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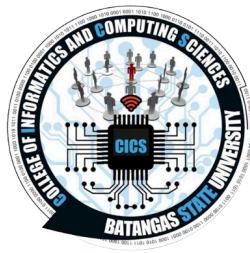
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Dormio: A Comprehensive Dorm Management System Featuring QR Code-Based Presence Monitoring

A Research Study Presented to the

College of Informatics and Computing Sciences

Batangas State University - Lipa

In Partial Fulfillment of the Requirements for the Course

IT 312 - System Integration and Architecture

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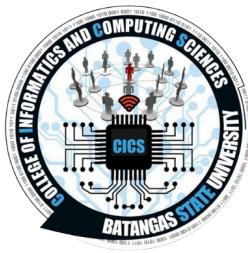
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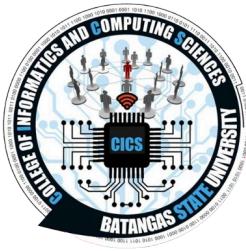
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I. Title

- **Dormio: A Comprehensive Dorm Management System Featuring QR Code-Based Presence Monitoring**

II. Outcomes and Goals

A. Objective

- To create an intuitive system that simplifies dorm operations lessens administrative burden, and boosts staff and administrator productivity.
- To improve the quality of life for residents by giving them the freedom to oversee their dorm-related activities and conveniently obtain vital information autonomously.
- To give staff members instant access to real-time data for visitor logs, and presence logs, to quickly resolve any issues and maintain a safer atmosphere.
- To provide a simplified platform for efficient engagement and cooperation to enhance communication amongst residents, staff, and administrators.
- To protect residents' personal information by establishing secure login and access control, thereby ensuring data security and privacy.

B. Intended Learning Outcome (ILO)

- **ILO 1:** Create a robust dormitory management system. The researchers will develop and implement a web-based application solution that streamlines the management of room allocations, presence records, visitor tracking, and rent payment management for the dormitory staff and the residents. This will be achieved by applying web development technologies, including HTML, CSS, Bootstrap, JavaScript, PHP, and SQL.
- **ILO 2:** Incorporate communication functionalities into the application. The researchers will develop effective communication tools, such as a messaging system and announcement platform, to enhance the relationship among residents and staff.
- **ILO 3:** Evaluate the application's performance and user experience



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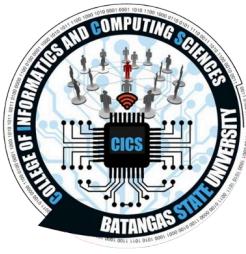
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through robust testing methodologies. This will involve the researchers' usability assessments, which will help identify areas of the user interface and overall functionality that need improvement. They will implement iterative improvements based on user feedback, ensuring a favorable experience for all participants.

C. Sustainable Development Goal (SDG)

- SDG 9: Industry, Innovation, and Infrastructure
 - Dormio is a system developed to improve the efficiency of the current dormitory management, from check-in/check-out systems to visitor management and presence monitoring. This promotes the development of resilient infrastructure and innovation in managing residential facilities such as a dormitory.

III. Background

Many dormitories still rely on traditional management methods that involve manual processes and paper-based systems. These practices can lead to significant challenges, such as inefficiencies in room management, miscommunication, inaccuracies, and lack of real-time data access for both management and residents of the dormitory. Residents encounter challenges in tracking their rent payment history, filling up a logbook to record visitor details, lack of presence monitoring, and using different platforms to communicate with the staff. These processes are inconvenient and data is prone to be lost or damaged, suggesting the need for an integrated dormitory management system.

The researchers aim to resolve these problems by developing and implementing Dormio, a web-based application to streamline dormitory management processes. It will allow residents to manage their living arrangements, including room assignments, QR code based presence tracking,



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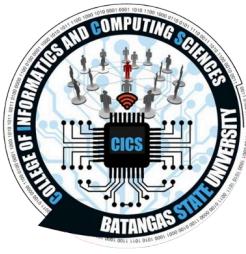
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visitor management, and rent payment management. By incorporating these features and a user-friendly interface, the system enables residents to actively engage with each other, and the staff, ensuring their needs are promptly and efficiently addressed.

Dormio will provide an organized approach to dormitory management, helping administrators optimize space utilization, improve communication and security. By streamlining processes and offering a centralized platform for information sharing, the dormitory management system can enhance overall operational efficiency and elevate the resident experience. The implementation of this system will prioritize the needs of both residents and management, creating an environment that promotes well-being and satisfaction, moving beyond traditional management practices.

IV. Systems Model/ Design

A. Context Diagram

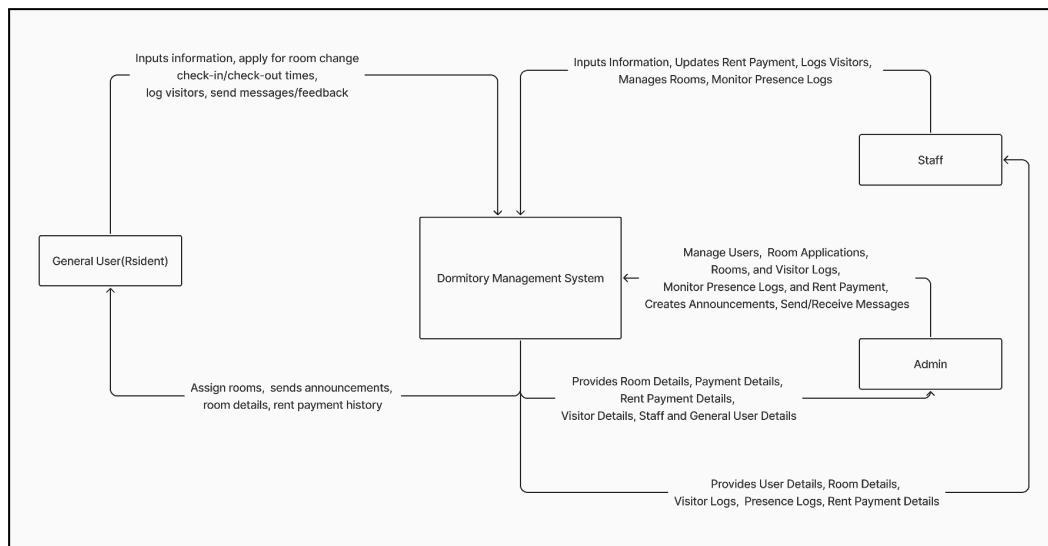


Figure 1 Data Flow Diagram Level 0



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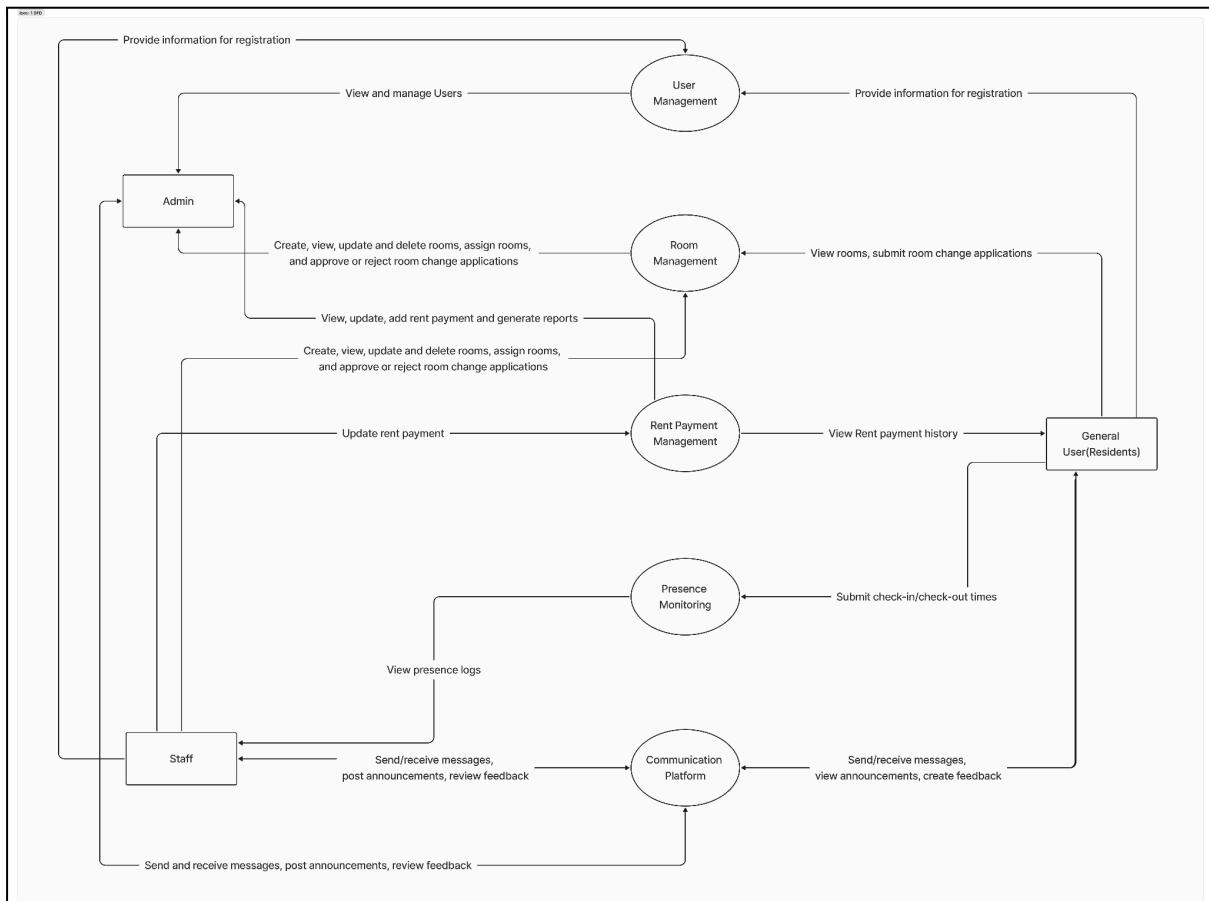


