Project Name: Hall Management System.

Objectives:

- Streamline room allocation process to ensure fairness and transparency.
- Enable secure online payment and tracking of hall fees.
- Implement an efficient and secure token system for various purposes.
- Provide a platform for residents to submit and track complaints or service requests.
- Maintain a centralized notice board for important announcements and updates.
- Design an intuitive and user-friendly interface for residents and administrators.
- Implement robust security measures to protect user data and privacy.
- Ensure scalability to accommodate potential growth in users and data volume.
- Establish a feedback mechanism for continuous improvement.
- Offer comprehensive training materials and support for users and administrators.

Overall, the primary objective of a Hall Management System is to enhance the efficiency, security, and convenience of managing student accommodation while ensuring a positive and safe environment for residents.

Implementation Details:

Here are the potential pages that are included in our MERN-based Hall Management Website:

Home Page:

On our Home page, at first, we notice a Navbar where various page name is shown. After that, we can see a marque announcement bar where various notices are shown. Then we can see a slide bar where our Shahid Tarek Huda Hall's images are shown. After that, there is an about section where Hall's details and the Provost's message are shown. Then we can see the achievement sections. Various achievements are shown in that section. Then we can see the notices regarding our Hall. After that, we see the contact sections where various contact details are provided for helping the students. At last, we can see the Footer.
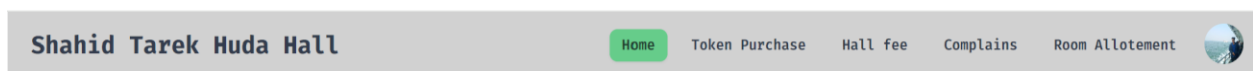

Figure 1: Navbar

Figure 2:Marquee Bar

Figure 3: Image Bar

Figure 4: About Section

Figure 5: Achievements Section

Notice

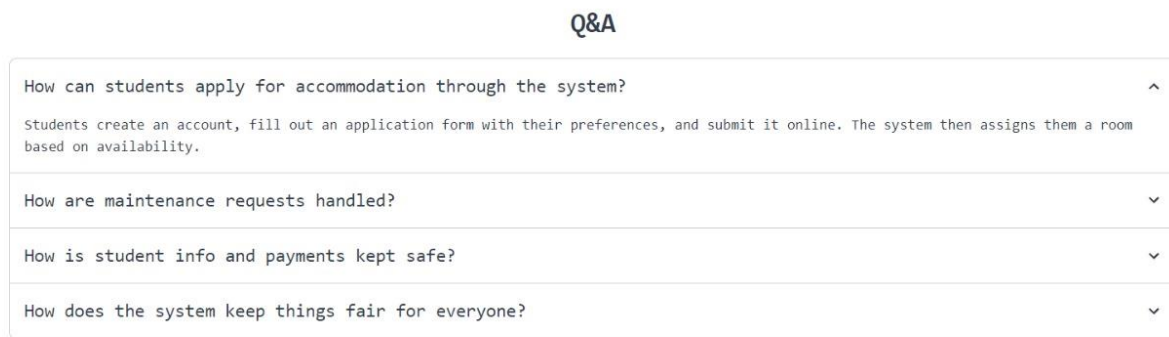| No	Announcements
1	ajke amra duality part 2 dekhbo
2	ager ta hy nai abr dekhbo duality 2
3	abr abr dekhte hobe duality 3
4	academi porasona dekhte hobe cse
5	twp_poster_quantum_computing
6	Operation research application algorithm
7	routine
8	Hall annual function

Figure 6: Notice Section

Figure 7: Contact Us Section

Figure 8: Q&A Section
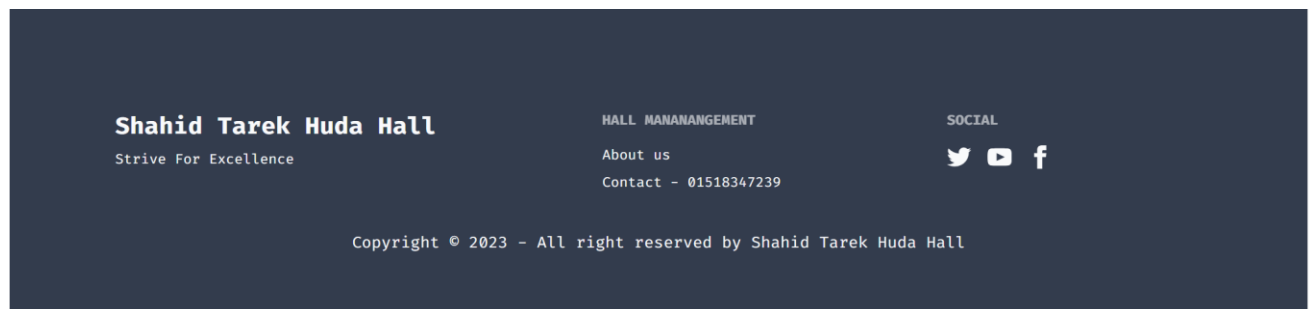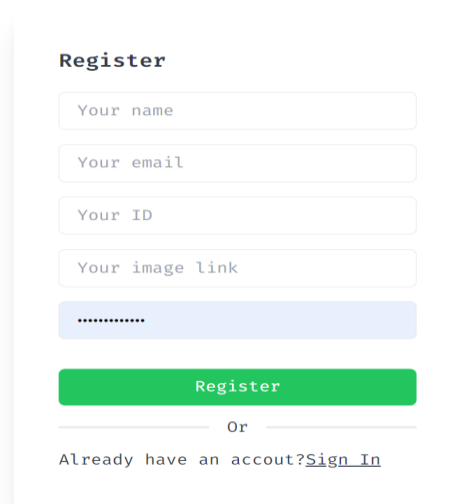
Figure 9: Footer

