

Digital Out Pass Management System

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ABSTRACT

The Digital Out Pass Management System (DOPMS) is an innovative web-based application designed to streamline and digitize the process of managing student exit permissions in educational institutions. The system replaces traditional paper-based methods, addressing issues like inefficiency, security vulnerabilities, and environmental concerns.

It offers a unified platform for students to request out passes, administrators to process approvals, and gatekeepers to track exits in real time. By automating manual tasks, DOPMS significantly reduces human error, speeds up operations, and enhances transparency. The system incorporates role-based functionality, allowing students, parents, and administrators to interact efficiently through a user-friendly interface. Additional features like real-time data retrieval, automated notifications, and detailed reporting further enhance operational efficiency.

Moreover, the system contributes to sustainability by eliminating the need for paper-based documentation. With its scalable design, DOPMS is capable of accommodating the growing needs of educational institutions, ensuring reliability and ease of use. Future iterations aim to include mobile applications, QR-based authentication, and biometric integration for enhanced usability and security.

The Digital Out Pass Management System (DOPMS) is designed to modernize the process of issuing and tracking student gate passes in academic institutions. In the traditional system, students are required to fill out paper-based forms or make verbal requests for out passes, which are then manually approved by administrators. This method is slow, error-prone, and lacks transparency. Furthermore, paper passes can be easily misplaced or forged, posing significant security risks. DOPMS addresses these challenges by providing an online platform where students can request out passes digitally. The system routes these requests to the appropriate authorities for approval, ensuring a streamlined and secure workflow. It also maintains a comprehensive record of all transactions, making data retrieval and reporting easier for administrators. By replacing the manual system with an automated one, DOPMS reduces administrative workload, enhances security, and provides a better user experience. The system also aligns with sustainability goals by eliminating paper usage, making it an eco-friendly alternative.

Existing System

The traditional gate pass management system involves physical forms, verbal requests, and manual record-keeping. This process is labor-intensive, slow, and error-prone, often leading to inefficiencies and security risks. Paper passes are susceptible to loss or forgery, and manual logs are challenging to search for data retrieval or reporting. Additionally, the dependency on paper contributes to environmental waste, highlighting the need for a more sustainable alternative.

1. INTRODUCTION

Proposed System

The DOPMS overcomes the limitations of the manual system by offering an automated platform for requesting, approving, and tracking out passes. The system is designed to be secure, efficient, and user-friendly, with features like electronic gate passes, real-time monitoring, and detailed reporting capabilities. It ensures a seamless workflow for all stakeholders, reduces paperwork, and supports a greener approach to resource management. Future enhancements include integrating mobile apps, biometrics, and QR codes for further security and convenience.

2. REQUIREMENT ANALYSIS

Functional Requirements

1.Admin

- Login
- Add/Delete Students
- View/Update student details
- Add/View Pass requests
- Delete Pass requests
- Logout

2.Student

- Register
- Login
- Seeking Permission
- View pass request
- Cancel request
- Logout

3.Head of the Department

- Login
- View pass request
- Accept/ Reject pass request

4.Parent

- Login
- View pass request
- Accept/ Reject pass request

- View updated request status
- Logout

Non-Functional Requirements

1. **Performance:** Requests are processed and approval statuses are updated without noticeable delays.
2. **Scalability:** The system is able to handle a growing number of users.
3. **User-Friendly:** Intuitive interface for easy navigation and operation.
4. **Reliability:** The approval workflow functions consistently, even under heavy loads.
5. **Security:** Protection of student data.

Software Resources

The software requirements document is the specification of the system. It should include both the definition and a specification of the requirements. It is a set of what the system should do rather than how it should do it. The software requirements provide a basis for creating the software requirements specification. It is useful in estimating cost, planning team activities, performing tasks and tracking the team's progress throughout the development activity.

Hardware Resources

Hardware Requirements are the most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware.

- | | |
|-------------|------------|
| • Processor | : intel i3 |
| processor | |
| • RAM | : 8 GB |
| • Hard disk | : 256 GB |

3. DESIGN

Design represents the number of components we are using as a part of the project and the flow of request processing i.e., what components in processing the request and in which order. An architecture description is a formal description and representation of a system organized in way that supports reasoning about the structure of the system.