Figure 2 Data Flow Diagram Level 1

B. Data Flow Diagram (DFD)

● **External Entities:**

- Dormitory Admin (Admin)
- Dormitory Staff (Staff)
- Residents (General Users)

● **Process:**

- Dormio System

● **Data Stores:**



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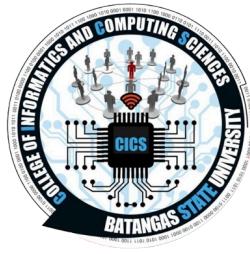
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- User Accounts - CREATE, READ, UPDATE
- Announcements - CREATE, READ, UPDATE, DELETE
- Room Feedback - CREATE, READ, UPDATE, DELETE
- Room List - CREATE, READ, UPDATE, DELETE
- Room Assignment - READ, UPDATE, DELETE
- Room Reassignment Requests - CREATE, READ, UPDATE
- Move-out Requests - CREATE, READ, UPDATE, DELETE
- Visitor Log - CREATE, READ, UPDATE, DELETE
- Presence Monitoring - CREATE, READ, UPDATE
- Group Chat - CREATE, READ, UPDATE, DELETE
- Rent Payment Monitoring - CREATE, READ, UPDATE, DELETE
- Activity Logs - CREATE, READ

● Data Flows:

- **Admin:** Login, Manage User Accounts, Manage Room Applications, Manage Room List, Room Assignments, Manage Reassignment Requests, Manage Move-out Requests, Monitor Presence Logs, Manage Visitor Logs, Message, Manage Rent Payment, Post Announcements, Generate Reports, View Activity Logs, Logout.
- **Staff:** Login, Manage Announcements, Manage Room Feedback, Manage Room List, Manage Room Assignments, Manage Room Reassignment Requests, Manage Move-out Requests, Monitor Presence Logs, Manage Visitor Logs, Message, Manage Rent Payment, Logout.
- **Residents(General Users):** Login, View Announcements, View Room List, View Assigned Room, Send Room Feedback, Create Room Reassignment Request, Create



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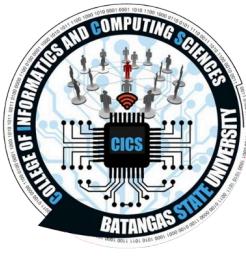
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Move-out Request, Submit Visitor Logs, Check-In/Check-Out,
, Send Messages, View Rent Payment History, Logout.

● Data Flow Diagram (DFD - Level 0)

- **Admin to DMS**
 - Manage Users/ Manage Room Reassignment Requests/ Manage Rooms/ Manage Room Assignments/ Manage Move-out Request/ Message/ Visitor Logs/ Presence Logs/ Manage Rent Payment/ Manages Announcements
- **DMS to Admin**
 - Announcement Details/ Provides Room Details/ Room Feedback Details/ Room Reassignment Request Details/ Room Assignment Details/ Move-out Request Details Messages / Rent Payment Details/ Visitor Details/ Staff and General User Details/ Activity Log Details
- **Staff to DMS**
 - Manages Announcements/ Inputs Information/ Adds and Updates Rent Payment/ Logs Visitors/ Manages Rooms/ Monitor Presence/ Messages
- **DMS to Staff**
 - Announcement Details/ Provides User Details/ Room Details/Visitor Logs/ Presence Logs/ Rent Payment Details/ Message Details
- **General User(Resident) to DMS**
 - Inputs Information/ Requests Room Reassignment/ Sends Move-out Requests/ Logs Check-In/Check-Out Times/ Logs Visitor/ Send Messages
- **DMS to General Users(Residents)**
 - Announcement Details/ Assigns Rooms/ Sends



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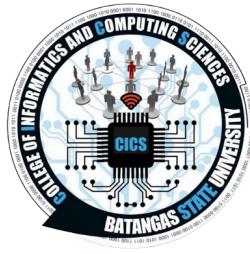
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Announcements/ Provides Room Details/ Rent Payment

History/ Message Details

● Data Flow Diagram (DFD - Level 1):

1. Staff and General User Registration & Login

- Input: Staff and General Users provide registration information or login credentials.
- Process: The system will validate the login credentials or process new user registration, including password recovery options.
- Output: Access to dashboard(depending on user type) or login error message.

2. Announcement

- Input: Admin/ Staff access the announcements to view, create, update, and delete announcements.
- Process: The admin/staff will add new announcements or update existing announcements. The system will store announcement details.
- Output: Updated announcement details, new announcement added, and archived announcement/s. The system will display the announcements that are on ‘display’ to the residents’ and staffs’ dashboard.

3. Manage User

- Input: Admin access the User Management to create, view, update, or deactivate or reactivate accounts.
- Process: The system allows the dormitory admin to manage user accounts and display user information.
- Output: Updated user accounts data.

4. Room List

- Input: Admin/Staff access room list, to view, create,



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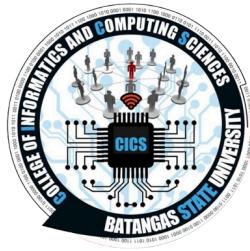
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update or delete rooms and room details.

- Process: The system will display the rooms to residents and allows the admin or staff to update room details.
- Output: Display the details of rooms added, and updated on the room list.

5. Room Assignment

- Input: Admin and Staff assigns or reassigns rooms to residents.
- Process: The system will store updated room assignments and display assigned rooms to residents.
- Output: Display room assignment list and provide room details of their assigned room to residents, updated room assignment list.

6. Room Reassignment Requests

- Input: The resident creates a reassignment request for a room, enter the reason for requesting it and waits for approval from the admin or staff.
- Process: The system stores the request and the admin or staff can approve or reject the request.
- Output: Updated room assignment and room reassignment request list, rejection or approval notification through email will be sent to the resident.

7. Move-out Requests

- Input: The resident creates a move-out request by filling up the move-out date, and the reason.
- Process: The system will store the move-out request and will be reviewed by the staff and the admin.
- Output: Updated move-out request lists, rejection or approval notification will be sent through the resident's



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email.

8. Visitor Log

- Input: General User(resident) and staff, log visitor details, and visitor check-in/check-out.
- Process: The system records visitor entries/exit and updates visitor logs.
- Output: Updated visitor logs, visitor logs report.

9. Presence Monitoring

- Input: Admin and Staff tracks presence logs.
- Process: System generate presence reports based on check-in/check-out data.
- Output: Dormitory's presence report.

10. Check-In/ Check-Out

- Input: Residents download their QR code and log their check-in/check-out times by scanning it.
- Process: System records check-in/check-out times and updates presence logs.
- Output: Updated presence logs.

11. Group Chat

- Input: Residents, dormitory staffs and admin can send update or delete messages on the group chat.
- Process: The system will store the messages sent by the users.
- Output: Updated messages and they can be viewed by anyone logged in in the system.

12. Rent Payment History

- Input: Staff and admin updates payment records and residents view their rent payment history.
- Process: Rent payment details including due amounts,



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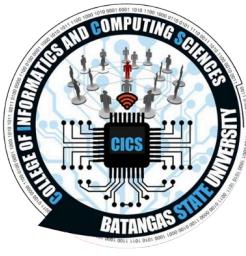
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payment dates and pending fees are stored and displayed by the system.

- Output: Display updated rent payment history to residents, admin, and staff.

