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Engineering Rank Band (151-200)  
Pharmacy Rank - 77  
Innovation Rank Band (11-50)



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# SMARTPASS

## A LEAVE MANAGEMENT SYSTEM



# ABOUT US

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# CONTENT

- 01** Introduction
- 02** Literature Review
- 03** Objective
- 04** Technology (Hardware & Software)
- 05** Modules
- 06** Workflow
- 07** Report
- 08** References

# INTRODUCTION

- Innovative web-based platform
- To streamline and digitize the leave application process for hostel students
- To eliminate delays
- Ensures efficiency, transparency, and real-time tracking of the leave request process



# LITERATURE REVIEW: EXISTING SYSTEMS

01

Traditional leave application processes in educational institutions are **manual and paper-based**.

02

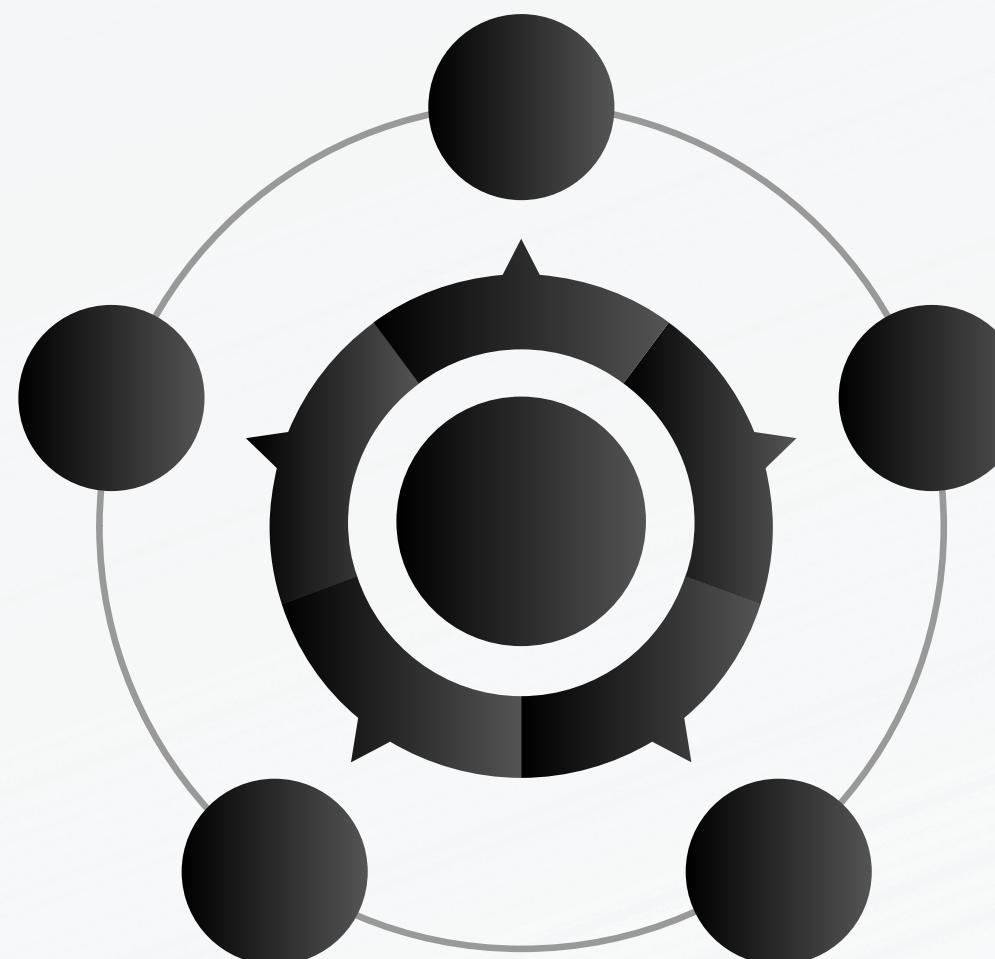
Students have to **physically visit multiple departments for approvals**, leading to inefficiencies.