Software Architecture

Software architecture design tools help to build software that doesn't have security issues. This is key because there are software risks in all software development process. When teams software flaws or bugs, they are able to move forward with confidence. However, since this isn't always possible, software architecture design tools need to

have the ability to find flaws during the creation of software and correct them efficiently. When using software architecture design tools that can identify flaws, you will have the ability analyse the fundamental software design, assess chance of an attack, figure out potential threat elements, and identify any weaknesses or gaps in existing security.

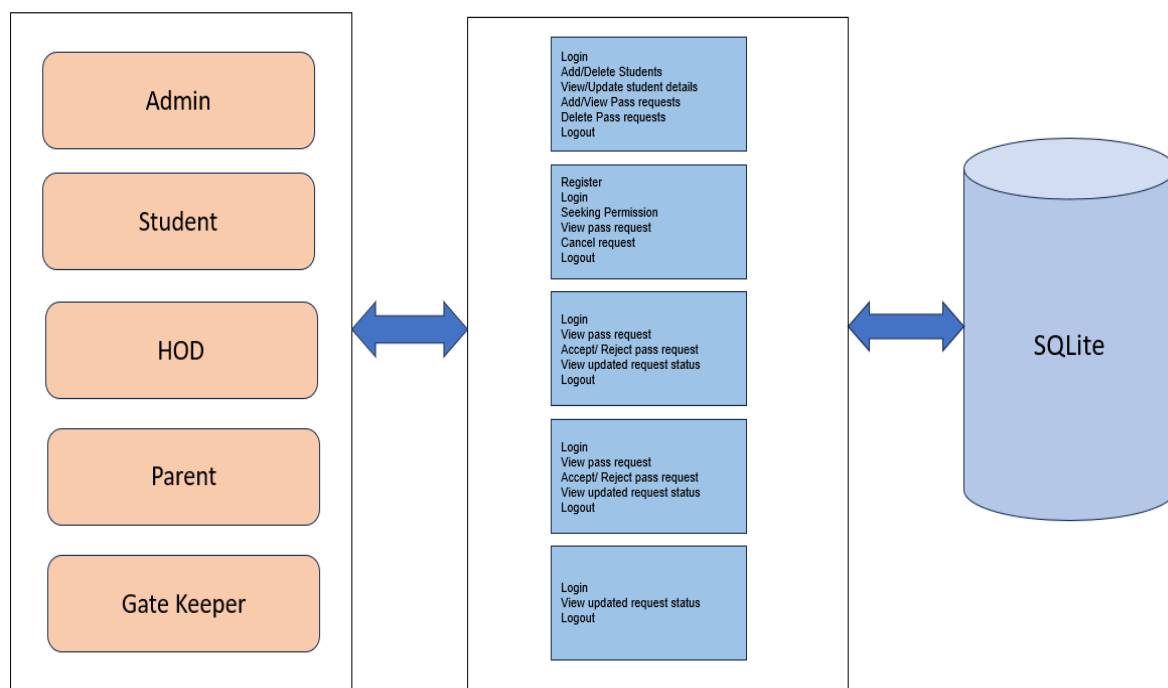


Fig.3.1 Software Architecture

Technical Architecture

Technical Architecture is a form of IT architecture that is used to design computer systems. It

involves the development of a technical blueprint with regard to the arrangement, interaction, and interdependence of all elements so that system-relevant requirements are met.

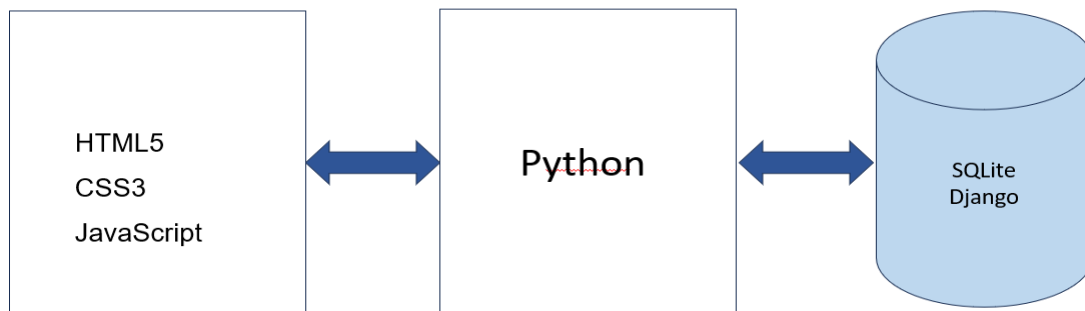


Fig 3.2 Technical Architecture

4.IMPLEMENTATION

PYTHON

Python is a powerful, high-level programming language that is widely recognized for its simplicity and readability. Created by Guido van Rossum and first released in 1991, Python was designed to be easy to learn and use, making it an ideal language for beginners and professionals alike. Its clean and intuitive syntax, which often resembles plain English, allows developers to focus more on solving problems rather than struggling with complex

syntax. Python's versatility enables it to be used in various domains, such as web development, data science, machine learning, artificial intelligence, and automation.