Register Page:

Here Students provide their info for example Name, Student ID, Email, Image, and Password. All this data is saved in the MongoDB database as well as Firebase. Here Firebase is used only for authentication purposes.
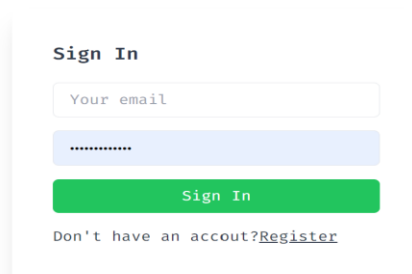
Figure 10: Register Page

Sign In Page:

Student need to provide their Email address and Password for Sign In. Here Firebase is used for authentication.
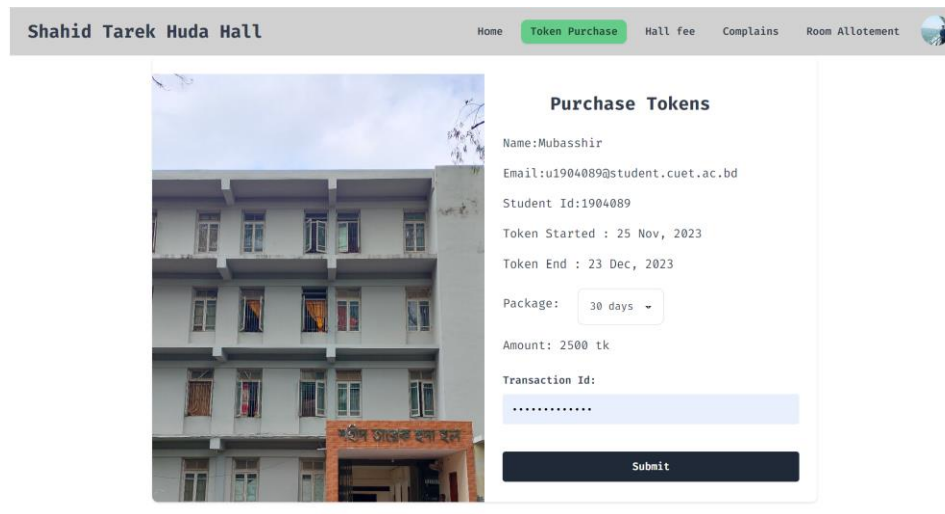
Figure 11: Sign In page

Token Purchase Page:

Here Students can Purchase their token by providing the required information. First, they need to Sign In. Then their Name, Student ID, and Email are automatically fetched from the database. The token's start date and ending date are shown. Student needs to select their package and the amount is shown according to their selected package. After completing the payment students should

provide the Transaction ID and submit their information. Within 24 hours confirmation Email should be sent.

Figure 12: Token Purchase Page.

Hall Fee Page:

