DR BR AMBEDKAR NATIONAL INSITUTE OF TECHNOLOGY JALANDHAR

MINOR PROJECT REPORT

ON

E-MEGA (HOSTEL MANAGEMENT WEBSITE)

B.TECH 3rd YEAR

Department of Computer Science and Engineering

Session: 2020-2024

Mentored By:

Dr Avtar Singh

Assistant Professor

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Presented by:

Priyanka Saini (20103111)

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Ravi Ranjan Kumar (20103122)

ACKNOWLEDGEMENT

We would like to extend our heartfelt way to all of the people who have contributed to the hit of completion of this undertaking.

*First and main, we would like to specific our honest gratitude to out undertaking manager **Dr Avtar Singh**, for his steerage, guide, and treasured comments for the duration of the undertaking. Their expertise, persistence, and encouragement have been instrumental in shaping our research and help us overcome diverse challenges.*

*We'd also like to extend our thanks to **Dr Rajneesh Rani**, Head of department of computer technology and Engineering, who've contributed to our instructional and professional increase via their teachings and mentorship.*

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*We provide our honest gratitude to **God** Almighty for granting us the expertise, and perseverance to correctly whole this undertaking. We additionally thank him for blessing us with supportive own **family and friends** and for guiding us via our academic journey.*

*Sooner or later, we would really like to well known the contributions of our **fellow crew members**, whose determination and teamwork has been instrumental in the successful submission of this project. Every member delivered their particular skills and perspectives of the assignment, we're pleased with what we've executed together.*

Thank you all for your treasured contributions to this assignment.

DECLARATION

*We hereby declare that the Project entitled- "**e-Mega** (Hostel Management website)" is an authenticate work carried out by us under supervision of **Dr Avtar Singh**. The work presented in this report is original and has been made solely by us.*

The project work is submitted in partial fulfilment of the requirements of the degree of Bachelors in the Department of Computer Science and Engineering at Dr BR Ambedkar National Institute of Technology Jalandhar.

We will be solely responsible if some Plagiarism is found. Thank You All.

Date: 12 May 2023

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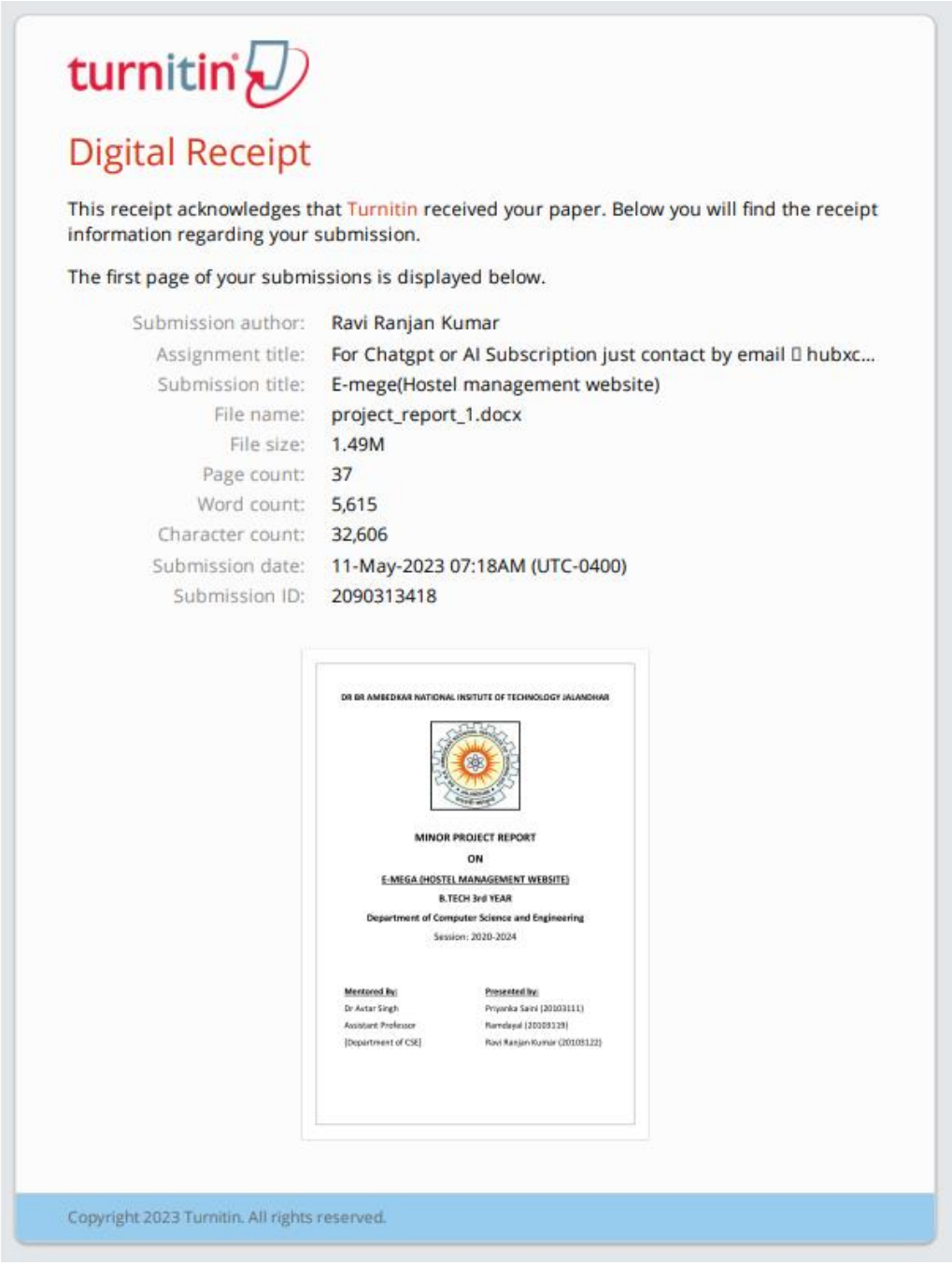
PLAGIARISM CHECK

We have conducted a plagiarism check for our Project Report on **e-Mega** using Turnitin and received a digital receipt. We extend our gratitude to our mentor, **Dr Avtar Singh**, for guiding us through this process. Our plagiarism score is below 10%, indicating that our report is authentic and original.



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INTRODUCTION- BUILDING THE FRAMEWORK

1.1 Background

For any educational institution, Hostel management is an important aspect. Proper management of hostels can enhance the overall experience of the students and ensure their safety and well-being.

The traditional methods of hostel management, which involved manual record-keeping, are time-consuming, cumbersome, and prone to human errors. The lack of transparency and accessibility can lead to confusion and miscommunication between hostel staff and students.

Additionally, managing hostel complaints can be a challenging task for hostel staff, as complaints need to be recorded, prioritized, and addressed in a timely manner. Traditional methods of managing complaints may involve paper-based forms or emails, which can be difficult to track and follow up on, leading to unresolved issues and unsatisfied students.

Furthermore, traditional methods of managing hostels may not provide real-time data, making it challenging for hostel administrators to make informed decisions.

In contrast, the e-hostel management system provides a faster and more efficient way of managing hostels, thereby reducing the workload of hostel administrators and enhancing the experience of students. The e-hostel management system is an advanced web-based application that can help to automate various aspects of hostel management, including room allocation, fee payment, getting e-gate pass, attendance tracking, and more.

1.2 Literature Survey

To conduct a literature review on the innovation of hostel management applications, we researched various sources available on the internet and examined the existing systems of several colleges. The results of this survey are outlined below:

"**Hostel management system using cloud computing**" by Jigar Patel, Krunal Patel, and Mukesh Gohel, 2018. This paper proposes an e-hostel management system using cloud computing technology for data storage and processing. The system includes features such as online booking, room allocation, billing, complaint filing, and attendance tracking.

"**Development of e-hostel management system**" by D.V. Kulkarni and V. R. Patil, 2019. This paper discusses the development of an e-hostel management system using the Java programming language and

MySQL database. The system includes features such as online booking, room allocation, billing, complaint filing, and attendance tracking.

"**Design and implementation of e-hostel management system using ASP.NET and C#**" by A.O. Adeyemo and O.A. Adesina, 2020. This paper discusses the development of an e-hostel management system using the ASP.NET web framework and C# programming language. The system includes features such as online booking, room allocation, billing, complaint filing, and attendance tracking.