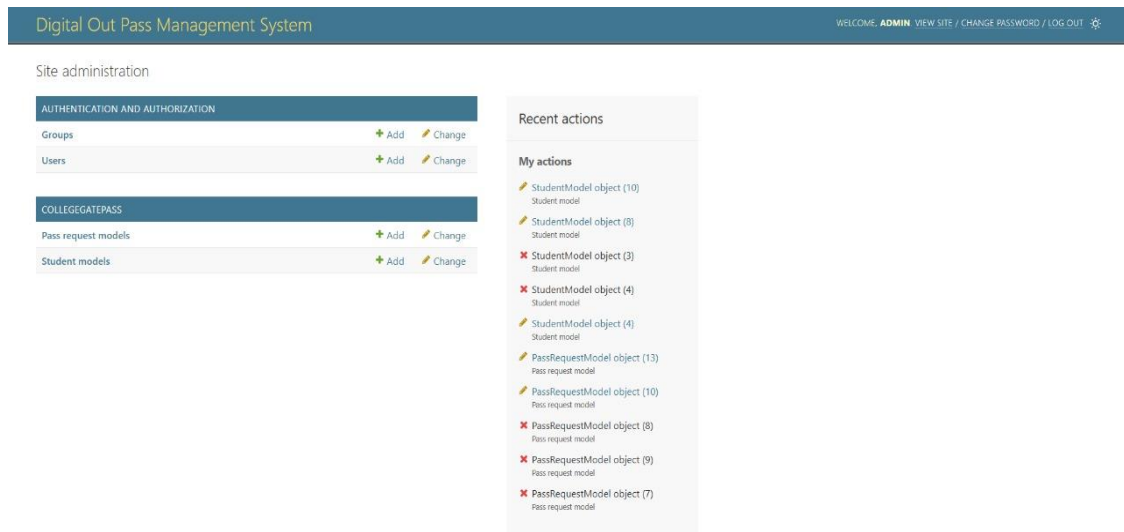
Django

Django is a high-level Python web framework designed to facilitate the development of robust and scalable web applications. Created in 2005, Django promotes rapid development and clean, pragmatic design.

