

# **TECHNICAL ARCHITECTURE & DESIGN SPECIFICATION**

**Employee Management System (EMS)**

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CONFIDENTIAL DOCUMENT

# Technical Architecture & System Documentation

## Employee Management System (EMS)

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### 1. Infrastructure & Tech Stack Rationale

#### 1.1 Core Architecture

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#### 1.2 The Stack

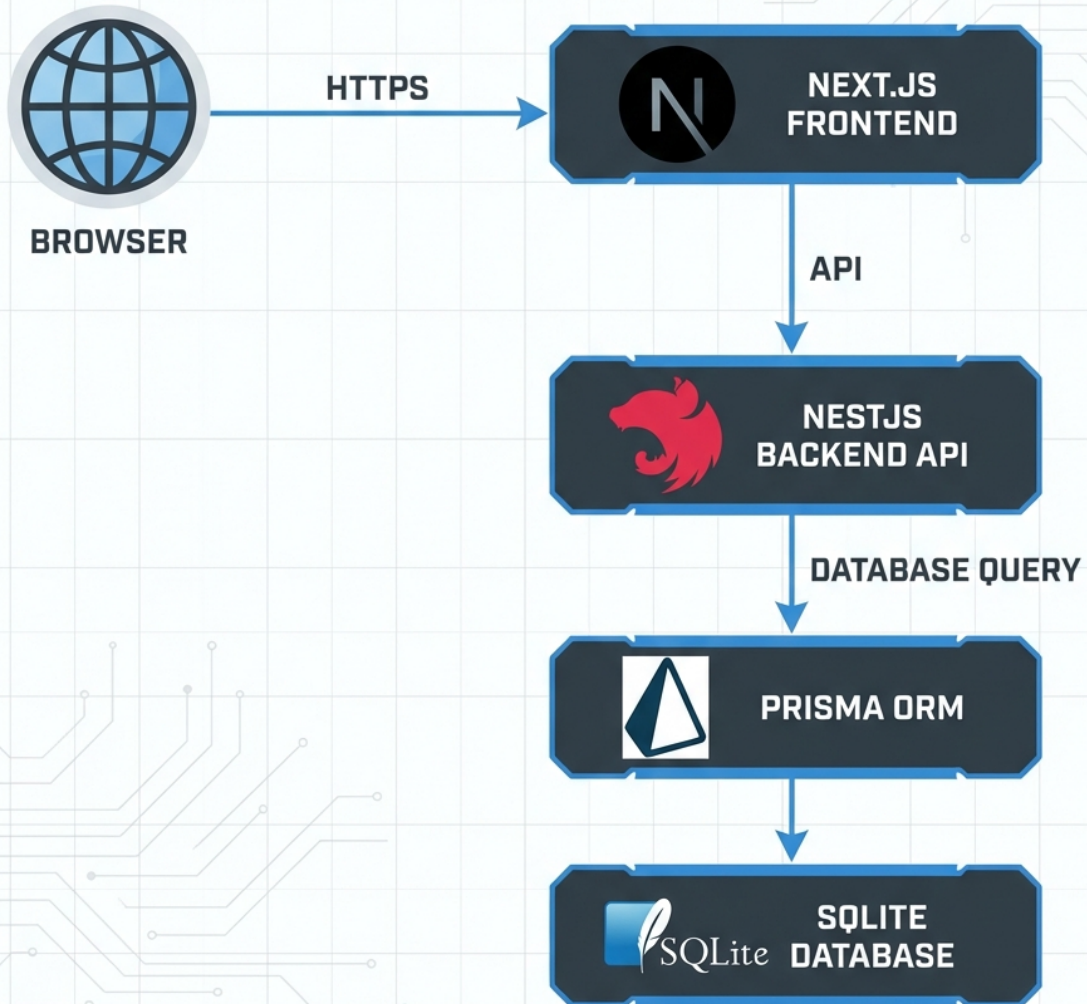
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### 2. System Flow & Diagrams

