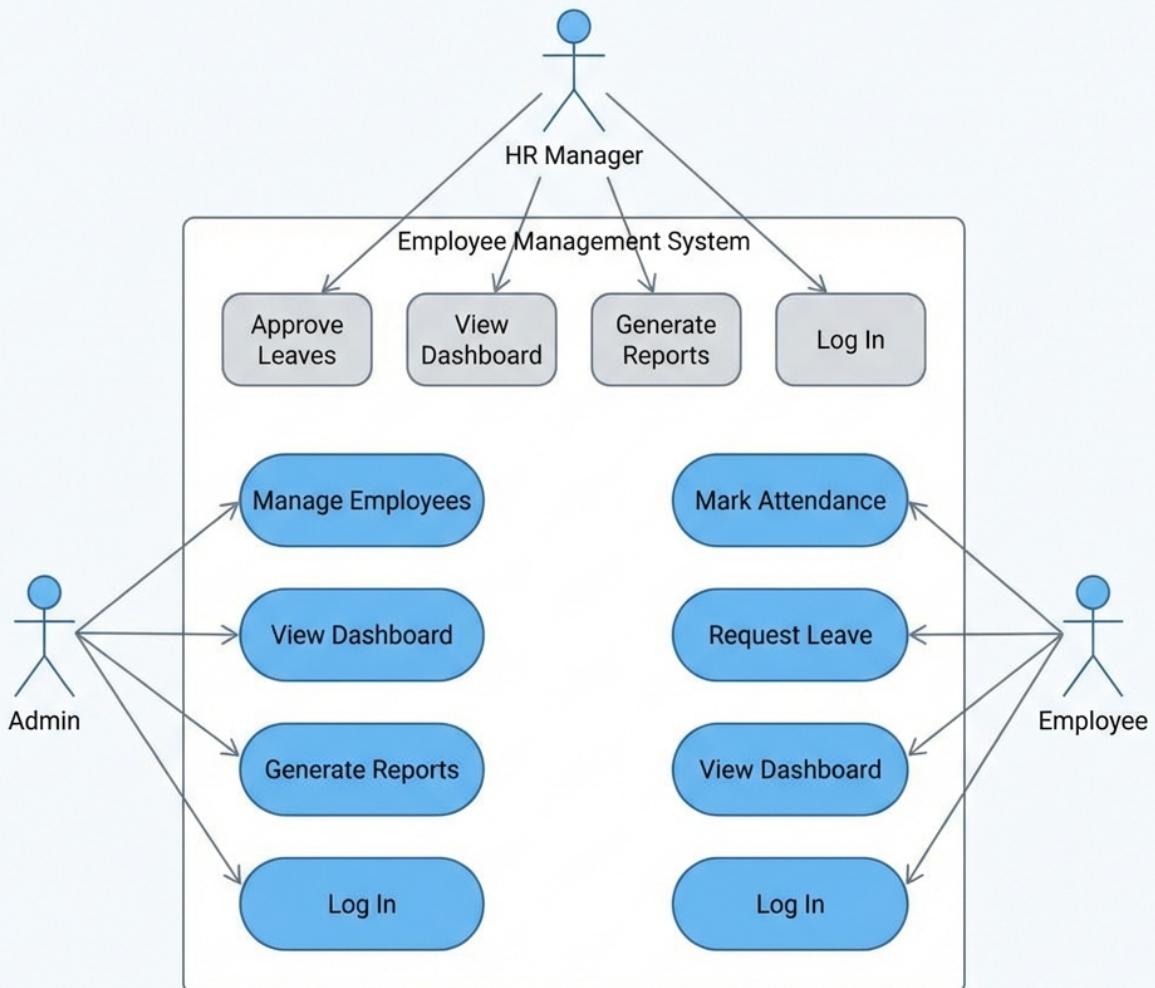
PRISMA ORM



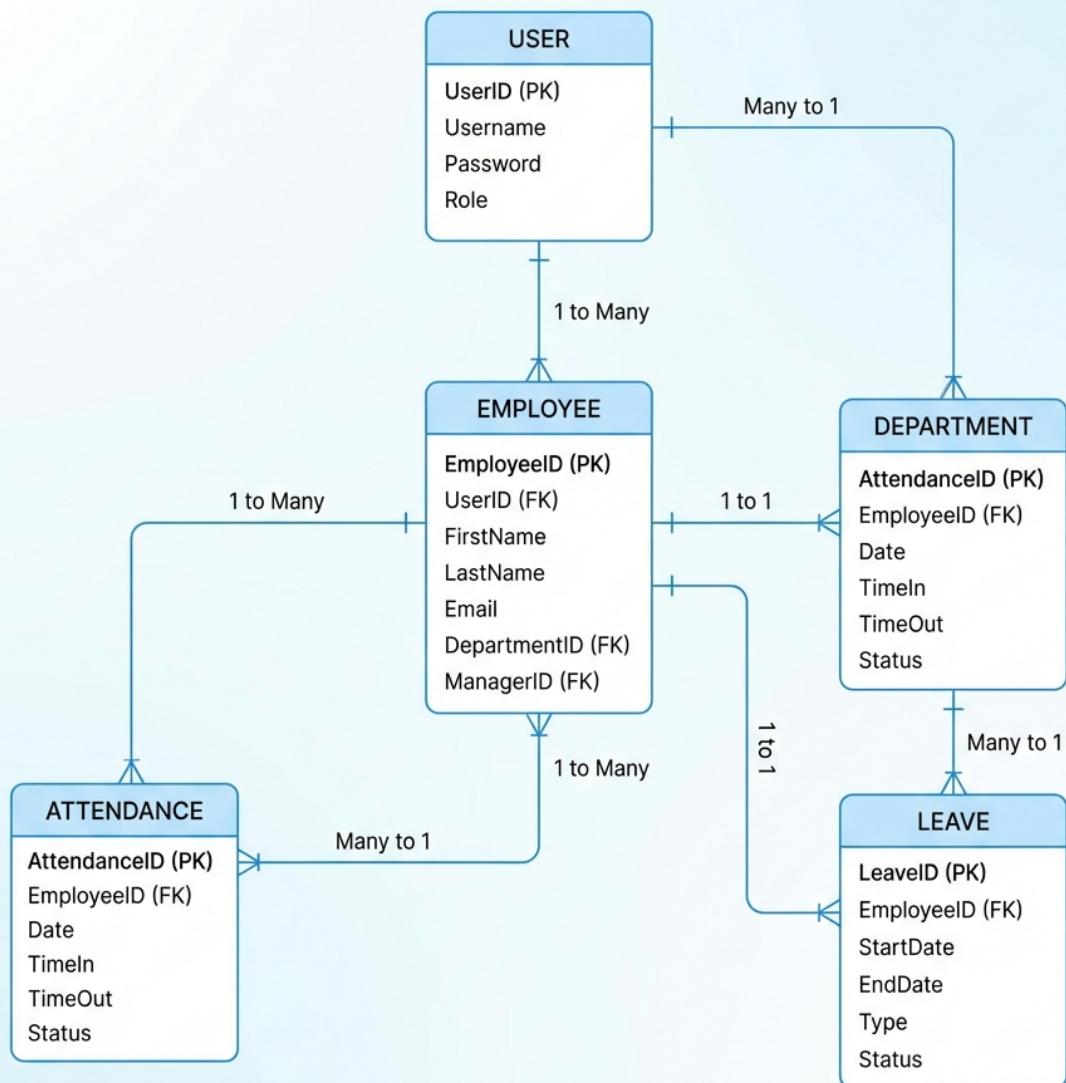
SQLITE
DATABASE

2.2 Functional Use Case Diagram

Employee Management System - Use Case Diagram

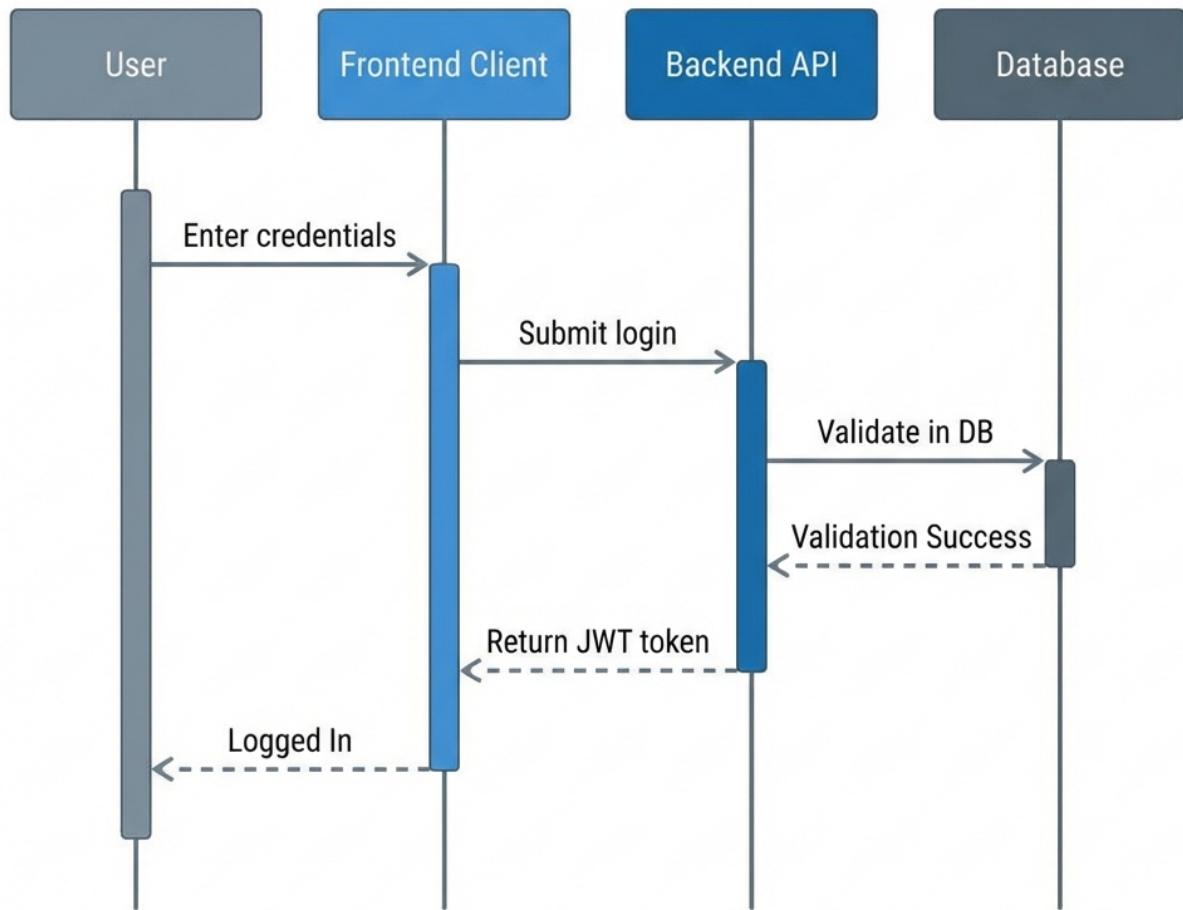


2.3 Database Entity Relationship (ER) Diagram



2.4 Authentication Flow (Sequence Diagram)

SEQUENCE DIAGRAM: AUTHENTICATION FLOW



3. Core Logic Implementation

3.1 Role-Based Access Control (RBAC)

The sys
operation

Access Matrix:

* - ADMIN: Global system access, user management, and configuration.

- * - HR: Operational management including record tracking, attendance monitoring, and leave approvals.
- * - EMPLOYEE: Personal dashboard access, attendance logging, and leave request submission.

3.2 Attendance Monitoring System

The atten

- * - Automated Logging: Captures specific check-in and check-out timestamps.
- * - Status Classification: Automatically assigns statuses based on time thresholds:

- PRESEN

3.3 Leave Management Lifecycle

The leave

4. Performance & Scalability

4.1 Native Turbopack Optimization

By utilizing
This results
setups.

4.2 Portable Database Strategy (SQLite to Enterprise)

The user
use SQL
MySQL

5. Conclusion

This Em
Next.js