Here student can easily pay their hall fees by providing the required information. First, they need to Sign In. Then their Name, Student ID, and Email are automatically fetched from the database. Then students need to select the months and after completing payments they need to provide the Transaction ID. Within 24 hours confirmation mail will be sent to their mail.
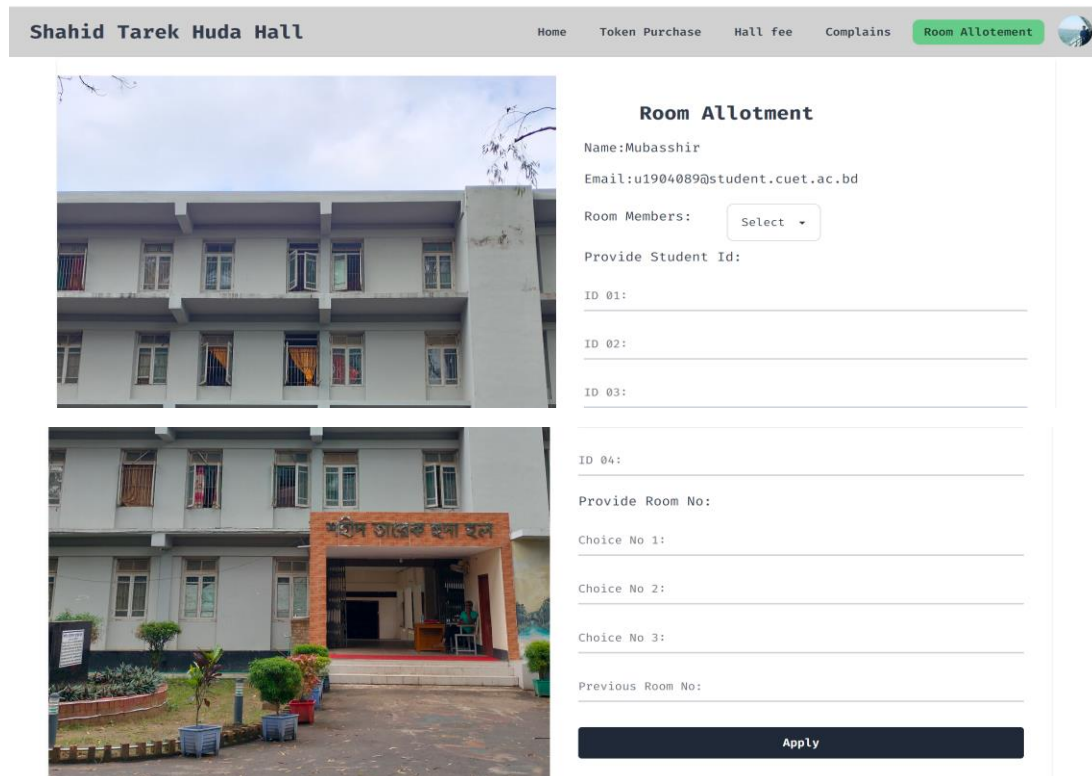
Figure 13: Hall Fee Page

Room Allotment Page:

Here Student can apply for their interested rooms. First, they need to Sign In. Then their Name and Email are automatically fetched from the database. Then students need to select the number of room members and provide their Student ID. Then they need to provide the interested room numbers and previous room numbers. After that, they need to click the Apply button. The Hall authority will inform the result through Notice and Email.

Figure 14: Room Allotment Page

Complains Page:

First students need to Sign In and then they need to type their complain regarding hall and submit it. Within 24 hours action will be taken. Here, They can call also call and send their mail to the hall authority.

Figure 14: Complains Page

Admin Page:

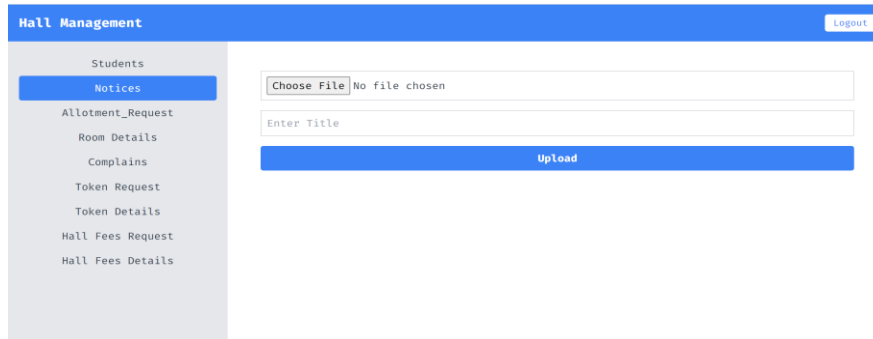Here all types of data are stored. There are many Sub-sections for example students, Notices, Allotment Requests, Room Details, Complains, Token Requests, Token Details, Hall fees Requests, and Hall Fees Details.

Students: Here, All student's data is stored. Every Student's Name, Student ID, Email, Allotted room, Hall Fee Status, and Token Status are Shown. The allotted room is fetched from the allotment request and Hall fees status is fetched from the Hall Fees Request and the Token status is fetched from the Token request.