And many more, these studies provide valuable insights into the design and implementation of e-hostel management systems, highlighting their potential to streamline hostel management processes, improve student experiences, and enhance the overall safety and security of hostel environments.

1.3 Problem statement and its necessity

The major Problems that motivated the solution are as follows: -

1. Manual Hostel Management Systems are Time-Consuming and Errors Prone: The traditional approach to hostel management requires manual input of data, resulting in delays and inaccuracies in the management of hostel facilities and services. This approach is prone to errors and can lead to inefficiencies in the allocation of resources, which can negatively impact student experiences.

2. Lack of Real-time Information and Data Analytics Capabilities: The absence of real-time data and analytics capabilities in traditional hostel management systems can hinder decision-making for hostel administrators. This can result in suboptimal resource allocation and can negatively impact student experiences.

3. Cumbersome and Ineffective Methods for Managing Hostel Complaints and Requests: Traditional methods of managing hostel complaints and requests can be cumbersome and ineffective, leading to unresolved issues and dissatisfaction among students.

4. Limited and Inefficient Methods of Announcements: Traditional methods of making announcements to hostel residents can be limited and inefficient, resulting in missed notifications and communication breakdowns.

5. Inconvenient Process for Obtaining Gate Passes: The process for obtaining gate passes in traditional hostel management can be inconvenient and time-consuming for students and staff.

6. Attendance Management: Manual attendance management is prone to errors and consumes a lot of time. A dedicated attendance management system is required to automate the process and reduce the chances of errors.

7. Inefficient Management of Mess-Related Information: The management of mess-related information in traditional hostel management systems can be inefficient, leading to inaccurate records and miscommunications between hostel administrators and students.

The Necessities are as follow:

1. An E-Hostel Management System Can Automate and Streamline Hostel Management Processes: An e-hostel management system can automate and streamline hostel management processes, reducing errors, saving time, and improving the overall efficiency of hostel services. This can improve the allocation of resources, leading to better student experiences.

2. Real-time Data and Analytics Capabilities Can Facilitate Informed Decision-making: An e-hostel management system can provide real-time data and analytics capabilities to hostel administrators, allowing them to make informed decisions and optimize resource allocation to meet student needs. This can lead to improved hostel management processes and better student experiences.

3. Digital Platform for Managing Hostel Complaints, Announcements, Gate Passes, and Mess-related Information Can Enhance Student Satisfaction: A digital platform for managing hostel complaints, announcements, gate passes, and mess-related information can facilitate quick and effective resolution of issues, enhance communication between hostel administrators and students, and improve the overall hostel experience.

4. Online Booking Can Improve the Accessibility of Hostel Facilities: Online booking can provide students with greater accessibility and convenience when accessing hostel facilities. This can reduce administrative burden and improve the overall efficiency of hostel management.

1.4. Feasibility: Technical and Non-Technical

Having an understanding of the feasibility of a project is crucial before embarking on it. The different types of feasibility can be summarized as follows:

Technical feasibility:

- Availability of appropriate hardware and software technologies to implement the system, such as servers, databases, and web application frameworks.
- Availability of internet connectivity and infrastructure to support the system.
- Integration with other existing systems, such as student information systems or financial management systems.
- Compatibility with different platforms and operating systems.
- Availability of technical support and expertise to manage and maintain the system.
- Ability to handle large amounts of data, users, and transactions.

Non-technical feasibility:

- Financial feasibility of implementing and maintaining the system, including hardware, software, and personnel costs.
- Availability of skilled personnel to develop and manage the system.
- Compatibility with the organizational culture and workflow.
- Acceptance and willingness of users (e.g., hostel staff, students, parents) to adopt the system.
- Legal and ethical considerations, such as data privacy laws and regulations.
- Impact on the organization's policies and procedures.
- Organizational support for implementing the system.

PROPOSED SOLUTION- INTRODUCTION STRATEGY

"Problems are not stop signs, they are guidelines." - Robert H. Schuller

2.1 Identifying Stakeholders

1. Students: They will be the primary users of the e-hostel management system for booking, attendance, complaints, gate pass, and mess-related information.

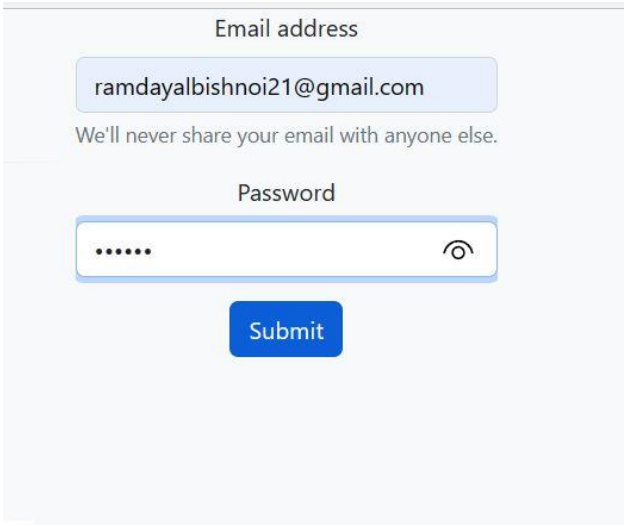
2. Hostel staff: The staff members responsible for managing the hostel will also be stakeholders as they will have to use the system to manage student requests and complaints.

3. Hostel administration: The administration of the college or university where the hostel is located will be interested in the system's implementation and its impact on overall hostel management.

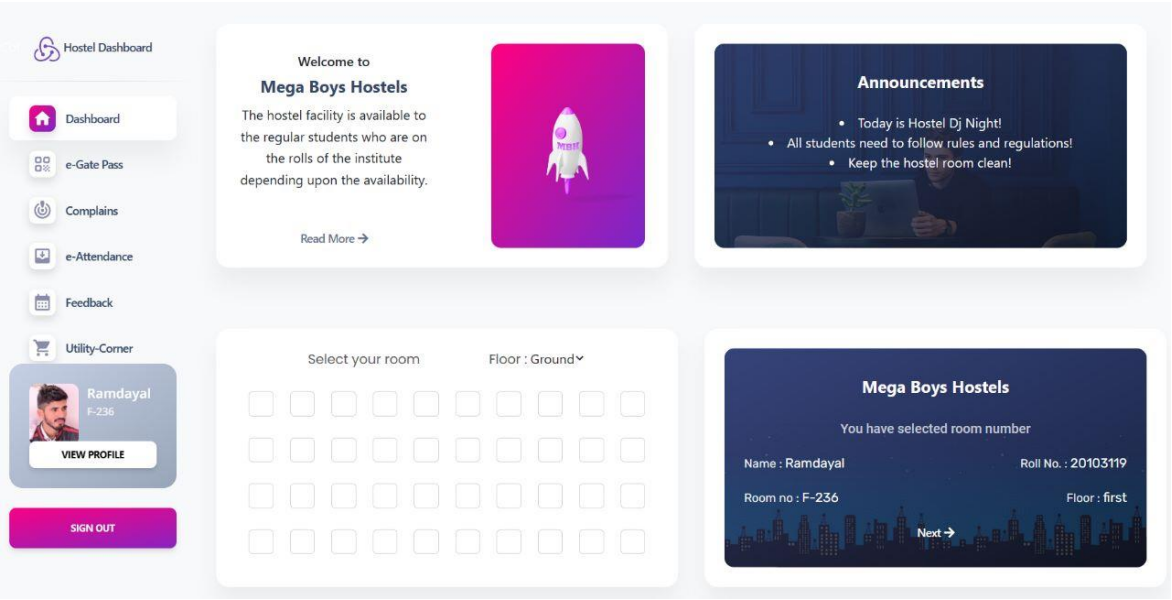
2.2 Detailed Solution

The solution in detailed way is as follow:

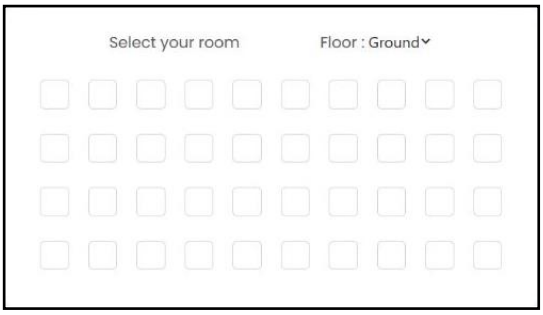
1. User Registration and Login System: The first step in our solution is to create a user registration and login system. This system will allow the students to register with the hostel management system using their email id and other required details. After registration, they will be able to log in to the system using their registered email id and password. This will ensure that only authorized users have access to the system.