5- SCREENSHOTS

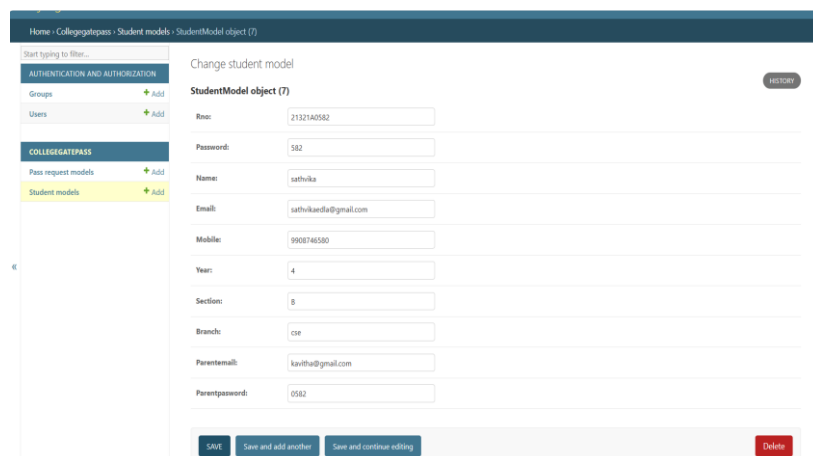


Screenshot 1 Admin Login Page



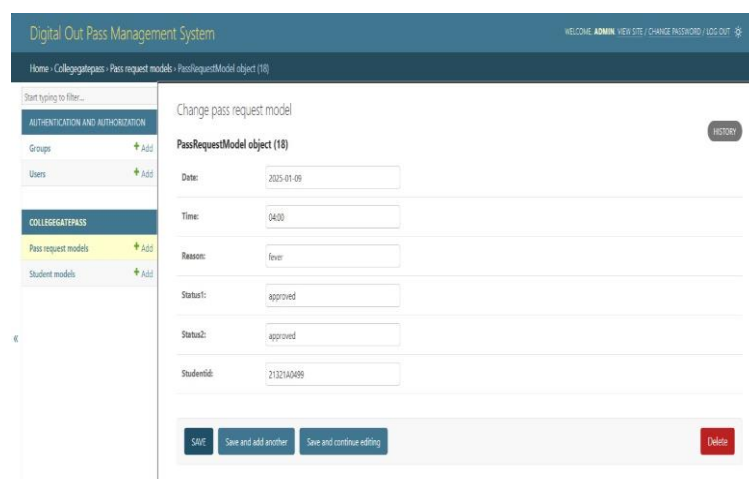
The screenshot shows the 'Digital Out Pass Management System' admin home page. The header includes the system name and user information: 'WELCOME, ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT'. The main content area is titled 'Site administration' and is divided into two columns. The left column contains two sections: 'AUTHENTICATION AND AUTHORIZATION' with links for 'Groups' and 'Users' (each with '+ Add' and 'Change' buttons), and 'COLLEGEGATEPASS' with links for 'Pass request models' and 'Student models' (each with '+ Add' and 'Change' buttons). The right column is titled 'Recent actions' and lists a series of actions under 'My actions', including 'StudentModel object (10)', 'StudentModel object (8)', 'StudentModel object (3)', 'StudentModel object (4)', 'PassRequestModel object (13)', 'PassRequestModel object (10)', 'PassRequestModel object (8)', 'PassRequestModel object (9)', and 'PassRequestModel object (7)', each with a status icon (yellow for success, red for failure) and a 'Student model' or 'Pass request model' label.

Screenshot 2 Admin Home Page



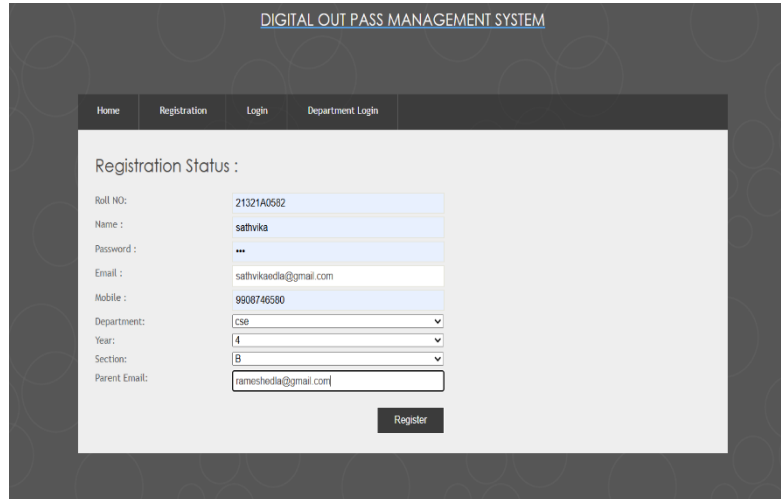
The screenshot shows the 'Change student model' form in the 'Digital Out Pass Management System'. The breadcrumb trail is 'Home > Collegategatepass > Student models > StudentModel object (7)'. The form is titled 'Change student model' and 'StudentModel object (7)'. It contains several input fields: 'Rno:' (21321A0582), 'Password:' (582), 'Name:' (sathvika), 'Email:' (sathvikasath@gmail.com), 'Mobile:' (9908746580), 'Year:' (4), 'Section:' (8), 'Branch:' (cse), 'Parentemail:' (kavitha@gmail.com), and 'Parentpassword:' (0582). At the bottom, there are four buttons: 'SAVE', 'Save and add another', 'Save and continue editing', and a red 'Delete' button.

Screenshot 3 Admin Adds Student



The screenshot shows the 'Change pass request model' form in the 'Digital Out Pass Management System'. The breadcrumb trail is 'Home > Collegategatepass > Pass request models > PassRequestModel object (18)'. The form is titled 'Change pass request model' and 'PassRequestModel object (18)'. It contains several input fields: 'Date:' (2025-09-09), 'Time:' (04:00), 'Reason:' (fever), 'Status1:' (approved), 'Status2:' (approved), and 'StudentId:' (21321A0489). At the bottom, there are four buttons: 'SAVE', 'Save and add another', 'Save and continue editing', and a red 'Delete' button.