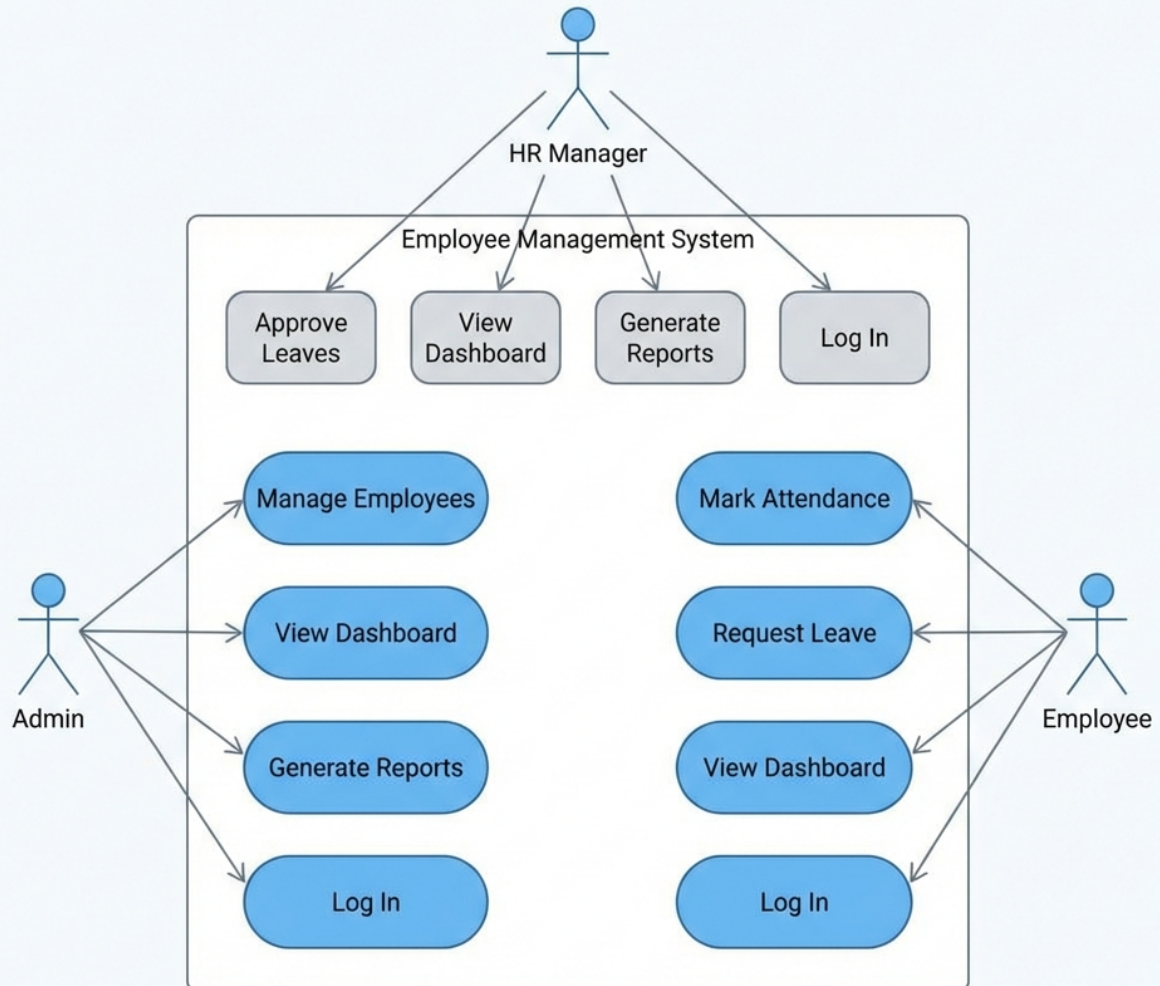
#### 2.1 High-Level System Architecture

# WEB APPLICATION ARCHITECTURE

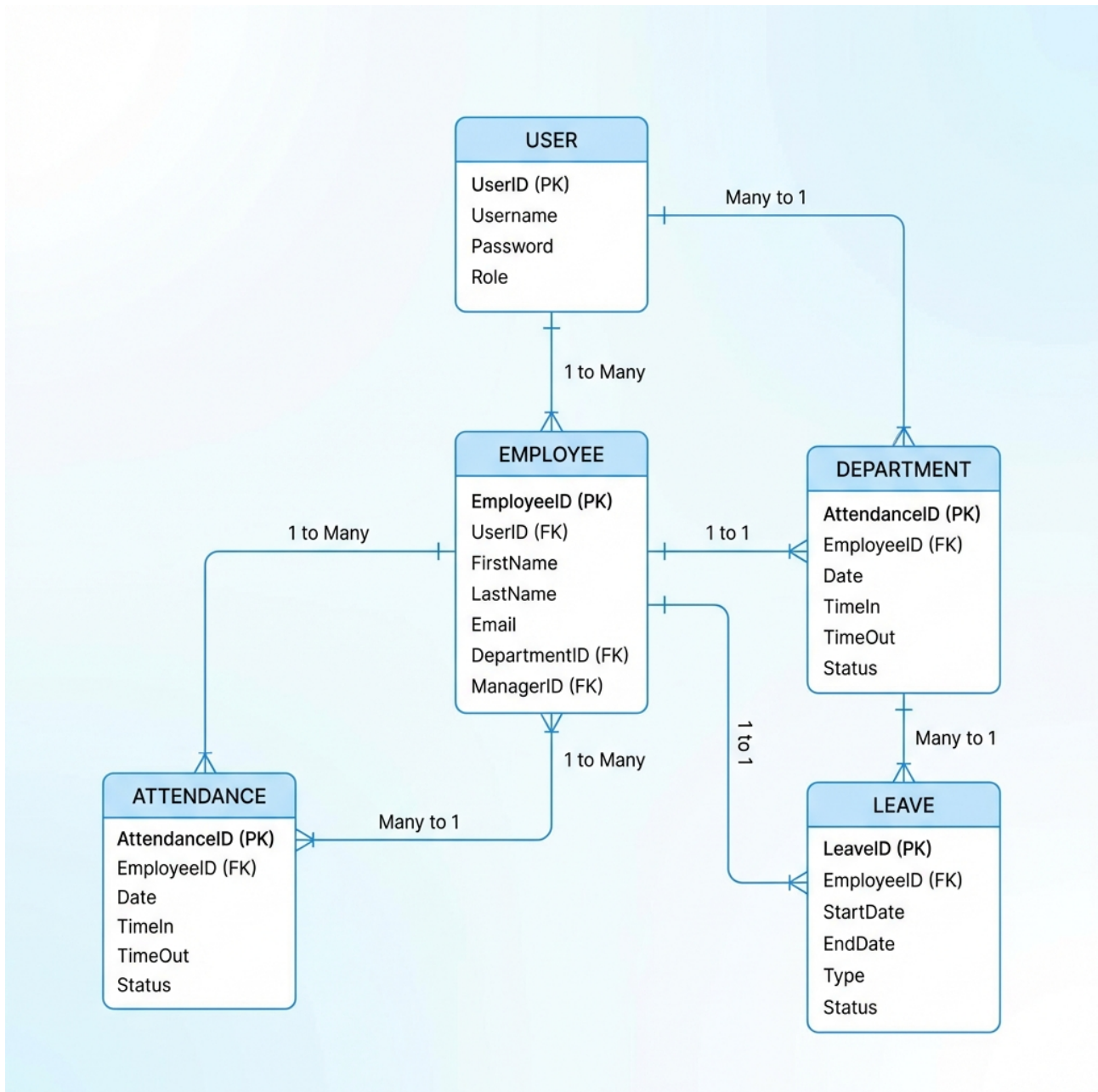


## 2.2 Functional Use Case Diagram

## Employee Management System - Use Case Diagram



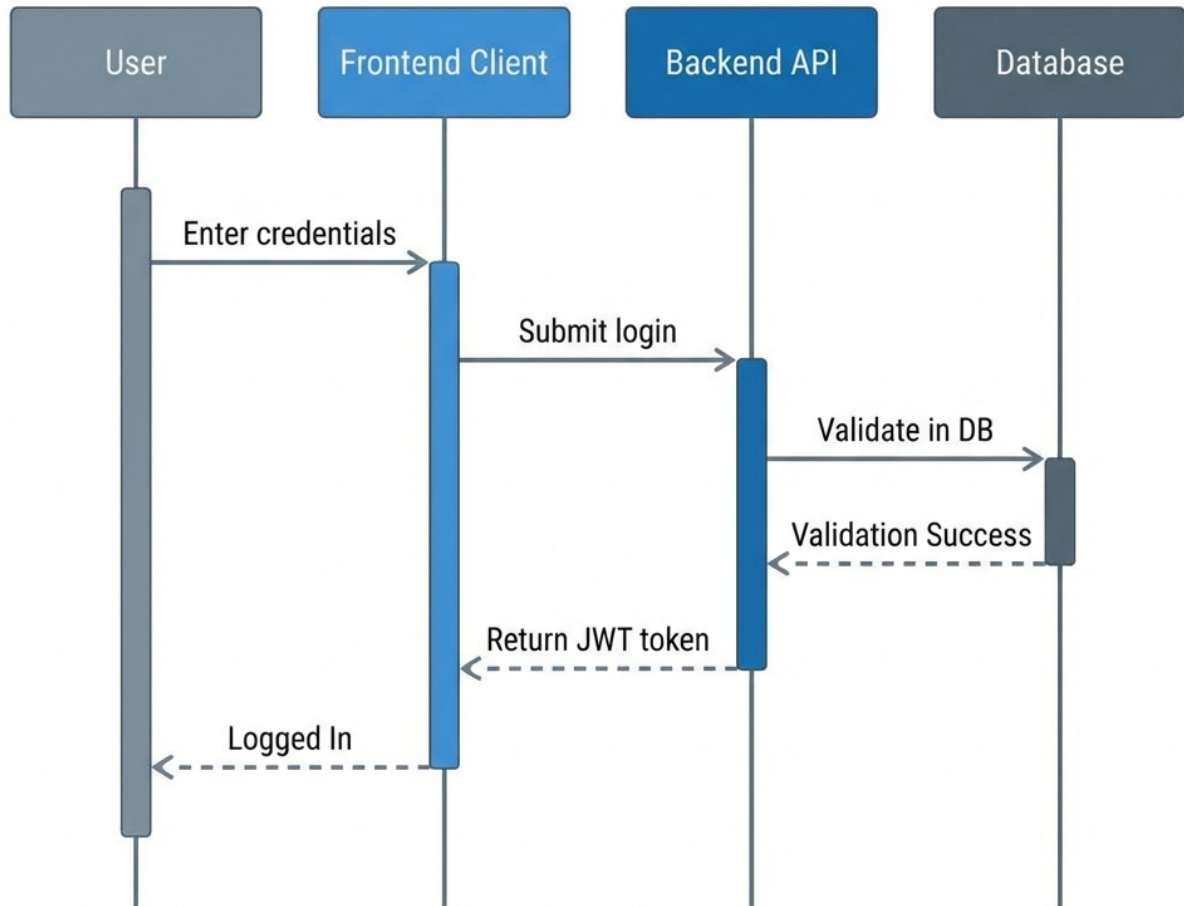
### 2.3 Database Entity Relationship (ER) Diagram



## 2.4 Authentication Flow (Sequence Diagram)



## SEQUENCE DIAGRAM: AUTHENTICATION FLOW



### 3. Core Logic Implementation

#### 3.1 Role-Based Access Control (RBAC)

Access Matrix:

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

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- \* - 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

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- \* - 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

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## 4. Performance & Scalability

### 4.1 Native Turbopack Optimization

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setups.

### 4.2 Portable Database Strategy (SQLite to Enterprise)

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MySQL

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## 5. Conclusion

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Next.js 1