2. Online Booking System: The system will have an online booking module that allows students to reserve rooms. The dashboard will look like:

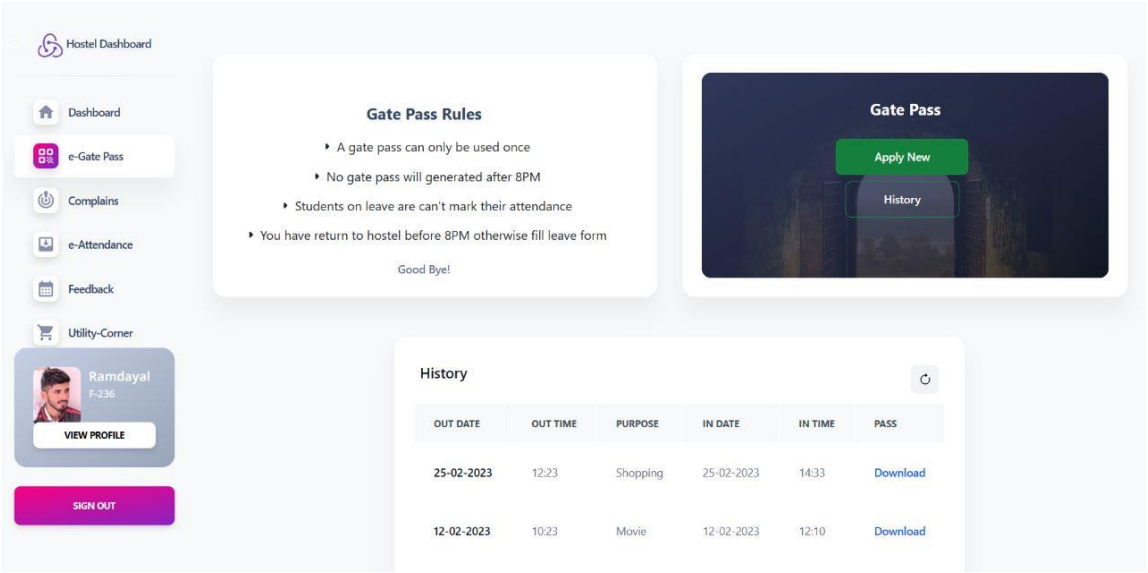


The online room allotment system features a structured layout with rows and columns representing available rooms. With the ability to select a specific floor and view room details, students can easily choose an available room that meets their requirements.

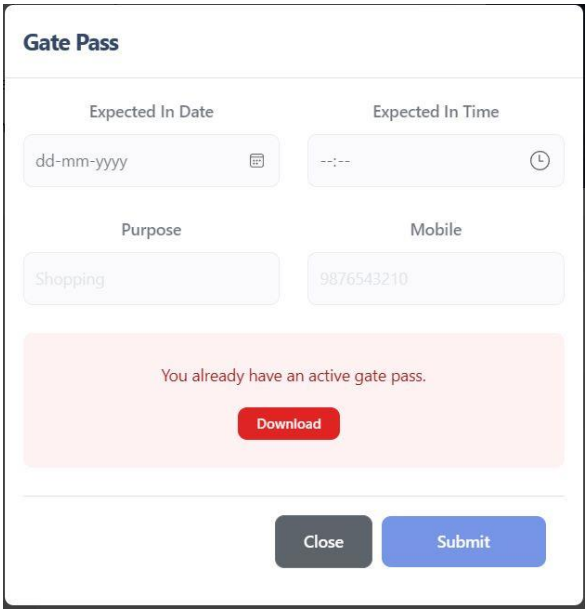


The system displays the information of the chosen room or the allocated room to the user.

3. E-Gate Pass System: The system will have an e-gate pass module that will allow students to request gate passes from their devices. The issuance of the gate pass follows a set of rules and guidelines that students must adhere to in order to be eligible for the pass.



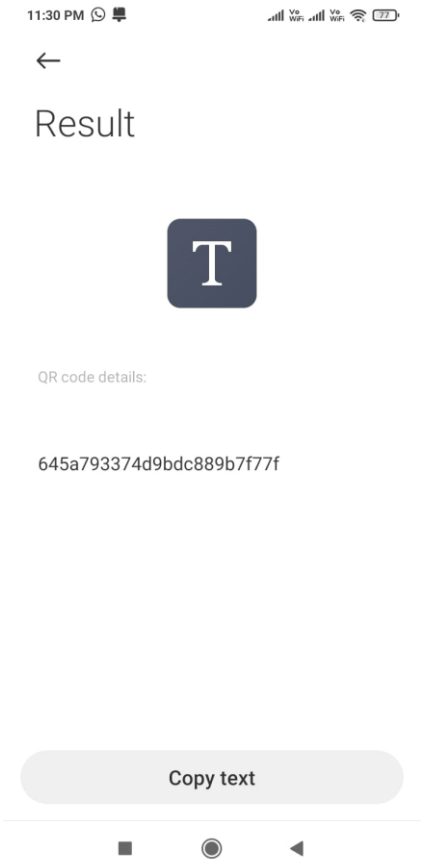
With e-gate pass, students can generate gate passes online by logging into the e-hostel management system and providing relevant information such as expected-in date and time, purpose and mobile number.



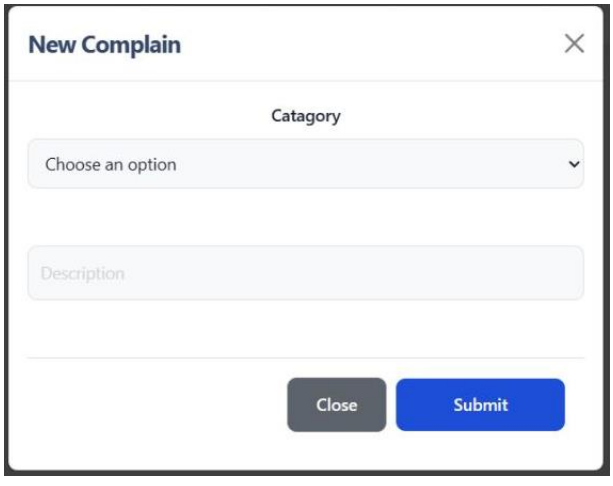
The students can obtain a Gate pass that includes a QR code for verification purposes by the authorities. The gate pass will look like:

4. Verification of e-gate pass by security guards: There is a QR code on the e-gate pass, then the guards can use a QR code scanner to verify the authenticity of the pass. When the scanner reads the QR code, it will decode the information contained in it and verify if the e-

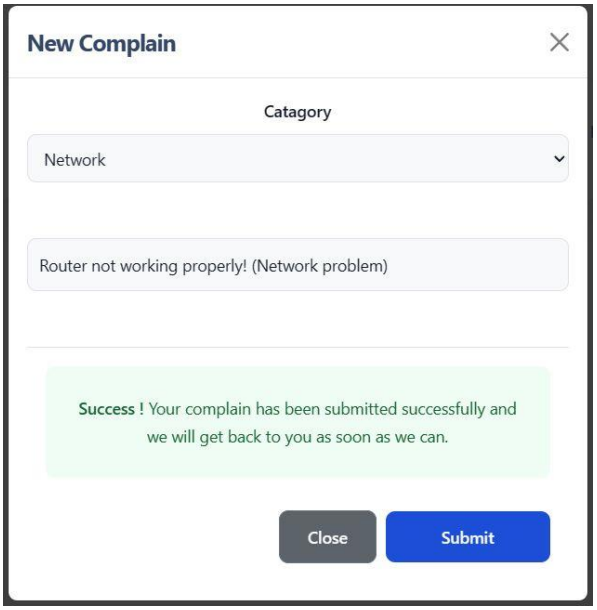
gate pass is valid or not. The use of a QR code can make the verification process faster and more efficient as compared to manual verification.