Screenshot 6.4 Admin Adds Pass Request



DIGITAL OUT PASS MANAGEMENT SYSTEM

Home Registration Login Department Login

Registration Status :

Roll NO: 21321A0582

Name : sathvika

Password : ***

Email : sathvikaedla@gmail.com

Mobile : 9908746580

Department: cse

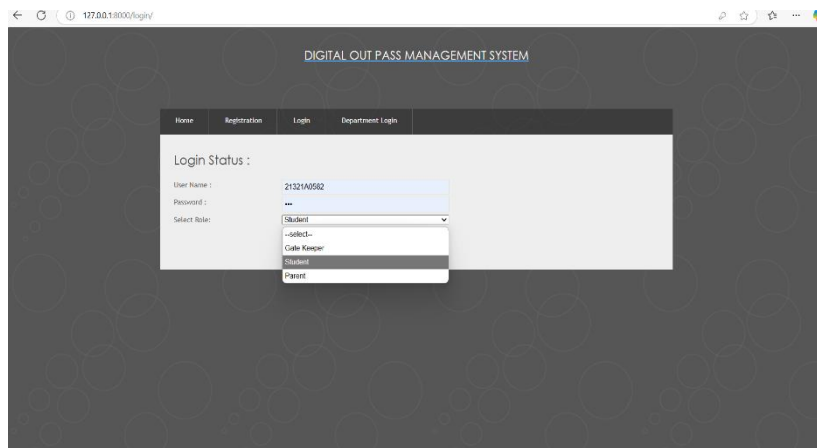
Year: 4

Section: B

Parent Email: ramesheda@gmail.com

Register

Screenshot 5 Student Registration Page



DIGITAL OUT PASS MANAGEMENT SYSTEM

Home Registration Login Department Login

Login Status :

User Name : 21321A0582

Password : ***

Select Role: Student

Student

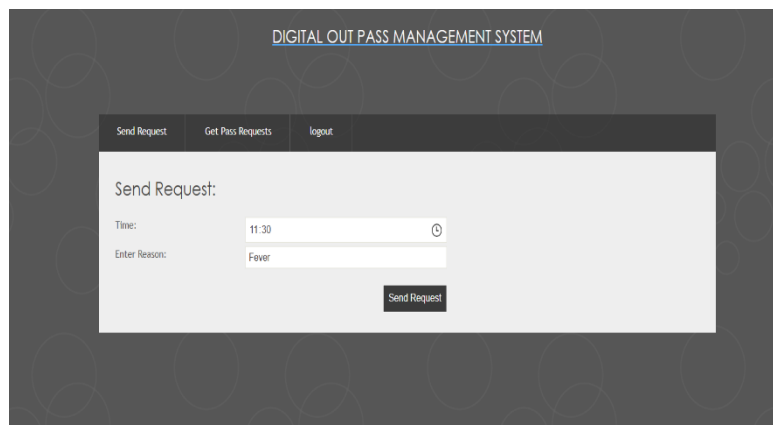
Collect

Gate Keeper

Student

Parent

Screenshot 6 Student Login Page



DIGITAL OUT PASS MANAGEMENT SYSTEM

Send Request Get Pass Requests Logout

Send Request:

Time: 11:30

Enter Reason: Fever

Send Request

Screenshot 7 Student Sends Pass Request

DIGITAL OUT PASS MANAGEMENT SYSTEM

Send Request

Get Pass Requests

logout

Welcome to 21321A0582

Student ID	Name	Branch	Year	Section	Date	Time	Reason	Parent Status	Department Status	Delete
21321A0582	sathvika	cse	4	B	2025-01-02	11:30	Fever	pending	pending	delete

Screenshot 8 Student Views Updated Request Status

6-CONCLUSION

The Digital Out Pass Management System (DOPMS) provides a modern and efficient solution to the challenges of managing out passes in educational institutions. By automating processes such as request submission, approval, and tracking, it eliminates the inefficiencies of traditional paper-based systems. The system improves security, enhances real-time monitoring, reduces paperwork, and provides a user-friendly interface for all stakeholders, including students, parents, staff, and gatekeepers. This project successfully demonstrates how technology can streamline administrative tasks, making them faster, more secure, and environmentally sustainable.

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