13. Generate Reports

- Input: Admin and Staff selects filters and sorts the data needed for the reports.
- Process: The system collects relevant data and displays the data needed.
- Output: The admin and staffs can download or copy the reports.

14. Activity Logging

- Input: System automatically logs key activities such as login, logout, check-in/check-out.
- Process: System records and stores activity logs.
- Output: Activity data recorded for future reference.

15. Logout

- Input: Users(resident, staff, or admin) log out.
- Process: System ends session and logs user out.
- Output: Session ended, user logged out.

• DFD Notation:

- Processes: Circles or ovals, for processes such as user management, room application management, etc.
- External Entities: Rectangles, for the dormitory staff, admin and the general users or residents.
- Data Flows: Arrows showing data movement between entities, processes, and data stores.
- Data Stores: Open-ended rectangles.



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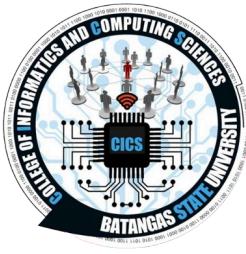
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C. Flowchart

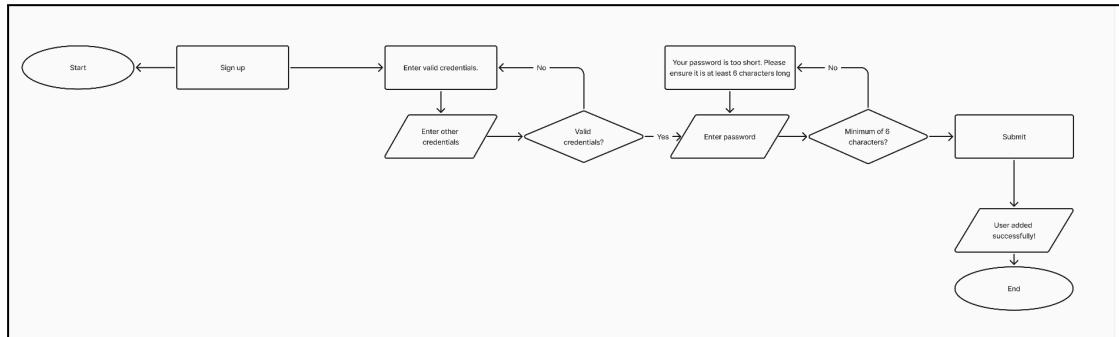
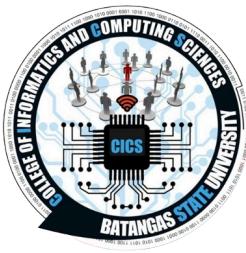


Figure 3 Registration Data Flow Diagram

This diagram shows the registration process for creating accounts. It begins with the admin signing up entering the personal information and account credentials of the user whether it's a staff or a resident. The system checks if the provided credentials are valid and if not, the user provides other credentials, which are validated, including the requirement for a password of at least six characters. After validation, the staff/general user will receive an email notification about their registration, the account is saved and ready to be used.



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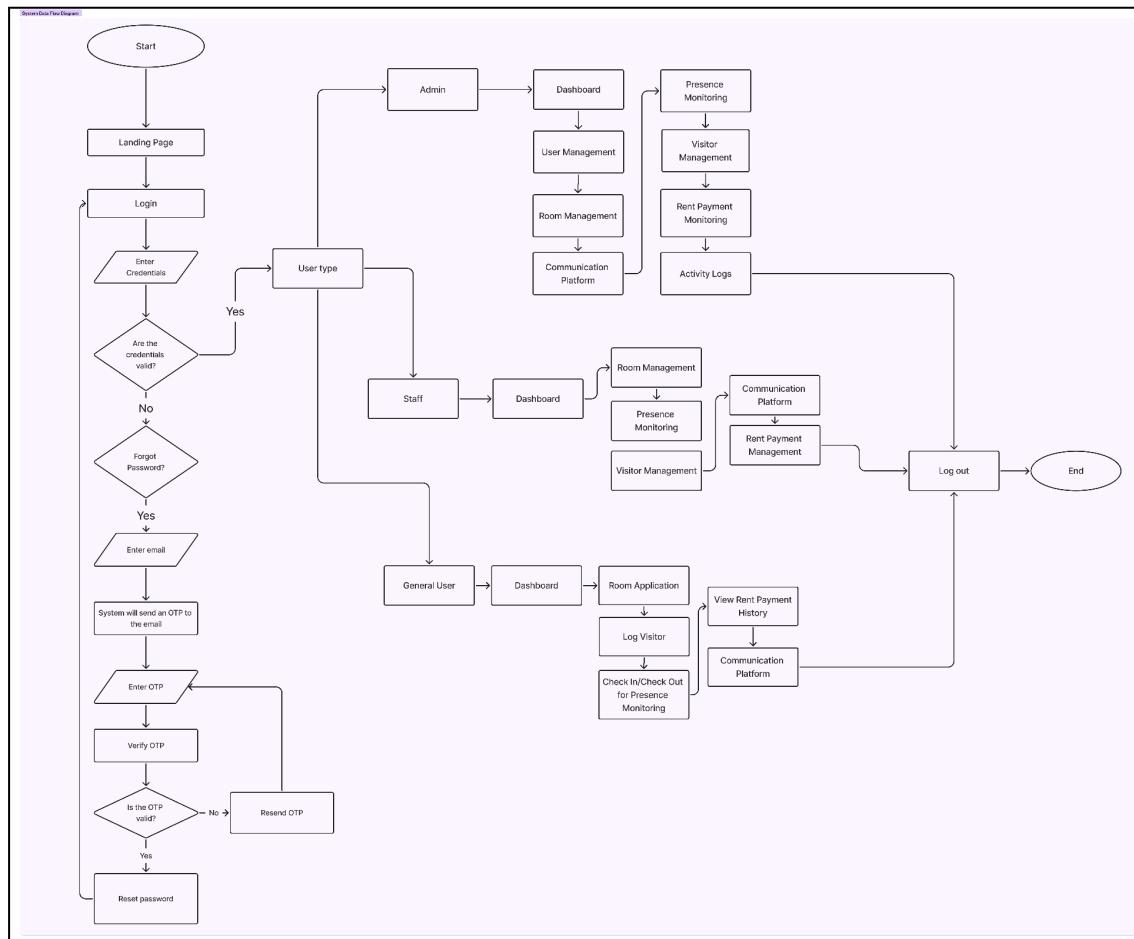


Figure 4 System Data Flow Diagram

This diagram shows how specific users have different access to the system which are the Admin, Staff, and General Users. It begins with a login page which would take users to various dashboards depending on the roles of the user. Admins exist to manage presence, visitors, rooms, rent payments,, and access activity logs. Dormitory staff manage room data, visitor tracking, rent payments, group chat. The general users can apply to rooms, log visitors, check in/out, track rent payments, send and receive messages, see announcements and give feedback. Users can log out to end the session.



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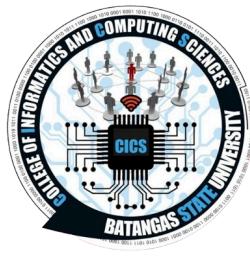
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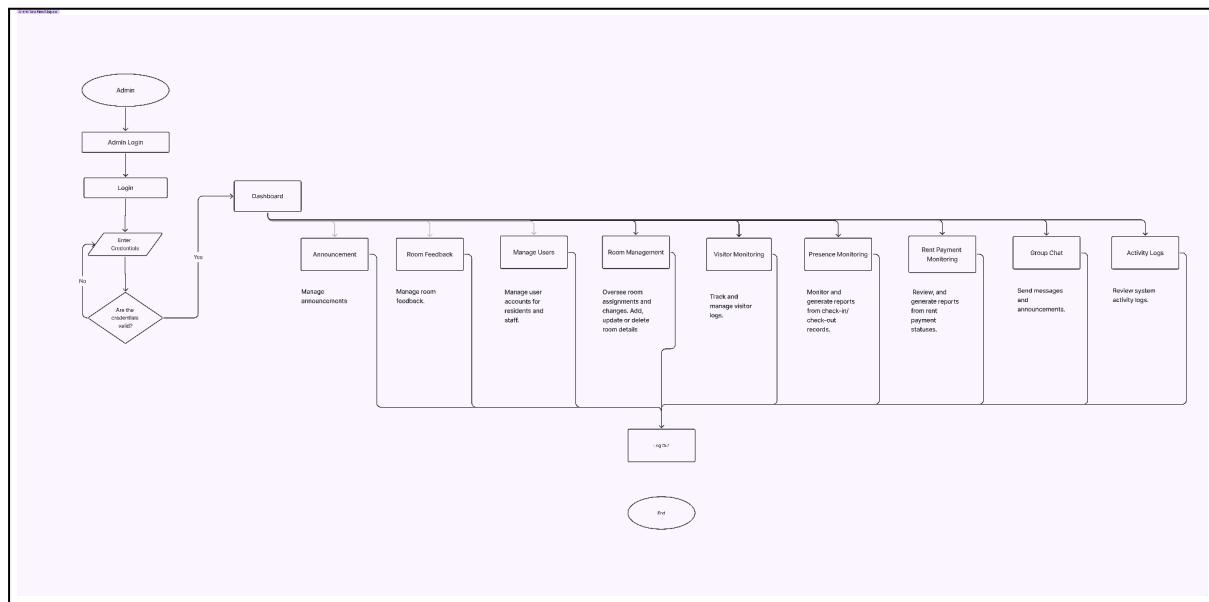
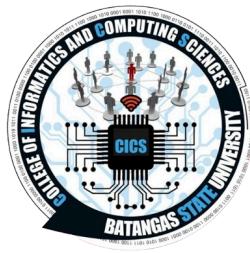