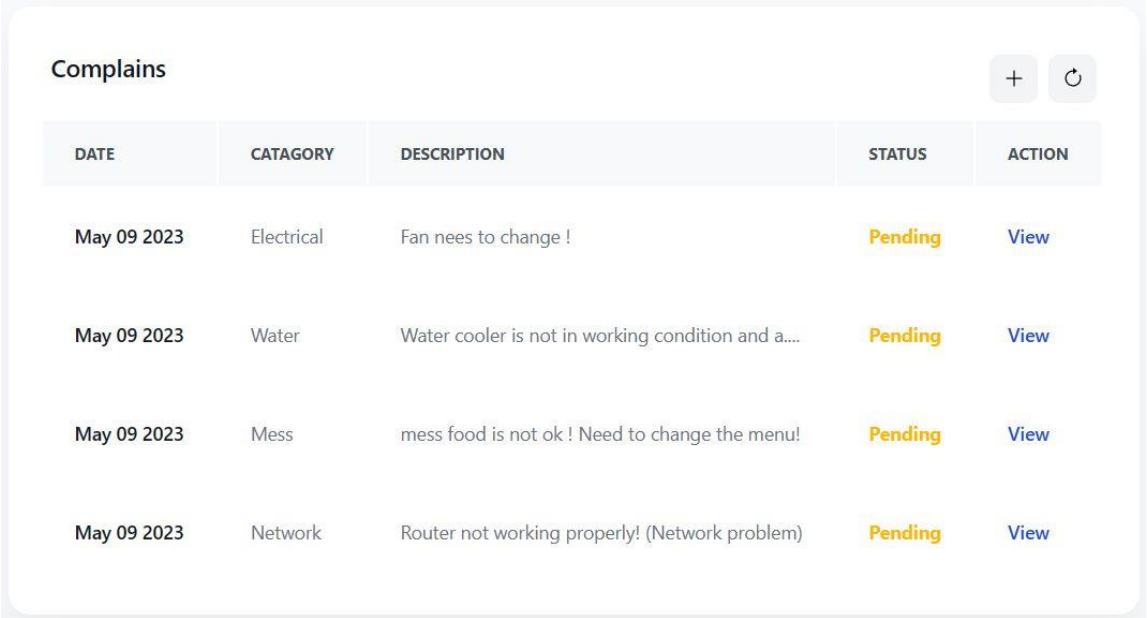
5. Complaint Management System: The system will have a complaint management module that allows students to file complaints about various issues. And can track their resolution status.



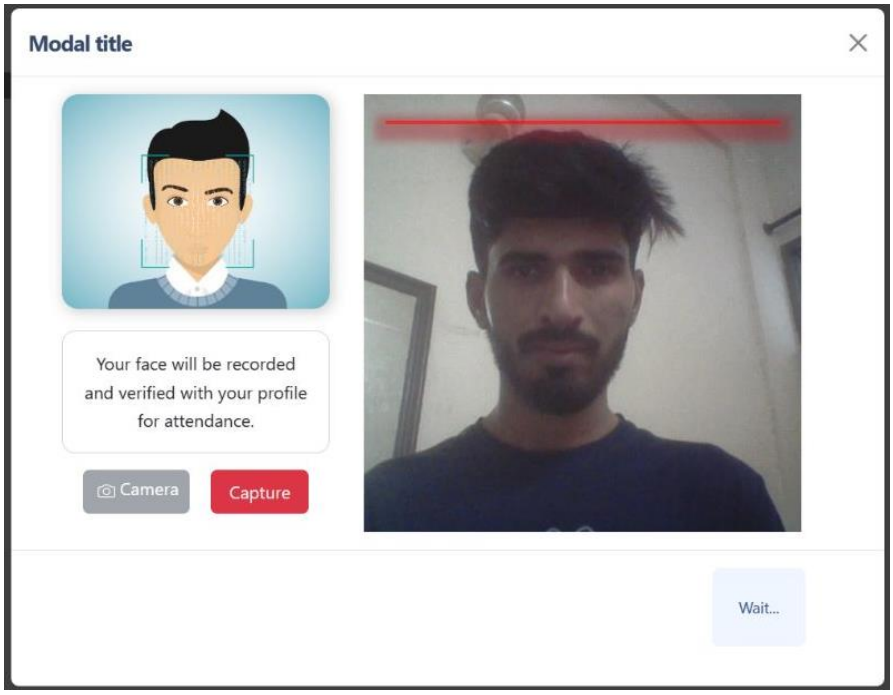
The complaint can be submitted as:



Students can also track their complaints status in history section:

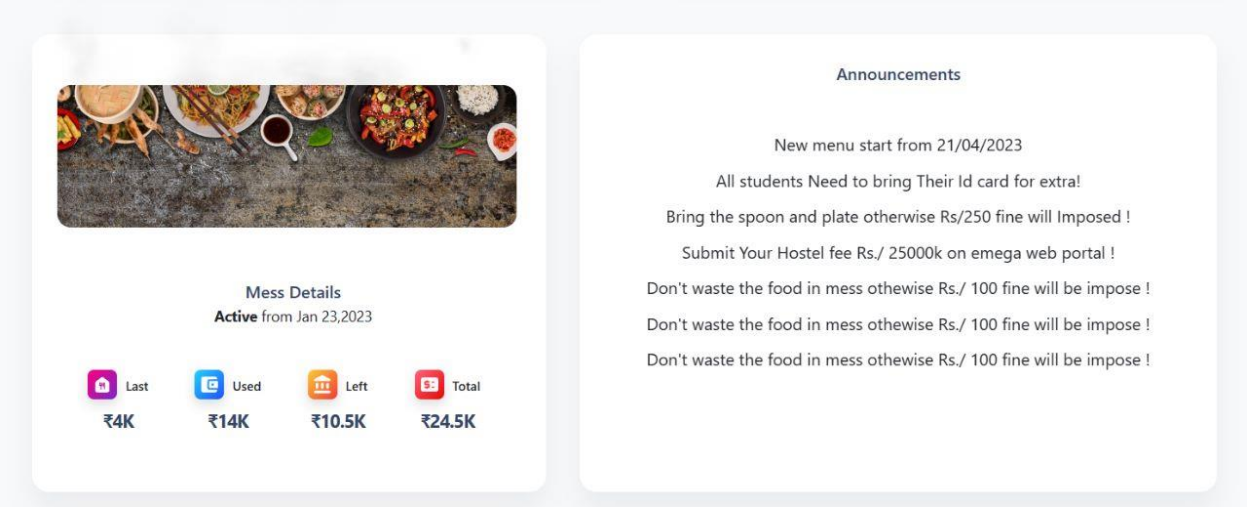


6. E-Attendance System: The system will have an e-attendance module that will allow hostel staff to keep track of student attendance. Students will be able to mark their attendance using the website.



7. Announcements: The e-Mega solution includes an announcements system that will allow the hostel management to post important notices and updates for the students. The system will ensure that students are informed about important events, holidays, and other relevant information.

8. Mess Announcements System: The proposed solution also includes a mess section that will allow students to track their charges and get latest announcements.