03

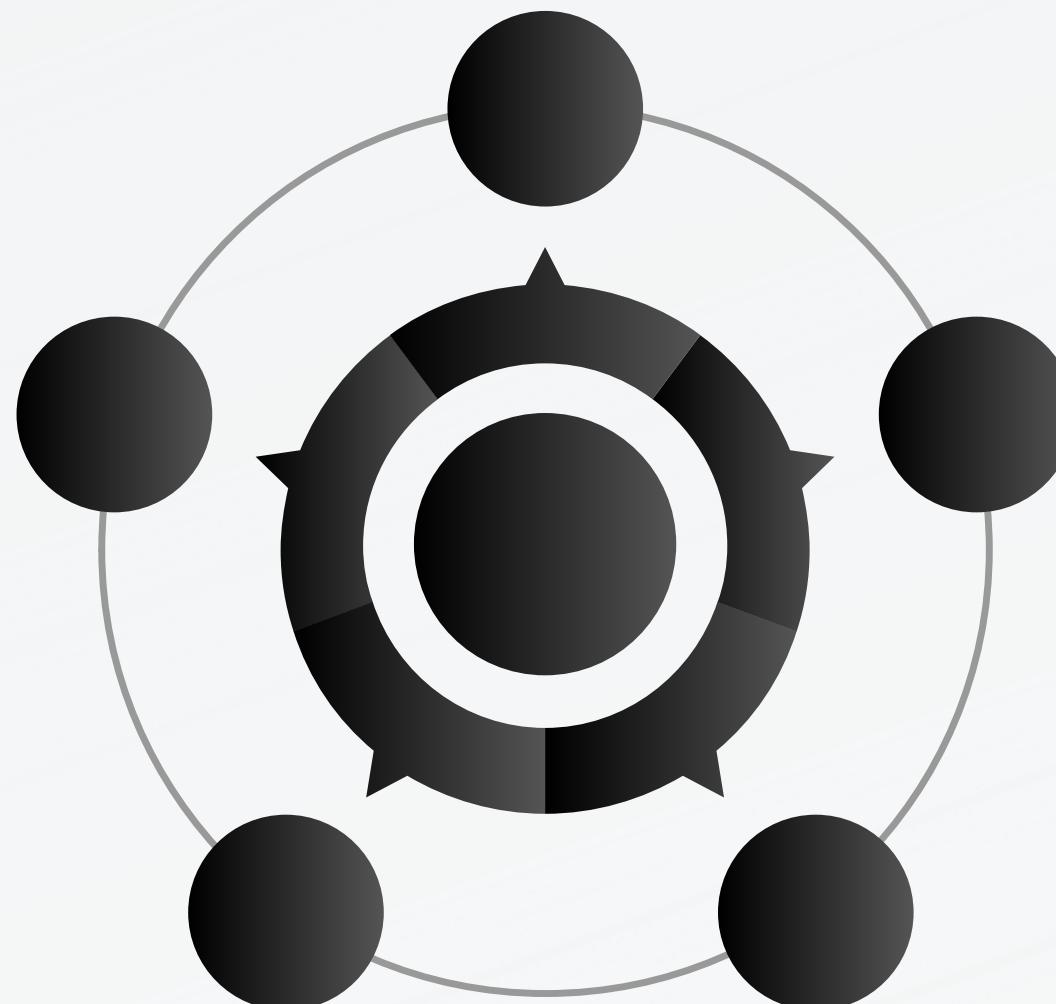
Studies on digital solutions show that **automation** improves efficiency, transparency, and satisfaction.

04

Existing digital leave management systems are **outdated or lack features** like real-time tracking and notifications.



# LITERATURE REVIEW: GAPS IN CURRENT SYSTEMS



01

**Current systems** are either general or **manual**, not tailored to hostellers' specific needs.

02

**Lack of integration** between stakeholders like HODs and wardens results in **delays** and **miscommunication**.

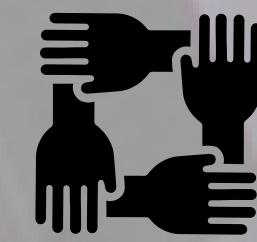
03

Many systems do **not** provide **real-time** tracking or **automated** notifications.

04

**SmartPass** fills these **gaps** by offering a **centralized**, **automated** **platform** for leave management.

# OBJECTIVE



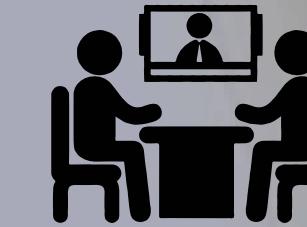
## Transformation

To **transform** the leave application process for hostel students by developing a comprehensive online platform.



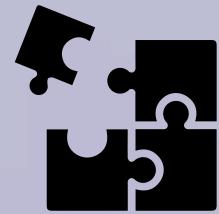
## Efficiency

To create an **efficient**, **user-friendly system** that allows students to **submit leave requests and receive approvals** through a centralized digital portal.



## Automation

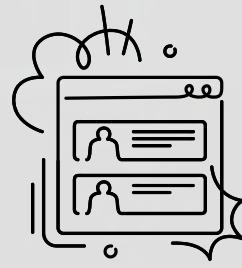
**Automates** submission and approval process and avoids delay.



## Reduces Delay

**Improve communication** by providing **real-time updates** on application status and **reduce reliance on physical paperwork**.

# TECHNOLOGY: SOFTWARE REQUIREMENTS

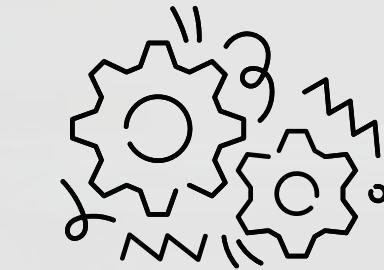


**Programming Languages:**  
JavaScript, HTML, CSS.

**Database:**  
MongoDB.



**Frameworks:**  
React.js for frontend  
development, Node.js  
with Express.js for  
backend.



**Development Tools:**  
Visual Studio Code (VS  
Code) for code  
development.  
GitHub for version control.  
Postman for API testing.

