

Case Study: Digitizing Leave Management for Engineers India Limited (EIL)

This case study outlines the process of transforming Engineers India Limited's manual, paper-based leave approval work-flow into a fully digital Leave Management System. The project demonstrates end-to-end product thinking — from identifying user pain points to designing and implementing a scalable MVP with measurable outcomes.

➤ Problem / Context

Employees relied on a manual, paper-based leave approval system that required physical forms and departmental sign-offs. This created process bottlenecks, delays, and limited visibility. HR teams faced administrative overload, while employees struggled to track leave balances and application status efficiently.

➤ Objective

To completely digitize the leave management process — eliminating paperwork, improving accessibility, and enhancing transparency.

Key success metrics included reducing approval turnaround time from days to hours and automating salary deductions for excess leaves.

➤ My Role

As the sole back-end developer and project lead, I conducted requirement gathering, process mapping, and system design.

I collaborated with HR staff to define leave types and approval policies, documented end-to-end work-flows, and developed the back-end using **Spring Boot** and **PostgreSQL** following the **MVC architecture**.

I also presented the MVP to internal stakeholders for validation and feedback.

➤ Solution / Execution

The system comprised two dashboards:

- ✓ **Employee Dashboard:** Enabled employees to apply for leaves, view balances, and track approval status.
- ✓ **Admin Dashboard:** Allowed HR to review, approve, and generate reports, with automated salary adjustments for excess leaves.

The architecture ensured **scalability**, **access control**, and work-flow **transparency**, directly addressing the previously manual process inefficiencies.

➤ Impact / Results

- ✓ Reduced approval turnaround from **2–3 days to under 4 hours** post-MVP roll-out.

- ✓ Improved HR efficiency through process automation and data-driven visibility.
- ✓ Delivered a functional prototype approved for full-scale deployment.
- ✓ Received positive user feedback for simplicity and usability.

➤ **Key Learnings**

This project strengthened my ability to translate operational bottlenecks into product opportunities.

I learned to validate assumptions early, align system design with business objectives, and measure success using tangible impact metrics.

➤ **Tools & Skills Used**

Notion • Spring Boot • PostgreSQL • REST APIs • MVC Architecture • Requirement Gathering • Process Mapping • Stakeholder Communication • User Flow Design • Analytical Thinking