Technical Analysis

3.1 UML Diagrams

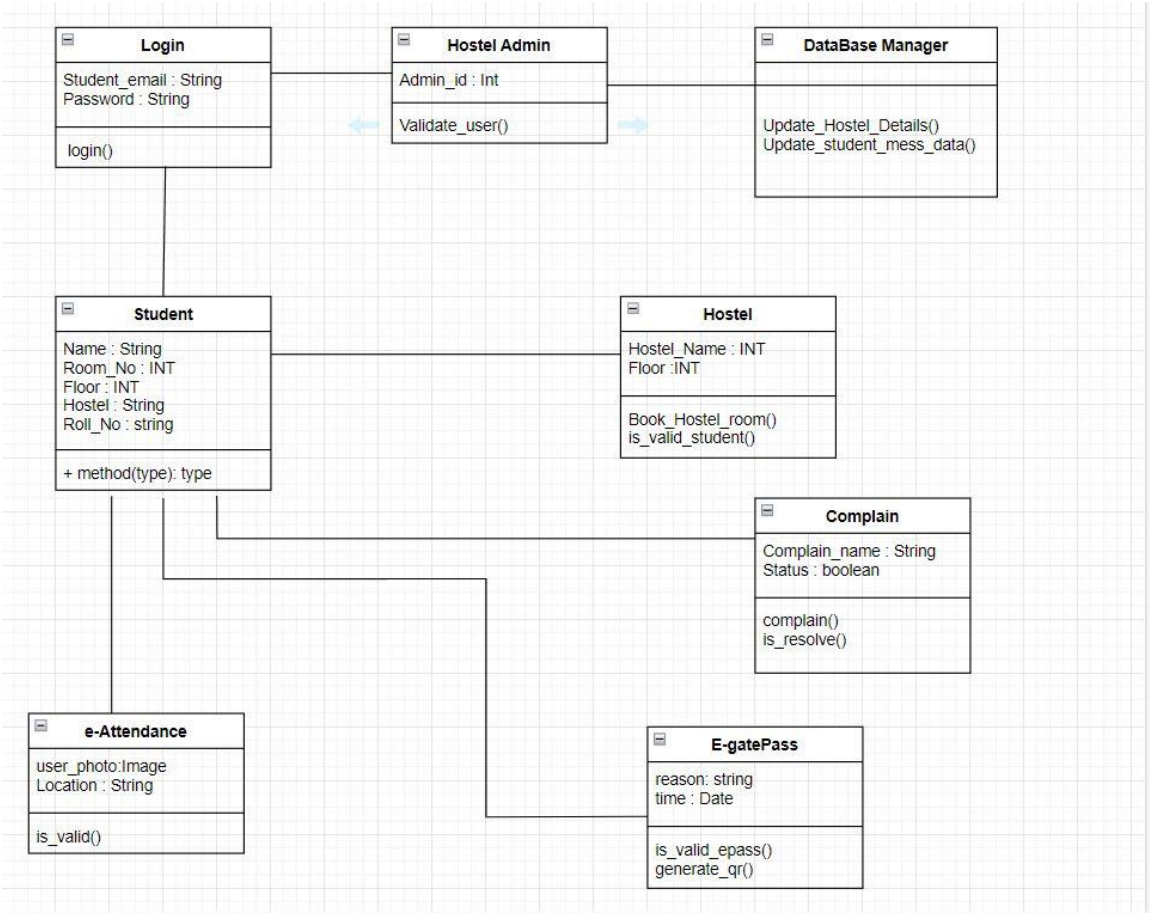
UML diagrams are essential tools in the software development lifecycle that aid in modelling objects and interactions within a system. Our project also utilizes these diagrams to depict the various messages passed between different phases of the system.

Here are some key points regarding the significance of UML diagrams in our project:

- Modelling the objects and their interactions to ensure a clear understanding of the system.
- Creating a logical representation of the application's various mechanisms.
- Depicting the message passing between objects and roles in the collaborative domain.
- Modelling alternate use cases or functions that involve collaborating objects and their operations.
- Facilitating the identification of objects and their parameters to enable efficient communication of messages.

1. Class diagram: A class diagram is a type of UML (Unified Modelling Language) diagram that shows the structure of a system by illustrating the classes, their attributes, methods, and relationships between objects. It is a static representation of the system's classes and the associations between them. Class diagrams are used to analyse, design, and document object-oriented systems. They help in understanding the functionality and architecture of the system and are an important part of the software development.

The class diagram of an e-hostel management system shows the various classes or entities involved in the system and their relationships. The main classes include Login, Student, Hostel Admin, Hostel Manager, Hostel, Complaint, e-gatePass, and e-Attendance. These classes have attributes and methods that define their behaviour and interactions with other classes.

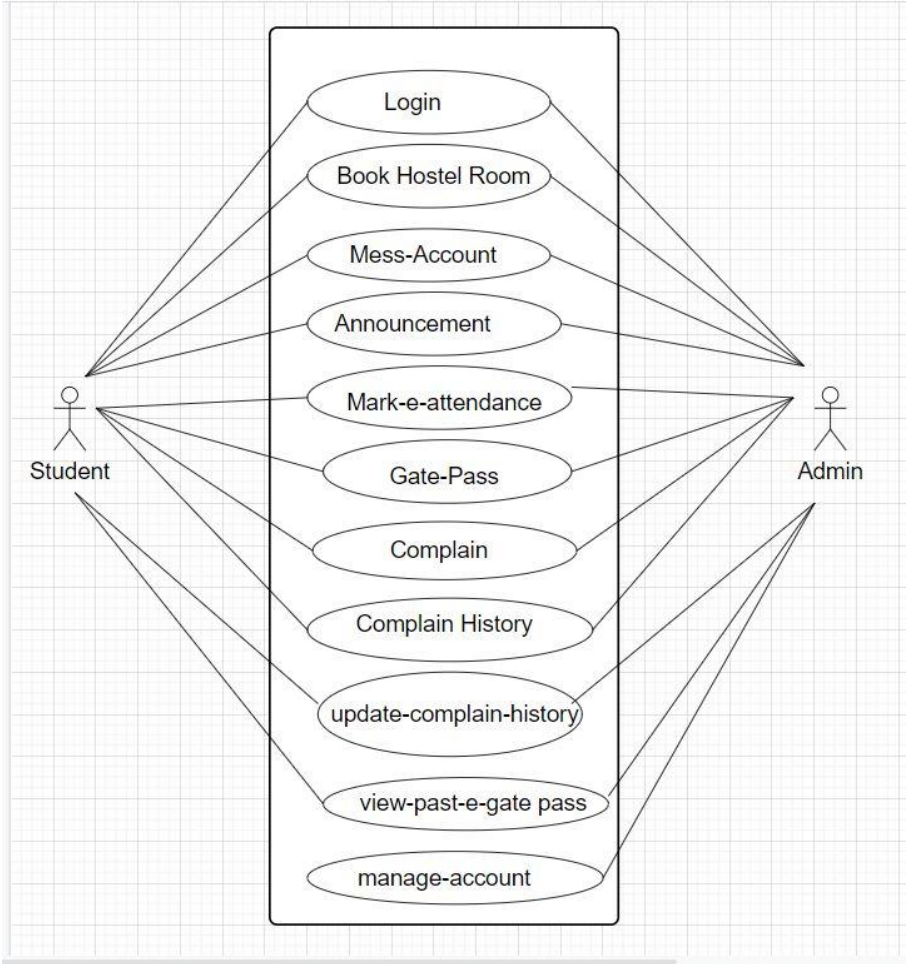


Description: The Login class has attributes such as Student_email and Password. It has method for login. The Student class has attributes such as Name, Room_No, Floor, Hostel, and Roll_No. It also has methods for viewing hostel details, submitting complaints, giving feedback, and viewing attendance. The Hostel_Admin class has attribute Admin_id and method validate_user. So Students can login with their credentials, and Admin will validate them. The DataBase Manager class has methods like Update_Hostel_Details and Update_Student_mess_data. The role of database manager is to update the database to the latest version. The Hostel class have attributes Hostel_name and floor, and methods Book_Hostel_room and is_vaid_student, the hostel class is associated with the Student class, so students can book the rooms, and will be verified for the same. The Complain class provides a platform for students to file their complaints. The e-Attendance class is responsible for managing the attendance of students in the hostel. It keeps track of the attendance record of each student. The E-gatepass class is responsible for generating and

managing electronic gate passes for hostelers. It contains the attributes like: reason, time, etc and has methods such as: is_valid_epass and generate_qr.

Overall, the class diagram provides a visual representation of the structure and behaviour of the e-hostel management system, helping developers to understand and design the system efficiently.

2. <u>Use case diagram</u>: A use case diagram is a graphical representation of the interactions between users and a system. It depicts the functionality of a system from a user's perspective and focuses on what a system does without specifying how it does it. Use case diagrams are an essential component of the Unified Modelling Language (UML) and are widely used in software development to ensure that a system meets the requirements of its users.



Description:

Name: E-Mega (Hostel management website)

Actors: Administrator, Student.

Pre-condition: Users must remember their right credential details.