Figure 5. Admin Data Flow Diagram

The Admin Data Flow Diagram illustrates the process for an admin in Dormio, dormitory management system. It begins with the admin logging in, which requires authentication. Once authenticated, the admin can access a dashboard with multiple functions. These include managing user accounts for both residents and staff, overseeing room assignments and changes, tracking and managing visitor logs, and monitoring presence through check-in/check-out records. The admin can also review and generate reports on rent payment statuses, send messages and create announcements, and review feedback and system activity logs. The process ends when the admin logs out, concluding their session.



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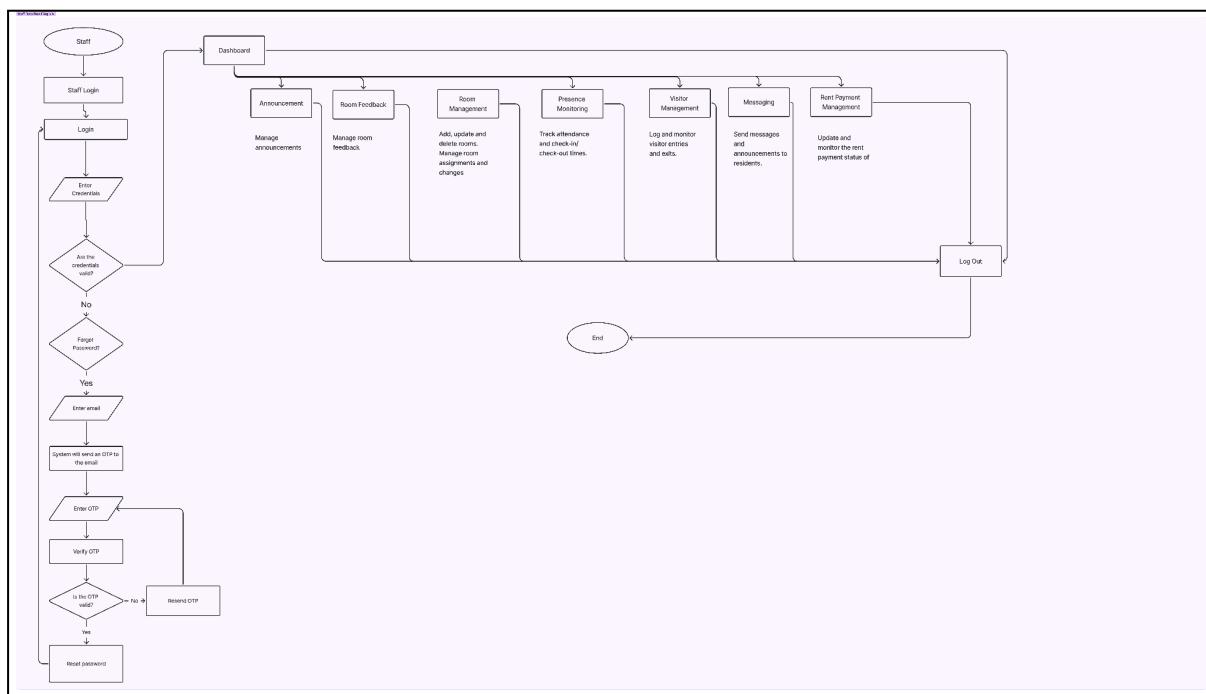
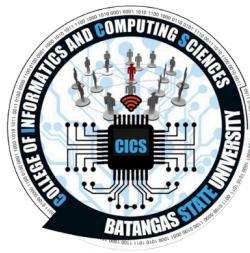


Figure 6. Staff Data Flow Diagram

This Staff Data Flow Diagram shows the process for staff in the dormitory management system. The login of the staff is placed at the beginning where authentication takes place. If the staff forgets about their password, he/she gets a provision to update a new password after entering the email address, changing their password with the use of OTP that will be sent to their email. Once the login is established, the staff is directed to a dashboard, from which some important functionalities begin to get generated. Management of rooms, such as adding, updating, and deleting rooms and room assignments. Its features include check-in and check-out time for tracking presence. Additionally, staff can manage the visitor log, track entry and exit entries; send messages to residents; and monitor, update, or check their rent payments. Lastly, it ends with logging out, concluding the session.



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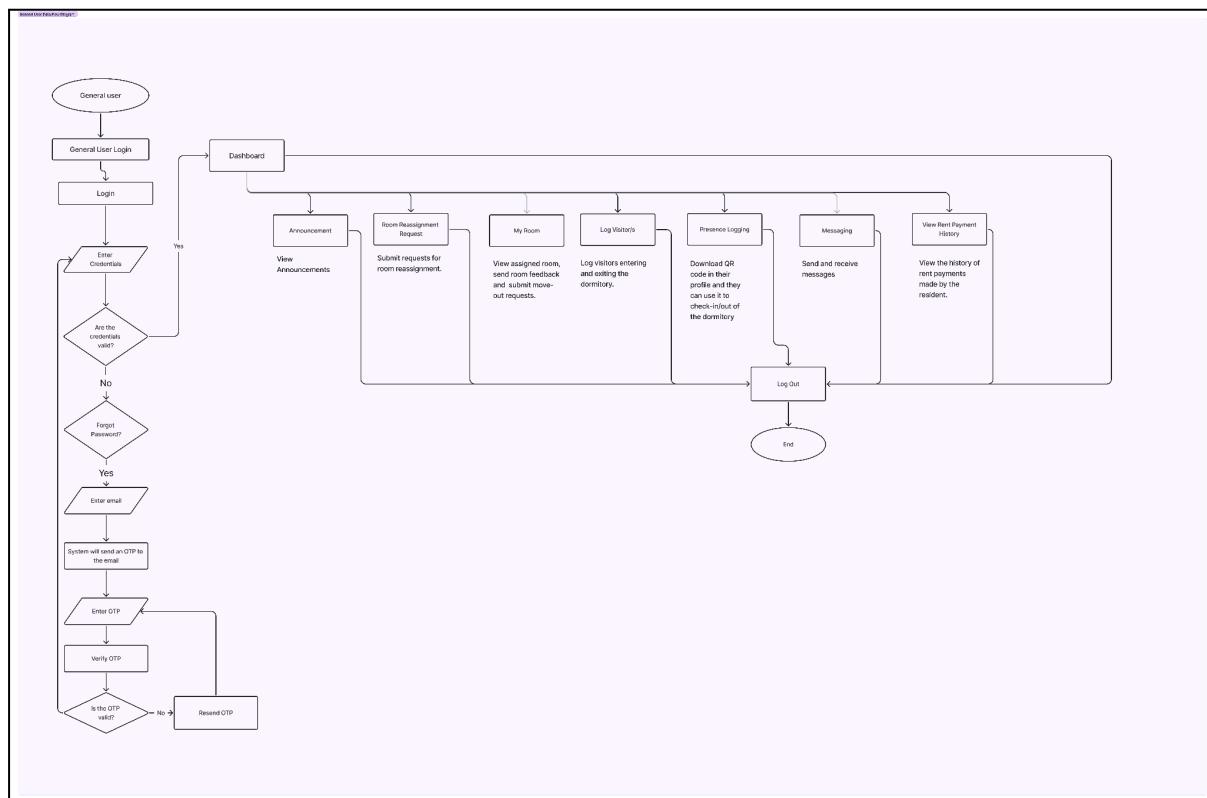


Figure 7. General User Data Flow Diagram

This General User Data Flow Diagram outlines the process for general users within Dormio, a dormitory management system. The process begins with the user logging in, where authentication is required. If the user forgets their password, they can reset it by entering their email and OTP to create a new password after validation. Upon successful login, the user accesses a dashboard that provides several features. These include submitting room reassignment requests, logging visitors' entries and exits, checking in and out for presence monitoring using their QR code. Users can also view their rent payment history and communicate through a group chat that allows them to send and receive messages. The process ends when the user logs out.



