

Employee Management System (EMS)



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ABSTRACT

Employee Management System: A Full-Stack Application
The EMS project provides a centralized platform for managing employees, departments, companies, finance, and leave requests. It is designed to enhance efficiency, ensure security, and provide scalability.

INTRODUCTION

The EMS addresses challenges in manual HR and finance processes by integrating all workflows into one system. It contributes to digital transformation goals aligned with Saudi Vision 2030, enabling organizations to manage human resources effectively and securely.

PROBLEM STATEMENT

Traditional employee management is fragmented and inefficient. Organizations struggle with:

- Manual HR operations.
- Lack of secure and centralized data.
- Difficulty in handling finance and leave workflows.

OBJECTIVES

- Automate HR and employee data management.
- Provide secure authentication with role-based access.
- Simplify finance and leave request workflows.
- Deliver a scalable and user-friendly system.

SYSTEM MODEL & METHODOLOGY

- Architecture: ReactJS frontend, Spring Boot backend, MySQL database.
- Phases: Requirements → Design → Implementation → Testing → Deployment → Maintenance.
- UI/UX: Responsive design with MUI and modern notifications.

FUTURE WORK

- Use Firebase Authentication for login (Email/Password; optional Google/Apple .etc).
- Enforce RBAC via custom claims (Owner, Admin, HR, Finance, Employee).
- Protect data with Firebase Security Rules (Firestore/Storage) per role.
- Verify ID tokens (JWT) on the Spring Boot API using Firebase Admin SDK.
- Add session refresh, password strength checks, and audit logs (Cloud Functions).

RESULTS & CONCLUSIONS

- Developed EMS modules: Employees, Departments, Finance, Leave, Notifications.
- Achieved role-based authentication and secure APIs.
- Scalable for multi-tenancy and caching in future.

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REFERENCES

- Spring Boot Documentation.
- ReactJS Documentation.
- MySQL Guides.