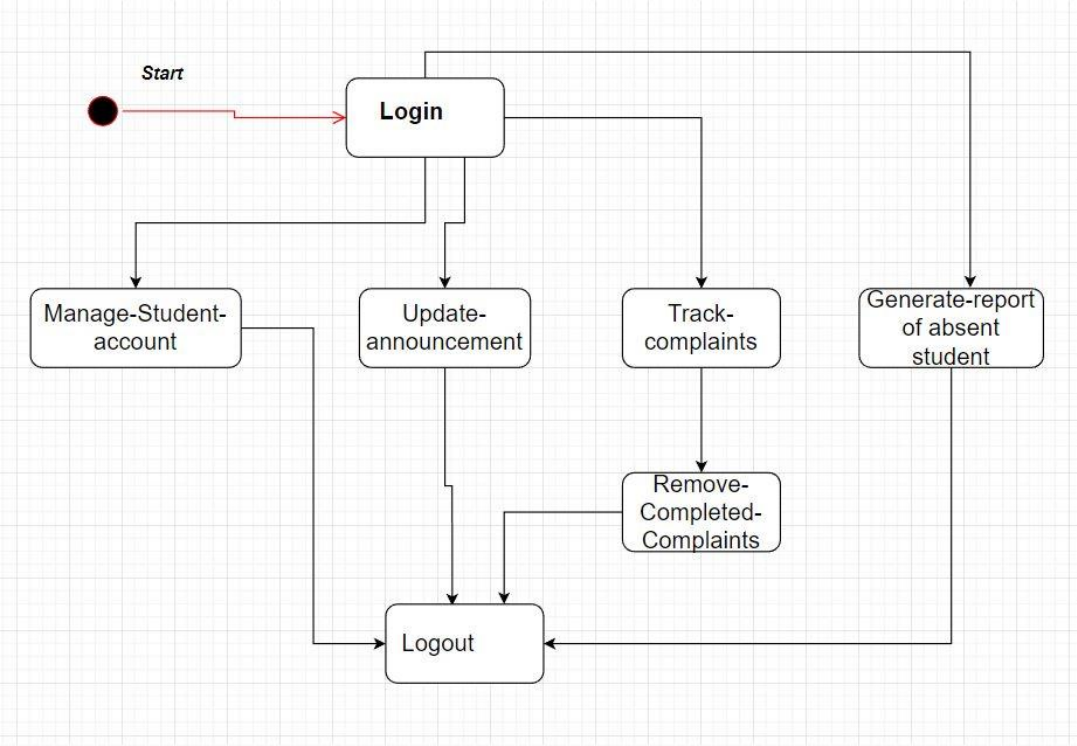
Goals: A Use Case Diagram is a visual representation that illustrates how different stakeholders use the application. Actors are represented by stick models, and they are linked to the different functions provided by the application. This diagram is a fundamental level of software development model that is easy to comprehend and depict. The use case diagram shows the interaction between the actors and the system, and it helps to understand the functionalities of the system from a high-level perspective.

Summary: Students can have various functions such as: Login, room booking, mess account, announcements, mark attendance, get e-gate pass, filing complaints, checking complaints history, view past gate passes.

Similarly, Admin can login, verify students' credentials, update various information including announcements, mess info, or manage complaints and manage the accounts and many more.

Post condition: Users should logout from the website.

3. <u>Activity diagram</u>: An activity diagram is a type of UML diagram that depicts the flow of activities in a system or business process. It shows the sequence of activities and actions that are performed in a specific process. Activity diagrams can be used to model complex workflows, business processes, and software systems. They can be thought of as a visual representation of a flowchart, and are often used during the design phase of software development to help developers understand the sequence of steps required to complete a task or process.



Description:

The activity diagram for e-hostel management system includes the following nodes:

Login: This node represents the process of logging into the system using valid credentials.

Manage student account: This node represents the activities related to managing student accounts, such as creating new accounts, updating account information, and deleting accounts.

Update announcements: This node represents the process of adding or updating announcements that are displayed on the dashboard.

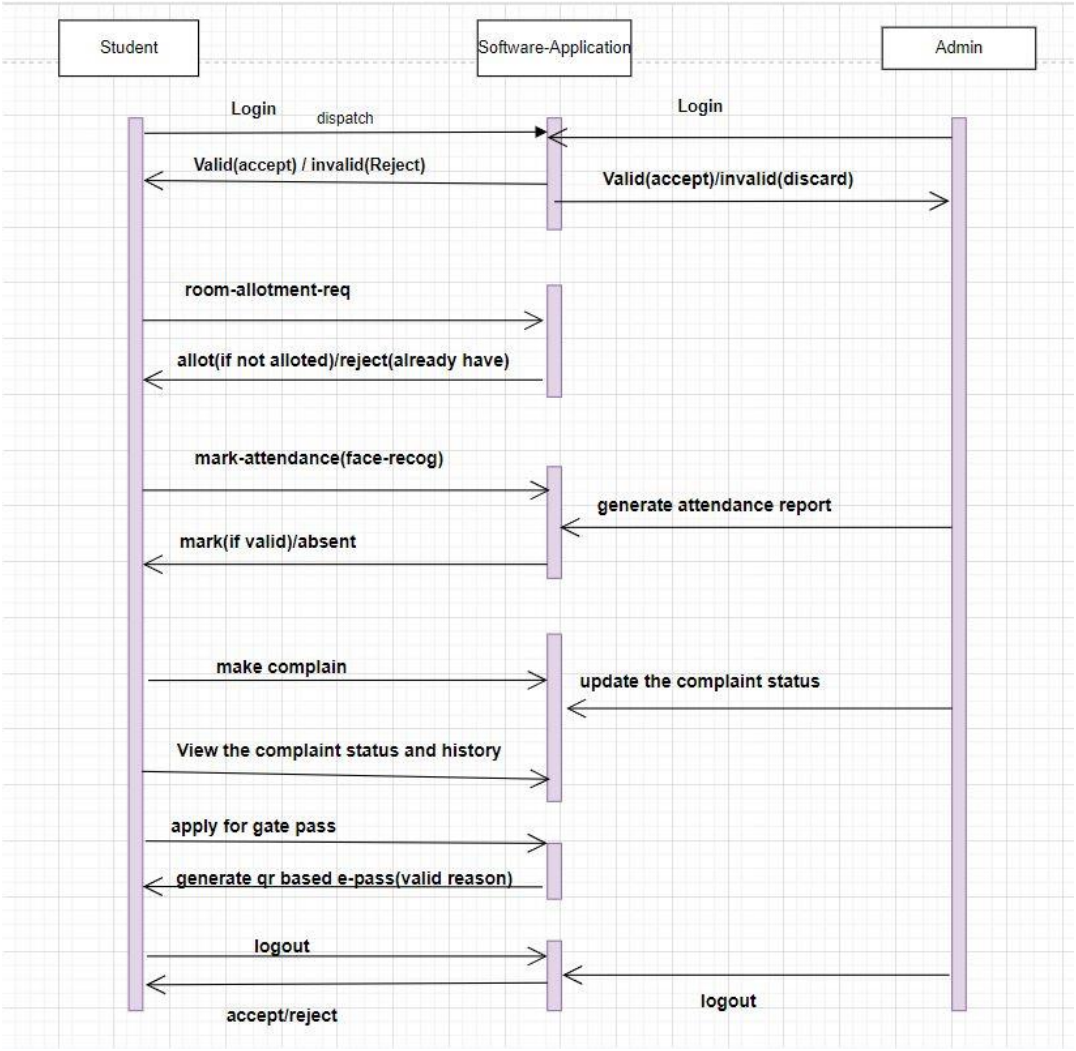
Track complaints: This node represents the activities involved in tracking complaints made by students, such as reviewing and assigning complaints to the concerned authorities.

Generate report of absent students: This node represents the process of generating reports of absent students on a daily, weekly, or monthly basis.

Remove completed complaints: This node represents the process of removing complaints that have been resolved or completed.

Logout: This node represents the process of logging out of the system.

4. <u>Sequence diagram</u>: A sequence diagram is a type of interaction diagram in UML that depicts the interactions between objects or components of a system in a specific sequence or order. It shows how objects interact with each other to complete a particular task or process, with each interaction represented as a message exchange between the objects. Sequence diagrams help in visualizing the flow of control between objects and identifying any potential issues or problems in the system. They are commonly used in the design phase of software development to model the dynamic behaviour of a system and can also be used for testing and debugging purposes.



Description: A sequence diagram in the context of e-hostel management system represents the sequence of actions or messages exchanged between objects within the system. It helps in visualizing how different components of the system interact with each other to accomplish a specific task.

3.2 Tech Stack Analysis

It involves the selecting and evaluating the Technology for the project or applications. It is the combination of various programming languages, framework, libraries databases and others Technology to build the software.

The Selection of Technology is the most important factor for the success of the project, as well as the its scalability, performance, security, and maintainability. So, it is essential to evaluate the requirement of the project.