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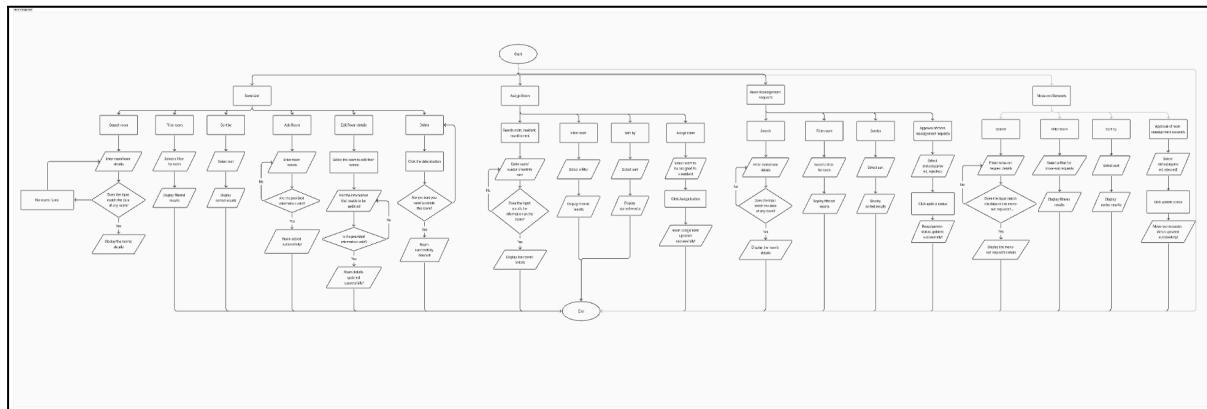
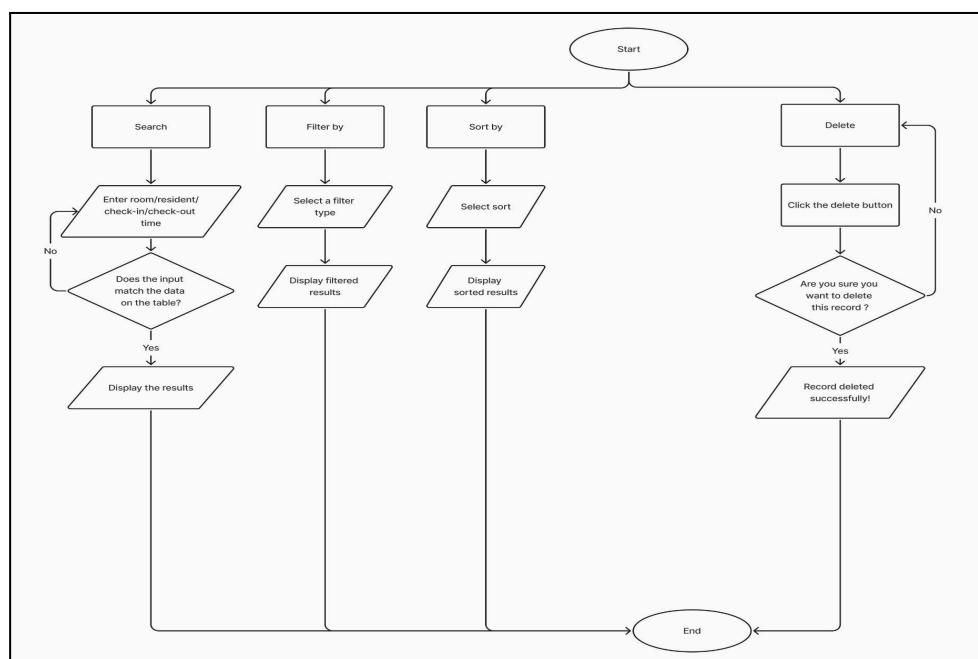


Figure 8. Room Management Data Flow Diagram

This Room Management Data Flow Diagram describes how the admin and staff can manage rooms, room assignments, room reassignment requests, and move-out requests in the system. They can search, filter, sort, add, edit and delete rooms in the room list, assign rooms for the registered residents, approve or reject room reassignment requests and move-out requests.





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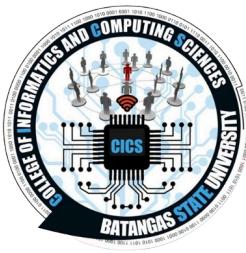
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Figure 9. Presence Monitoring Data Flow Diagram

This diagram represents the Check-in/Check-out for Presence Monitoring process. It starts with the user entering their check-in or check-out details. The system then checks if the entry is valid. If the entry is invalid, an error message is shown, prompting the user to try again. If the entry is valid, the check-in or check-out is recorded, and the process ends.

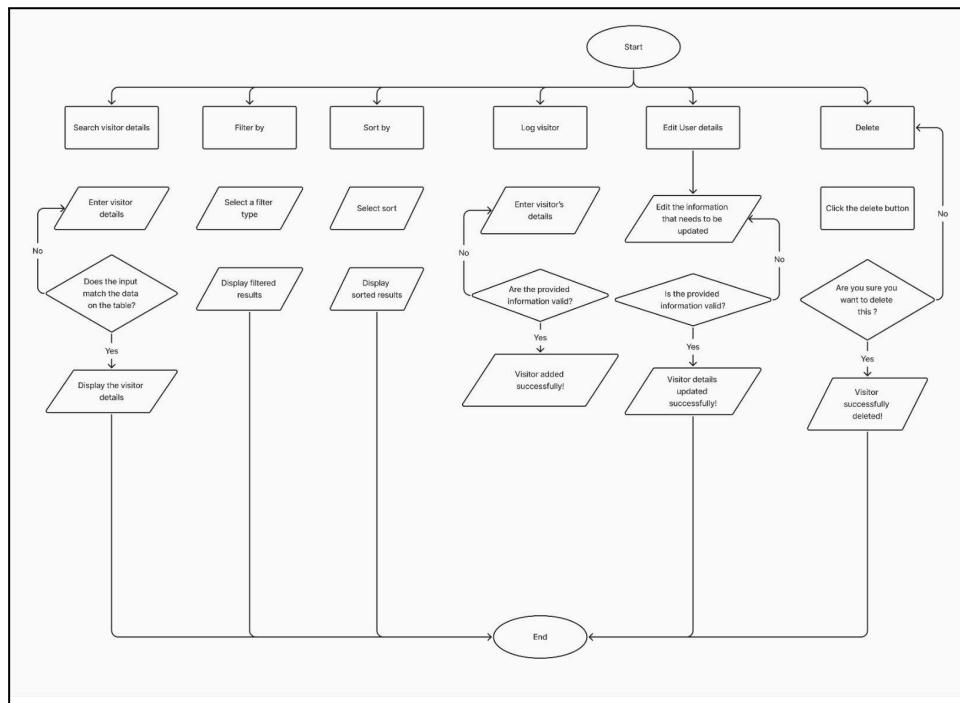
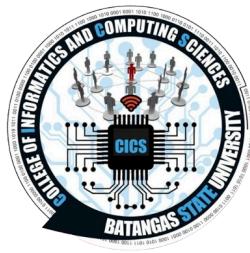


Figure 10. Visitor Logging Data Flow Diagram

This figure represents the process of Visitor Log Data Flow. Here, the visitor details are typed in followed by the check-in/check-out for the visitor. The system validates the entry. Whenever any entry is wrong, an error message gets displayed prompting the user to retry again. If the entry is correct, the visitor log is recorded and the process ends.