Figure 15: Students Portal

Notice:

Here Admin can Upload the Notice.
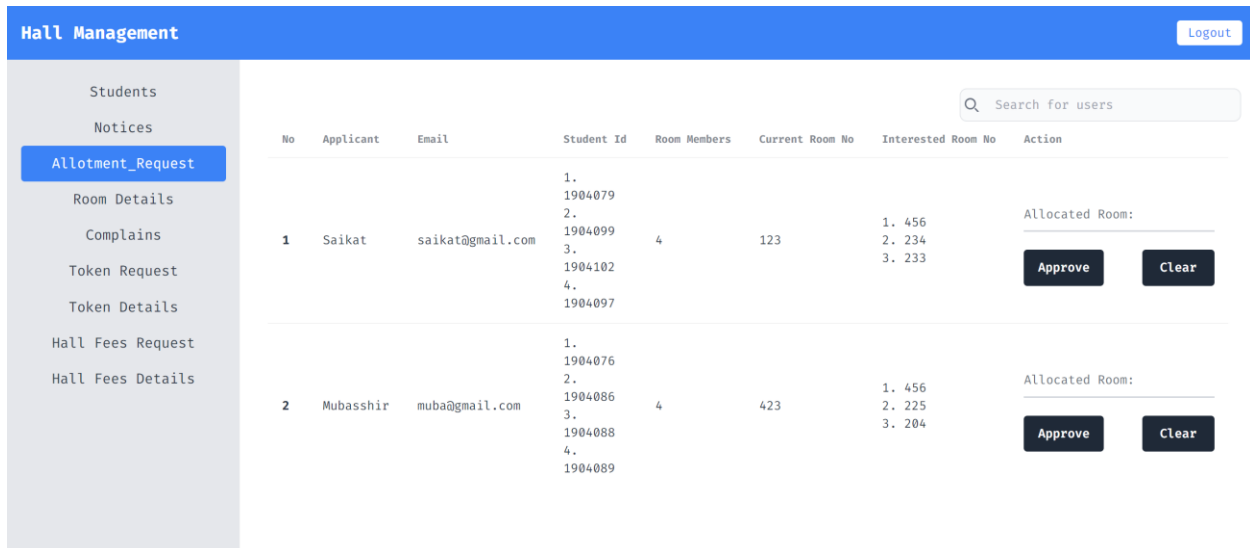

Figure 16: Notice Portal

Allotment Request and Room Details:

Here, all Allotment Request is stored. Admin verifies the data and then admin can provide the vacant room number and confirmation mail will be sent automatically to the students. After that, the Final data will be stored in the Room Details Section.

Figure 17: Allotment Request

Figure 18: Room Details

Token Request And Token Details:

Here, all Token Request is stored. Admin verifies the data and then admin can approve or deny the request and mail will be sent automatically to the students. After that, the Final data will be stored in the Token Details Section.

Figure 19: Token Request Portal.

Figure 20:Token Details Portal

Hall Fees Request And Hall Fees Details:

Here, all Hall Fees Request is stored. Admin verifies the data and then admin can approve or deny the request and mail will be sent automatically to the students. After that, the Final data will be stored in the Hall Fees Details Section.

Figure 21: Hall Fees Request

Figure 22: Hall Fees Details
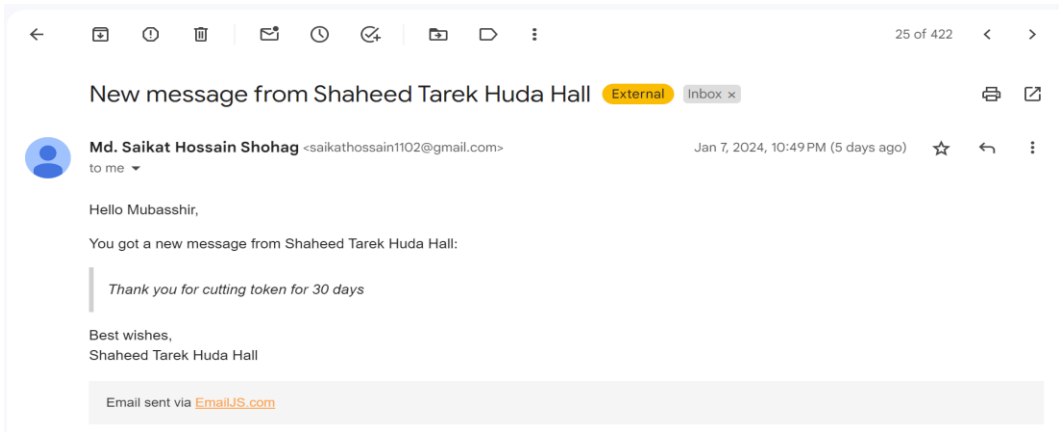
Figure 23: Sample of Confirmation Email

Complains: All types to complains are stored here.

Figure 24: Complains

Conclusion:

Hall Management System is a technology-driven solution that enhances the management of student accommodations. It provides a user-friendly platform for room allocation, fee collection, token management, complaints, and security, ultimately improving the overall experience for residents. By automating administrative tasks and promoting efficiency, it simplifies operations for hall staff while ensuring the safety and satisfaction of students.