All the Technology are selected on the different factors which are discuss below: -

1. **Project Requirements**: - The tech stack selected based on project requirements, type of application developing, functionality requirement and based on performance.
2. **Developer Skills:** - The selected technology should be compatible with the developer team and skilled the whole member so the productivity will increase.
3. **Community Support**: - The strong and the active community will provide the valuable resources.
4. **Security and Scalability**: - The selected technology should have strong security features and it should be easily scalable when the no of users increases for the software.
5. **Cost:** - The cost of the selected technology should be low as possible including license fee, infrastructure fees and maintenance fees.

Because of the mention all the above points we selected Technology which are following: -

1. Database – Mongo DB Atlas

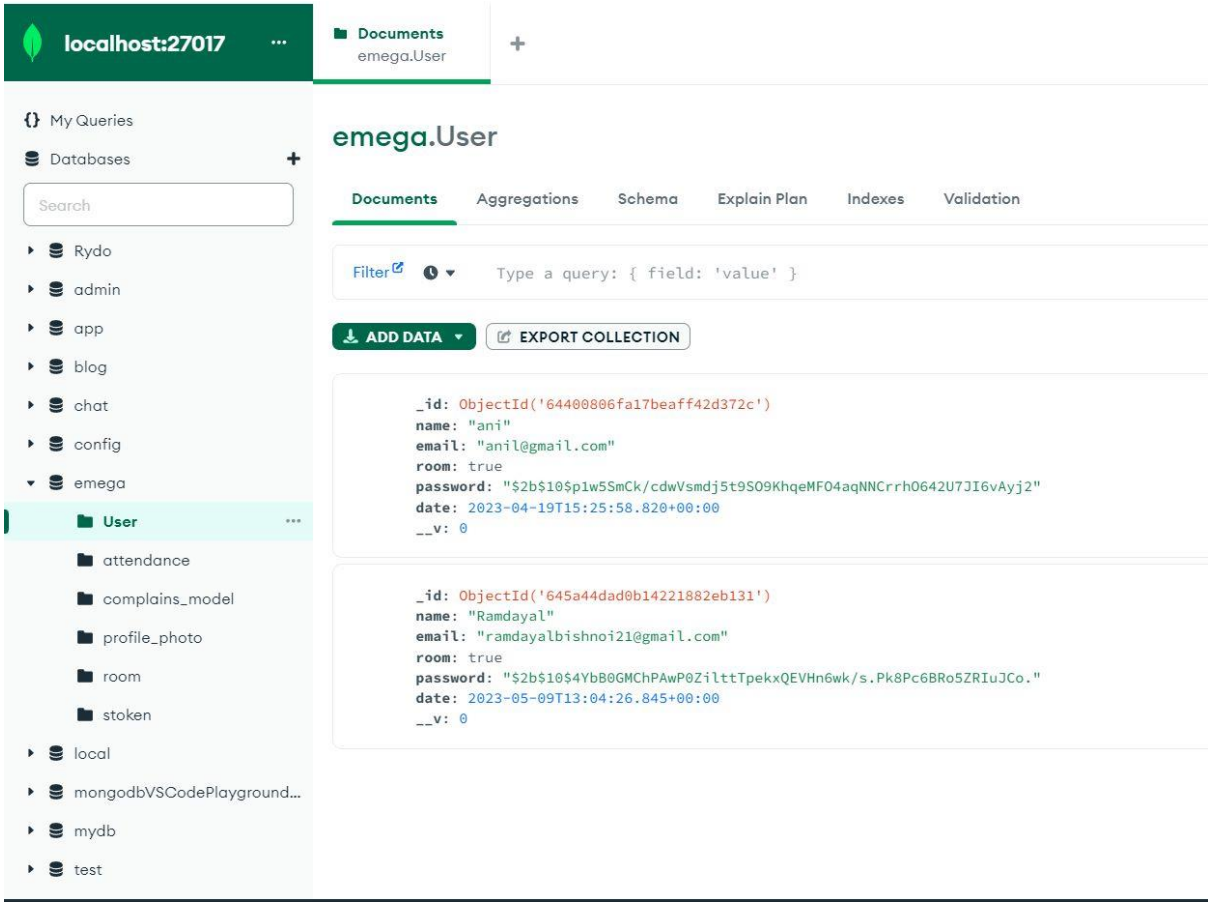
It is a cloud-based database services that provide fully managed mongo dB instances it is the global database services that enables to store and managed the data through entire globe.

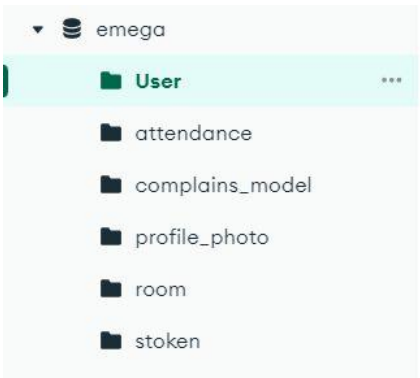
It provides the different services which are the following: -

1. **Fully Managed service**: - It is the fully managed services that handles the infrastructure, maintenance, and upgradation.
2. **Scalability:** - It is the highly scalable. It allows the user to the easily scalable i.e., up, or down the database according to the needs.
3. **Security**: - It provides the several security features including encryption and network isolation.

4. **Global Distributions**: - It allows users to distribute their data across multiple regions for improved performance and availability.
5. **Integration with other different services**: - It integrates with the other cloud-based services like AWS, Azure, and Goggle cloud.

Uses: We use the mongo Db Atlas for the **Real-time database** and for the storage of user Data like user details e.g., email-id, password, room details and other different details.





2. Web Designing- React, CSS, JavaScript, tailwind

React, CSS, JavaScript, and Tailwind CSS all are the popular tools for the designing the website. Each of these tools have the strength and from using all these tools we can create the dynamic and the responsive website.

React: - It is the JavaScript library that is widely used for the building the user interfaces. It allows the users to create the reusable UI components that makes the easy to manages the different components for using the same component at different places we write the code only ones and uses at the all places and this functionality make different from the HTML.

CSS (Cascading Style Sheets): - It is the fundamental tool for the designing the web pages. It allows the developer to the define the visual appearance of the web pages, including the layout, animation, colors and manages the position of the different images.

JavaScript: - It the programming language that is widely used for the web development in both the part front-end as well as the back-end of the website. It is used for the combination of the React and CSS.

Tailwind CSS: - It is the utility-first CSS framework that makes it easy to create custom and responsive powerful design. It provides the predefined CSS class which is directly used by the developer for designing the any component. It can also use for the combination of React and JavaScript for making more responsive design.

3. Back-end Implementation: - Nodejs, Express, Bcrypt

Nodejs, Express and Bcrypt are the popular tools for the implementation of the any website of the back-end systems. Each of these tools and its combinations are used for making the secure and scalable website.

Nodejs: - It is the JavaScript runtime that allows developers to run JavaScript on the server side. It is known for the its high performance and scalability, making it very good choice for the building the back-end systems. It also provides the large and active community of the developers as well as it provides the vast library of modules and packages.

Express: - It is the flexible web application framework for the Node.js. It provides different features for building web applications, including routing, middleware, and templates. It is used for making different api in the website.

Bcrypt: - It is the popular password hashing library for the Nodejs. It provides the secure and the easy-use interface for hashing the password and checking the password validity. It is generally used for the password protection.

After combining these tools, we implement the backend part of the project which is secure and scalable.

4. Machine Learning Module

Python: Python is a popular programming language widely used in Machine Learning (ML) and Artificial Intelligence (AI) applications due to its simplicity, readability, and large number of libraries and frameworks available. It offers a user-friendly and interactive environment, making it easier for beginners to learn and implement ML algorithms.

OpenCV: OpenCV is an open-source computer vision library that provides a comprehensive set of tools for image and video processing, object detection, face recognition, and machine learning. It is widely used in various fields such as robotics, surveillance, and healthcare for developing real-time applications. It is written in C++, but has interfaces for various programming languages such as Python, Java, and MATLAB, making it accessible to a wide range of developers and researchers.

Face_recognition: face_recognition is a Python library that is used for face recognition. It is built on top of the dlib library, which is a popular machine learning library for C++. face_recognition provides a simple interface for developers to detect, recognize, and manipulate faces from Python code. The library is capable of recognizing faces in images and videos and comparing them with a database of known faces. It uses deep learning algorithms to identify facial features and create face embeddings that can be compared to recognize the identity of a person.