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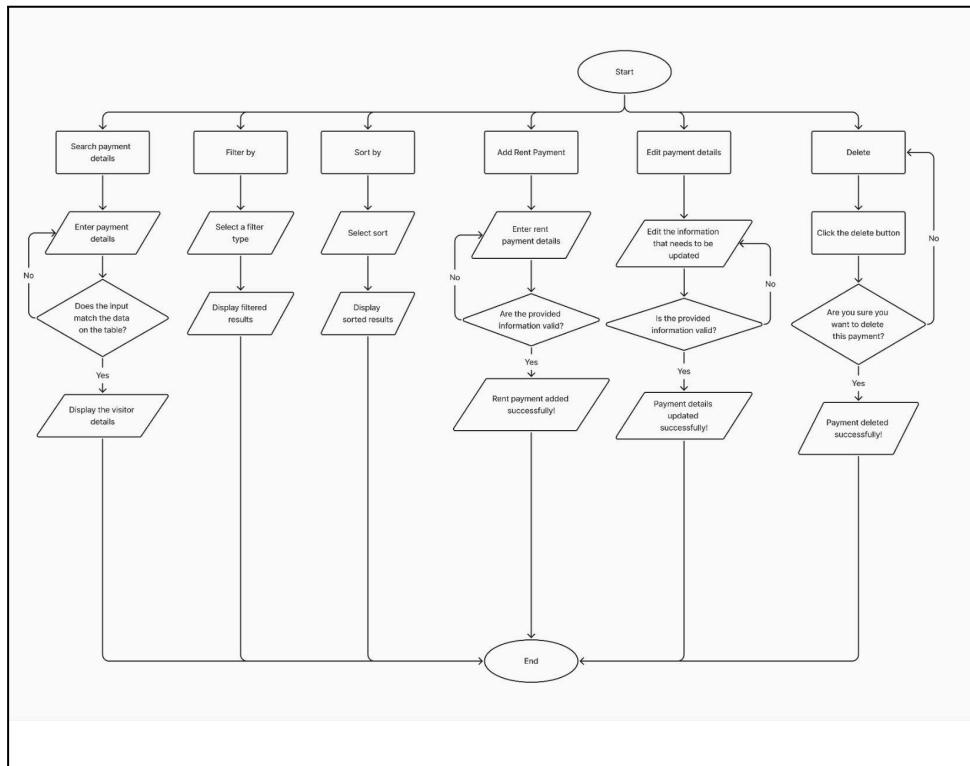


Figure 11. Rent Payment Management

This figure shows the process of rent payment management on the admin and staff's side where they can search rent payment details, sort and filter the data, add, update and delete residents' rent payments.

D. Database Structure

Entities and Relationships

1. users: Information about the residents.

Field Name	Data Type	Description
id	INT(PK)	Unique identifier for each resident.
fname	VARCHAR(50)	First name of the resident.
lname	VARCHAR(50)	Last name of the resident.
mi	CHAR(50)	Middle name of the



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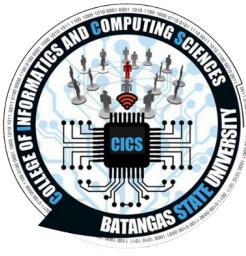
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		resident.
suffix	VARCHAR(255)	Suffix of the resident
birthdate	DATE	Birthdate of the resident
age	INT	Age of the resident
address	VARCHAR(255)	Resident's home address.
contact	VARCHAR(15)	Contact number of the resident.
sex	ENUM	Resident's gender can be 'Male' or 'Female'.
role	ENUM	Role of the user
email	VARCHAR(100)	Unique email address of the resident.
password	VARCHAR(255)	Encrypted password for account safety.
created_at	TIMESTAMP	The time when the resident's account was created.
login_time	TIMESTAMP	The time when the user(resident) logged in to their account.
logout_time	TIMESTAMP	The time when the user(resident) logged out of their account.
profile_pic	VARCHAR(255)	The user's profile picture.
status	ENUM	The status of the user's account whether it is 'active' or inactive'.



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2. staff: Information about the dormitory staffs

Field Name	Data Type	Description
id	INT(PK)	Unique identifier for each staff member.
fname	VARCHAR(50)	First name of the staff.
lname	VARCHAR(50)	Last name of the staff.
mi	CHAR(50)	Middle name of the staff.
suffix	VARCHAR (255)	Suffix of the staff.
birthdate	DATE	Birthdate of the staff
age	INT	Age of the staff.
address	VARCHAR(255)	Staff's home address.
contact	VARCHAR(255)	Staff's contact number
sex	ENUM	Staff's gender can be 'Male' or 'Female'.
role	ENUM	Role of the user
email	VARCHAR(100)	Unique email address of the staff.
password	VARCHAR(255)	Encrypted password for account safety.
created_at	TIMESTAMP	The time when the staff's account was created.
profile_pic	VARCHAR (255)	Profile picture of the staff.
status	ENUM	The status of the staff's account whether it is 'active' or inactive'.

3. admin: Stores information about the admin.

Field Name	Data Type	Description



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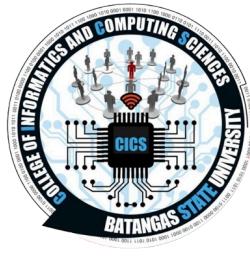
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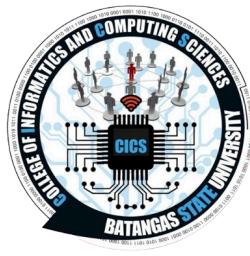


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id	INT(PK)	Unique identifier for each admin.
fname	VARCHAR(50)	First name of the admin.
lname	VARCHAR(50)	First name of the admin.
mi	CHAR(50)	Middle name of the admin.
suffix	VARCHAR (255)	Suffix of the admin.
birthdate	DATE	Birthdate of the admin
age	INT	Age of the admin.
address	VARCHAR(255)	Admin's home address.
contact	VARCHAR(255)	Admin's contact number
sex	ENUM	Admin's gender can be 'Male' or 'Female'.
username	VARCHAR(50)	The admin's username.
email	VARCHAR(100)	Unique email address of the admin
profile_pic	VARCHAR (255)	Profile picture of the admin
password	VARCHAR(255)	Encrypted password for admin account security.
updated_at	TIMESTAMP	Time when the details of the account gets updated

4. presencemonitoring: Tracks check-in and check-out times of residents for attendance purposes.

Field Name	Data Type	Description
attendance_id	INT(PK)	Unique identifier for each attendance record.
user_id	INT	References the resident whose presence is being



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		tracked.
check_in	TIMESTAMP	Time when the resident checks into the dormitory.
check_out	TIMESTAMP	Time when the resident checks out of the dormitory.
date	DATE	Date of the check-in/check-out event.

5. rooms: Provides details about dormitory rooms, including descriptions, room numbers, and rent information.

Field Name	Data Types	Description
room_id	INT(PK)	Unique identifier for each room.
room_number	VARCHAR(50)	The name/number of the room.
room_desc	VARCHAR(255)	Description of the room (e.g., amenities, size).
room_pic	VARCHAR(255)	URL or file path for the room picture.
room_monthlyrent	DECIMAL(10, 0)	The monthly rent amount for the room.
capacity	INT	Maximum number of residents allowed in the room.
status	ENUM	Room status can be 'available', 'occupied',



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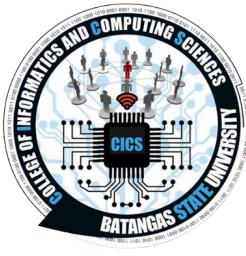
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Field Name	Data Types	Description
		or 'maintenance'.
created_at	TIMESTAMP	Time when the room was created.
archive_status	ENUM	The archive status of the room whether it's deleted or not.

6. roomassignments: Logs the room assignment details associated with specific rooms.

Field Name	Data Type	Description
assignment_id	INT(PK)	Unique identifier for each room assignment.
user_id	INT(FK)	References the resident being assigned to the room.
room_id	INT(FK)	References the assigned room.
assignment_date	DATE	The date the room assignment was made.

7. roomreassignments: Stores the data for room reassignment requests made by the residents.

Field Name	Data Type	Description
reassignment_id	INT(PK)	Unique identifier for each room application
user_id	INT(FK)	References the resident applying for the room (Foreign Key)



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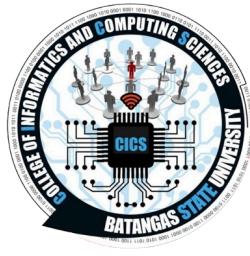
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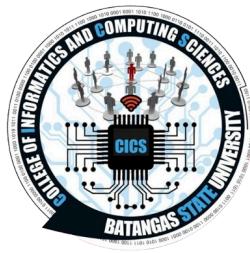


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old_room_id	INT(FK)	References the room currently assigned to the resident(foreign key)
new_room_id	INT(FK)	References to the new room being applied to(foreign key).
reassignment_date	DATE	The date when the room reassignment request was submitted.
status	ENUM	Current status of the request, 'pending', 'approved', 'rejected'.
comment	VARCHAR (255)	Comments of residents on why they requested room reassignment.

8. move_out_requests: Stores the information about move-out requests submitted by the residents.