# TECHNOLOGY: HARDWARE REQUIREMENTS

## Development Environment:

Development can be done on any **standard PC or laptop** with a minimum configuration of 8GB RAM and a multi-core processor.

## Client Requirement:

Any **device** (PC, tablet, smartphone) **with an internet connection** and a modern web browser (e.g., Chrome, Firefox, Safari).

## Server Requirement:

A cloud-based server (like AWS EC2) with a minimum of 2GB RAM and **scalable storage to handle student requests and administrative actions**.



# MODULES

## Leave Application Module

Facilitates the submission and status updation of leave requests by students.



## User Authentication Module

Allows students and authorities to securely log in to the portal using their credentials.



## Application Review Module

Enables HODs to review submitted leave applications and also generate a report of leave applications.



## Leave History Module

Keeps a record of all leave applications submitted by students from different department, different hostels.



## Feedback Module

Allows users to provide feedback on the portal and its functionalities.

# WORKFLOW

## 01 User Login

- New users register on the portal by providing necessary details.
- Users receive a confirmation email to verify their accounts
- Registered users log in using their credentials.

## 02 Leave Application Submission

- Logged-in students access the Leave Application Module.
- Students fill out the leave application form, providing details such as leave dates and reason.
- Students submit the application and later can check status of their applications.
- Students can also edit/delete their pending requests.



# WORKFLOW

03

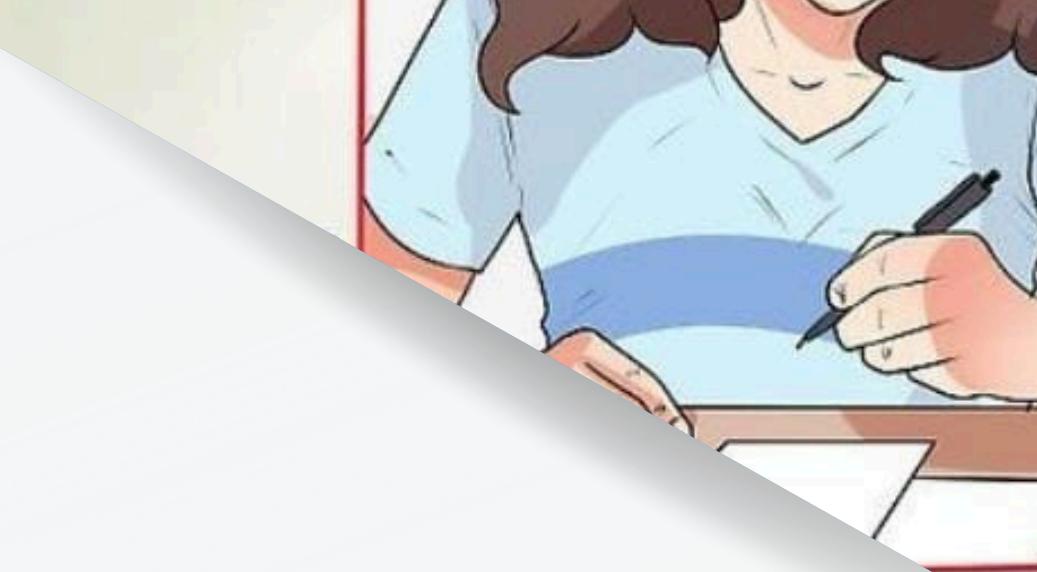
## Application Review by Authorities

- HODs log in to the portal to access the Application Review Module.
- They view a dashboard listing all pending leave applications.
- They review applications and can approve or reject each request.
- They can also generate reports based on the leave applications (e.g. month with max no. of applications)

04

## Leave History Management

- Wardens, Guards can access the Leave History Module to view past applications, including statuses.
- They can filter and download the leave history as needed.





## **05 Feedback Collection**

- Users can submit feedback about the portal through the Feedback Module.
- Feedback is reviewed by administrators for improvements.

## **06 Continuous Improvement**

- Regular updates and maintenance of the portal based on user feedback and administrative needs.



# REPORT:

- **Leave Application Reports:** Provides insights into the leave application trends among students.
- **Leave History Reports:** Maintains records of students' leave histories for better monitoring.
- **Feedback and Satisfaction Reports:** Analyzes user feedback on the SmartPass portal.
- **Administrative Reports:** Provides insights for administrators on the system's usage and effectiveness.

# REFERENCES:

## **Research papers and articles**

- Design Steps of Online Leave Management Application System for Academic Institution by Prof. Sangram D. Jadhav, Prof. Amarsinha A. Ranaware,  
International Journal of Innovations in Engineering Research and Technology: 2023: NCETSAE - July
- Leave Management Portal by M. Iswarya, C. Saikarthick, K. Sudarshan. Published in International Carnahan Conference on Security Technology, 9 November 2022

## **User feedbacks and survey data:**

- Data collected from initial user surveys and feedback forms during the testing phase of Smart Pass.

# THANK YOU