NumPy: NumPy is a Python library used for numerical computations. It provides support for large, multi-dimensional arrays and matrices, along with a vast collection of mathematical functions to operate on these arrays. NumPy is an essential library in the scientific computing domain and is widely used for data analysis, machine learning, and scientific research. Its fast-processing capabilities and ability to handle large datasets make it a popular choice for developers working on data-intensive projects.

5. API: - Google Map Api

An API is a set of protocols and tools for building software applications. It specifies how the software components should interact, allowing different software applications to communicate with each other.

Google Map Api: - It is the set of APIs provided by Google that allows developers to integrate Google Maps into their applications. The API provides access to a variety of features including maps, geocoding, routing, and satellite imagery. The geocoding api provides the features from which provides address or places names into the geographics coordinates i.e., latitude and longitude.

6. Tools: - Vscode, git, GitHub

VsCode, git and GitHub are the tools which are used by the developer for the coding, version control, and collaboration.

Vscode: - It is the lightweight, cross-platform code editor that provides the powerful editing features, debugging tools, and extensions for different programming languages. It is the free and open source and provide the modern user interfaces.

Git: - It is the distributed version control system that allows developers to manages their changes in the code over time to time. It provides the set of different commands for the workflows for creating, branching, merging, and sharing code with others. It also provides the history of all changes made to the code, allowing developer the track the issues and can revert the changes.

GitHub: - It the cloud-based platform for the for hosting and collaborating the on-git repositories. It provides the different set of tools for managing issues, pull request and code review as well as the social aspects that allows developer to follow and interact the other developer.

ECONOMIC ANALYSIS

Our goal is to offer an affordable, user-friendly, and fully-equipped solution to address the day-to-day issues of both hostelers and hostel staff.

- Considering the development stacks used in our project, they are all freely available. Therefore, the only requirements to develop the system are internet connectivity and a laptop, which results in zero cost for development.
- For database and storage, we have decided to use MongoDB Atlas, it is a NoSQL database that is designed for handling unstructured data, making it well-suited for applications that require flexible data models and fast data retrieval. It also has built-in support for horizontal scaling and replication, making it easier to handle large amounts of data and high levels of traffic.
- Furthermore, all the APIs and dependencies used in the system are also free and readily available. Thus, there is no cost associated with these elements, and all that is needed is support and a willingness to adapt to any necessary changes.
- The e-hostel management system can help in reducing the cost of manual processes such as paper-based attendance and complaint filing. This can result in cost savings for the hostel.

The system should be designed to be user-friendly and easily accessible to ensure maximum utilization, which can result in cost savings.

RESULT AND DISCUSSION

4.1 Website usage Instructions

Here are some instructions for using the e-hostel management website:

- ✓ **Visit the website:** Enter the website URL in the address bar of your web browser and press Enter to visit the website.
- ✓ **Login:** Once you are on the homepage of the website, you will see a login option. Enter your login credentials (username and password) and click on the login button to access your dashboard.
- ✓ **Dashboard:** Once you are logged in, you will be redirected to your dashboard. Here, you can access various features like room booking, complaint filing, attendance tracking, etc.
- ✓ **Room booking:** To book a room, select your preferred room and floor and click on the book button. You will receive a confirmation message once your booking is successful.
- ✓ **Complaint filing:** To file a complaint, click on the complaint filing option in the dashboard. Enter your complaint details and submit it. Your complaint will be registered, and the concerned authorities will address it.
- ✓ **Attendance marking:** To mark your attendance, click on the attendance option in the dashboard. Here, you can view camera option, then capture your image, based on the accuracy your attendance will be marked.
- ✓ **Logout:** Once you are done using the website, click on the logout option to securely log out of your account.

These are some basic instructions for using the e-hostel management website. However, there may be additional features and functionalities, depending on the specific website.

4.2 Risk Analysis

Developing any project involves certain risks which make it worth doing. In the case of our project, there are several potential risks that need to be identified and addressed:

1. Technical Risks: There could be some technical risks associated with the development of the system, such as software incompatibilities, data corruption, or system crashes. Our project relies on certain built-in libraries such as Material UI for front-end development, which may require future upgrades and may not be supported. Therefore, it is necessary to utilize updated versions appropriately. Additionally, our machine learning model is currently in the training phase, so it may initially produce undesired results. We anticipate encountering other potential challenges as well.

2. Security Risks: As the system will handle sensitive data like personal information, financial data, and hostel records, there is a potential risk of a security breach. A breach could cause loss of data, identity theft, and even financial loss.

3. User Acceptance Risks: The system may not be accepted by the users, or there may be resistance to change. It could be due to unfamiliarity with the system, the interface, or a lack of trust in the technology.

4.3 Deployment and Testing Status

The website has been deployed on a local host for testing purposes.

During testing, the website worked smoothly.

The compatibility of the website was checked on different local host port numbers such as 8000, 5000, 3000, and 8500.

The accessibility of the website was also checked during testing.

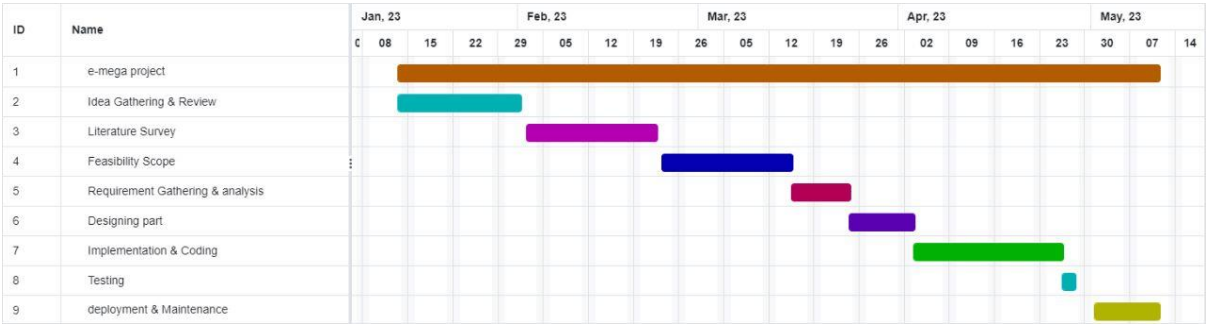
A GitHub repository was created for the complete source code of the e-mega website.

The source code was uploaded to the GitHub platform.

All parameters and functionality of the website were tested thoroughly.

The testing ensured that the website is functioning as intended and is ready for deployment to a live server.

The Gantt Chart for our project is shown below:



SOCIAL AND ENVIRONMENT IMPACT

The e-hostel management system has several potential social and environmental impacts, both positive and negative.

- One positive social impact is that it can improve the overall experience of hostel residents by making the booking process easier and more efficient. It can also improve security by keeping a digital record of attendance and gate passes, reducing the risk of fraudulent entries. Additionally, it can improve communication between hostel administration and residents through the announcement and complaint filing features, leading to better collaboration and problem-solving.
- On the other hand, the implementation of this system may also have negative social impacts, such as the potential for job displacement of staff responsible for manual record-keeping and attendance monitoring. Moreover, the dependence on technology for essential hostel services could lead to technological exclusion of individuals who are not comfortable or familiar with using digital platforms.
- In terms of environmental impacts, the e-hostel management system can potentially reduce paper waste as the system stores digital records of attendance and complaints. However, it can also contribute to electronic waste if the hardware used for the system is not disposed of properly. Overall, it is essential to consider the social and environmental impacts of implementing any technological solution and take steps to mitigate negative impacts while maximizing positive ones.

CONCLUSION

In conclusion, the development of the e-Hostel Management System is a significant step towards the automation of hostel management processes. The system provides an efficient way to manage and monitor hostel facilities and services, thereby improving the quality of life for hostel residents. With the system in place, students can easily access and avail hostel services, file complaints, and communicate with the hostel management.

Moreover, the system has the potential to improve the overall management and administration of hostels, resulting in better resource allocation and cost-effectiveness.

Despite the challenges and risks involved, the project has been successful in achieving its objectives and delivering a functional system. The project team has overcome technical and logistical challenges and has successfully implemented the system.

Overall, the e-Hostel Management is a significant improvement over the traditional paper-based system, and it has the potential to transform the way hostels are managed. It provides a modern and user-friendly approach to hostel management that enhances the quality of life for students while also improving the efficiency and effectiveness of hostel administration.

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Thank. We appreciate any suggestions you may have.

---End of Report---