Field Name	Data Type	Description
request_id	INT	Unique identifier for each move-out request.
user_id	INT(FK)	Referencing to the resident who submitted the move-out request(foreign key).
room_id	INT(FK)	Referencing to the room assigned to the resident(foreign



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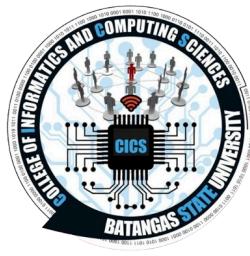
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		key).
reason	TEXT	The reason why the resident requested to move-out.
target_date	DATE	The target date of move out.
request_date	DATETIME	The date when the resident submitted the move-out request.
status	ENUM	The status of the move-out request, 'approved', 'rejected', or 'pending'.
admin_remarks	TEXT	The remarks of the admin or staff when they approve or reject a move-out request which will be sent through email notification.
processed_date	DATETIME	The date and time that the status was 'approved' or 'rejected' by the staff or admin.
processed_by	INT	

9. visitors: Stores the information about visitors of the residents, including their contact details.

Field Name	Data Type	Description
id	INT(PK)	Unique identifier for each visitor.



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name	VARCHAR(100)	Name of the visitor.
contact_info	VARCHAR(100)	Contact info of the
purpose	VARCHAR(100)	Purpose of the visit
visiting_user_id	INT(FK)	References the resident associated with the visitor.
check_in_time	DATETIME	Records the time when the visitor entered.
check_out_time	DATETIME	Records the time when the visitor leaves the dormitory.
archive_status	ENUM	The archive status of the request ‘active’, ‘archived’.

10. roomfeedback: Stores room feedback submitted by residents to the management.

Field Name	Data Type	Description
id	INT(PK)	Unique identifier for each feedback submission.
user_id	INT(FK)	References the resident submitting the feedback.
assignment_id	INT(FK)	References to the room assigned to the resident(foreign key).
feedback	TEXT	The content of the feedback submitted.
submitted_at	TIMESTAMP	The time when the



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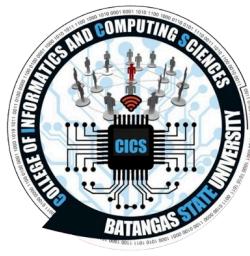
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		feedback was submitted.
archive_status	ENUM	The archive status of the room feedback ‘active’, ‘archived’.

11. chat_messages: Contains the messages sent between users in the dormitory group chat.

Field Name	Data Type	Description
id	INT(PK)	Unique identifier for each message.
sender_id	INT(FK)	References the user who sent the message.
receiver_id	INT(FK)	The content of the message.
message	TEXT	The content of the message.
timestamp	DATETIME	The time when the message was sent.

12. announce: Contains announcements posted by admins or staff for the dormitory residents.

Field Name	Data Type	Description
announcementId	INT(PK)	Unique identifier for each announcement
title	VARCHAR	Title of the announcement



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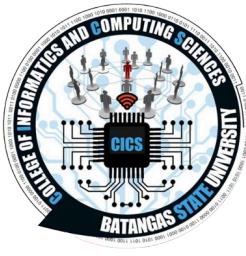
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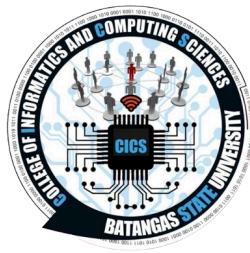


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content	TEXT	The content of the announcement
date_published	TIMESTAMP DEFAULT CURRENT_TIMESTAMP	When the announcement was created
is_displayed	TINYINT (1)	A flag indicating if the announcement is displayed(1 = displayed, 0 = hidden).
archive_status	ENUM	The archive status of the announcement, ‘active’, or ‘archived’.

13. rentpayment: Tracks payment transactions made by residents, including the amount and payment status.

Field Name	Data Type	Description
payment_id	INT(PK)	Unique identifier for each payment transaction.
user_id	INT(FK)	References the resident making the payment.
amount	DECIMAL(10, 0)	The amount paid.
payment_date	TIMESTAMP	The date and time the payment was made.
status	ENUM	The status of the

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		payment, which could be 'Paid', or 'Overdue'.
payment_method	ENUM	The payment method used/ to be used for rent payment.
reference_number	VARCHAR (255)	When the resident paid their rent through online banking
archive_status	ENUM	The archive status of the rent payment, 'active', or 'archived'.

14. activity_logs: Records various activities performed by users, such as logging in, submitting health reports, or applying for rooms.

Field Name	Data Type	Description
log_id	INT(PK)	Unique identifier for each activity log entry.
user_id	INT(FK)	References the user who performed the activity.
activity_type	ENUM	Specifies the type of activity (e.g., login, payment, check-in).
activity_details	TEXT	A brief description of the action performed.



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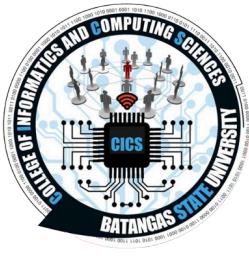
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activity_timestamp	TIMESTAMP	The time when the activity occurred.
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Relationships

- **General Users(users) and Presence Monitoring(presencemonitoring)**

- The presencemonitoring table contains the details about the check-in/ check-out times of the residents and it is connected to the users table through the user_id. This connection allows the system to know which resident entered or left the dormitory.
- Relationship: One-to-many, a resident can record their check-in/check-out time multiple times.

- **General Users(users) and Room Assignments(roomassignments)**

- The RoomAssignments table contains the details about room allocations connected to the General Users table through the user_id column. This connection allows the system to determine which resident is assigned to a particular room.
- **Relationship:** One-to-Many, a resident can have multiple room assignment overtime.

- **General Users(users) and Room Reassignment Requests(roomreassignments)**

- The roomreassignments table is connected to the users' table through the column user_id. This connection allows the system to display the resident who requested for the room reassignment.
- Relationship: One-to-Many, the residents can submit multiple reassignment requests over time.

- **General Users(users) and Move-Out Requests(move_out_requests)**

- The move_out_requests table holds each request tied to the



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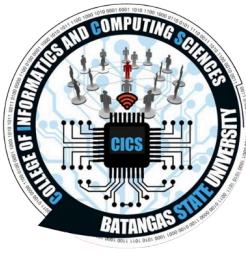
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users table through the user_id column, allowing the system to track all the move-out requests submitted by any given resident.

- **Relationship:** One-to-Many, a general user may submit multiple move-out requests if they happen to move back in the dormitory.

● General Users(users) and Visitors(visitors)

- The visitors table contains the visitor log details and is connected to the users table with the user_id column, allowing the system to monitor the check-in/check-out times and details of the visitors.
- **Relationship:** One-to-Many, since a resident can have multiple visitors.

● General Users(users) and Room Feedbacks(roomfeedback)

- The roomfeedback table stores the room feedbacks submitted by the residents and it is tied to the users table through the user_id table which allows the system to determine which resident submitted the feedback.
- **Relationship:** One-to-Many, general users from the users table can send multiple room feedbacks for different rooms.

● General Users(users) and Group Chat(chat_messages)

- The chat_messages table contains the details of the messages sent by all of the users in the system, connected to the users table which allows the system to display the residents' name when they send messages.
- **Relationship:** One-to-Many, a general user can send multiple messages.

● General Users(users) and Rent Payments(rentpayment)

- The rentpayment table stores the rent payment details added by the staff and admin and it is tied to the users table via the



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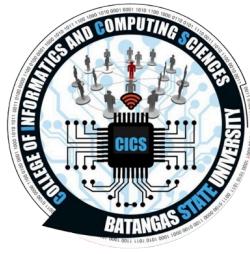
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user_id column which allows the system to determine which resident has a rent payment record.

- Relationship: One-to-Many, a resident can have multiple rent payment records.

● General Users(users) and Activity Logs(activity_logs)

- The activity logs table holds the activity logs of the staffs and residents on the system it is connected to the users table through the user_id column to help the system determine which resident was responsible for the activities.

● Staff(staff) and Group Chat(chat_messages)

- The chat_messages stores the details of the messages sent by different users and it is connected to the staff table with the foreign key sender_id to the staff table.
- **Relationship:** One-to-Many: A staff can send multiple messages.

● Staff(staff) and Activity Logs(activity_logs)

- The activity_logs table contains all the activities of the users inside the system and is connected to the staff table with the user_id which allows the system to determine which staff entered and had activities in the system.

● Admin(admin) and Group Chat(chat_messages)

- The chat_messages stores the details of the messages sent by different users and it is connected to the admin table with the foreign key sender_id to the staff table.
- **Relationship:** One-to-Many, an admin can send multiples messages.

● Room Assignments(roomassignmentS) and General Users(users)

- The roomassignments table logs which users are assigned to which rooms. A user can be assigned to multiple rooms over



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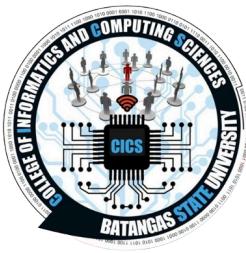
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time, and a room can accommodate multiple users across different assignments.

- o **Relationship:** Many-to-Many. A user can have multiple room assignments, and a room can be assigned to multiple users.

● Room Feedback(roomfeedback) and General Users(users)

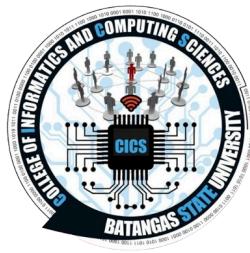
- o The roomfeedback table allows users to submit feedback for rooms they have been assigned to. A user can submit feedback for multiple rooms, and each room can receive feedback from multiple users.
- o **Relationship:** Many-to-Many. A user can provide feedback for various rooms, and each room can receive feedback from multiple users.

● Visitors(visitors) and General Users(users)

- o The visitors table tracks visitors associated with residents. A user can have multiple visitors, and each visitor can visit multiple users.
- o **Relationships:** Many-to-Many. A user can host multiple visitors, and each visitor may visit various residents.



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Rent Price: 1.00 / Monthly Washroom	Rent Price: 2.00 / Monthly Washroom	Rent Price: 3.00 / Monthly Washroom

APPLY FOR A ROOM
Submit your room application online, choosing from available rooms. Our system will guide you through the process, from application to approval.

MANAGE YOUR STAY
Access your room details, make maintenance requests, and check your rent payment history—all in one place. Tailor your stay to suit your needs.

CHECK IN/OUT MADE EASY
Seamlessly check in and out of the dormitory with our presence monitoring feature. Staff will ensure your records are updated and secure.

CONTACT US

Get in Touch

Name:

Email:

Subject:

Message:

Send Message

Our Location

Purok 2, Inosiluban Lipa City
Phone: +123 456 7890
Email: dormio@gmail.com

Services

24/7 Security
Free Wi-Fi
Laundry Facilities
Study Rooms
Common Areas

Quick Links

About Us
Offers
Contact Us

Contact Us

Purok 2, Inosiluban Lipa City
Email: dormio@gmail.com
Phone: +123 456 7890

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Figure 12. Landing Page Wireframe

The figure shows a landing page for Dormio website interface. It includes navigation links, a welcome message, and a room list with rental prices. It has a welcome note, links for navigating, and a list of rooms with rental costs. Important features including stay management, online room applications, and an easier check-in and check-out procedure are highlighted. The footer gives users access to contact information, useful links, and information about the platform's goals.



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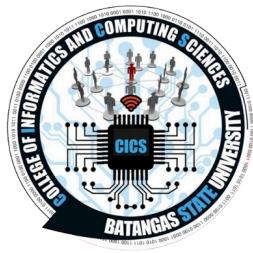
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Figure 13. *Admin, Staff and User Login Interface Wireframe*

The figures show the login screens for Dormio, highlighting the differences between the admin and regular user access. For the admin login, administrators must enter their password and email address, which is meant for authorized personnel only. Unlike regular users, there are no options for "Forgot Password". A "Back" button is available to help users return to the previous screen easily. On the other hand, the regular user login form is for staff and other users who need to input their password and email to access their accounts. This form includes a "Forgot Password" link for recovering lost passwords and a way for new users to create an account. It also has a "Back" button, making it easy for both new and returning users to navigate the system.



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Figure 14. Forgot Password Wireframe

Users are prompted to enter their registered email to receive password reset instructions. Upon submitting the email, users are directed to set a new password by entering both the "New Password" and confirming it in the "Confirm Password" field. This layout ensures a secure and straightforward process for users to regain access to their accounts.

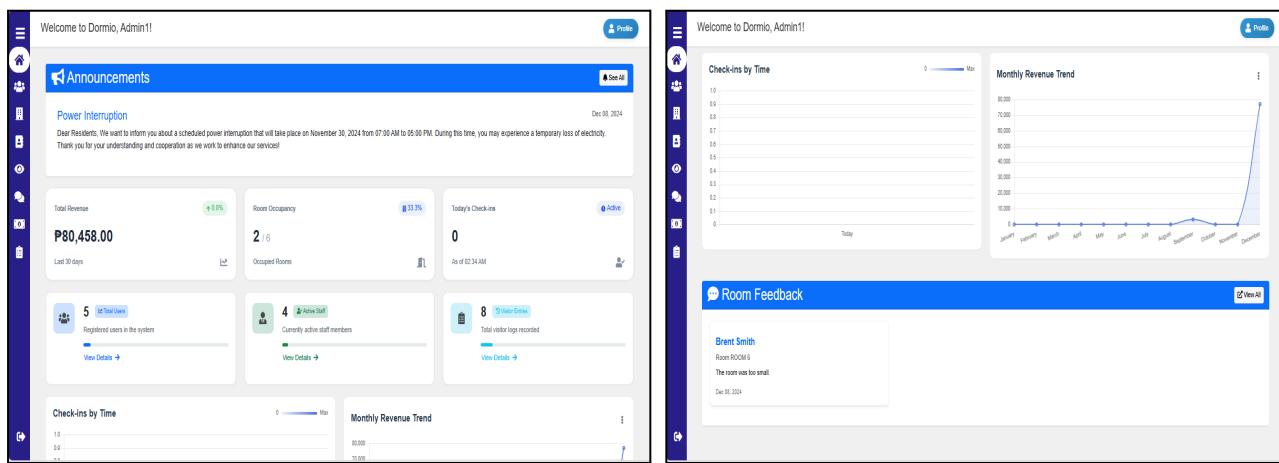
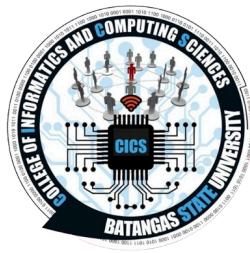


Figure 15. Admin Dashboard Interface Wireframe

The admin dashboard interface for a dorm management system is shown in the figure. Six blank file sections make up the main area; these are placeholders for various features or data displays. On the sidebar, there is a hamburger menu (three-line icon) that expands to reveal nine features: Manage User, Room Management, Group Chat, Presence Monitoring, Visitors Management, Rent Payment Monitoring, Activity Logs, and Log Out. The admin can access different system functionalities in an efficient and well-organized way with this style.



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The wireframe displays two main sections of the Admin Profile Settings. The top section, "Personal Information", contains fields for First Name (Admin1), Last Name (Admin1), Middle Name (Admin), Birth Date (04/08/2004), Age (20), Gender (Male), Contact (091726212), and Address (Poblacion San Juan Batangas). The bottom section, "Account Credentials", shows Email Address (admin@gmail.com) set to Active, Password Protected, Security Level (Standard), and Last Updated (2024-12-08 09:41:48). The right side of the interface includes sections for Account Status (Active), Account Type (Standard), and Recent Activity, which lists logins and profile changes.

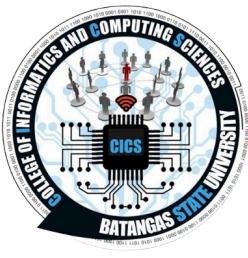
Figure 16. Admin Profile Settings Wireframe

This wireframe shows the Admin's Profile Settings where the admin can edit their personal information, profile picture and account credentials. They can also view the last time they logged in to their account, and the recent activities they did in the system such as updating their profile information and the time they logged out.

NO.	NAME	ROLE	ACCOUNT CREATED	ACTIONS
1	Brent M. Smith	General User	December 07, 2024	<button>Edit</button> <button>Deactivate</button>
2	Shahn E. Cheng	Staff	December 07, 2024	<button>Edit</button> <button>Deactivate</button>
3	Cong V. TV	Staff	December 04, 2024	<button>Edit</button> <button>Deactivate</button>
4	Geo D. Ong	Staff	December 04, 2024	<button>Edit</button> <button>Deactivate</button>
5	sa S. SA	General User	November 27, 2024	<button>Edit</button> <button>Deactivate</button>
6	Jhonna A. Roales	Staff	November 26, 2024	<button>Edit</button> <button>Deactivate</button>
7	Bella a. Bosing	General User	November 26, 2024	<button>Edit</button> <button>Deactivate</button>
8	addad s. radad radadrad	General User	November 25, 2024	<button>Edit</button> <button>Deactivate</button>
9	Kaith Andre A. Crisales	General User	November 25, 2024	<button>Edit</button> <button>Deactivate</button>

Figure 17. Manage Active Users Wireframe

The figure, Manage Active Users Wireframe is where the admin can register new users into the system by adding their personal information and account credentials. The user, a staff or a resident will receive a notification through email when their account is registered in the system. In this feature, aside from adding users, the admin can edit the information of the users, deactivate or reactivate the accounts, search, sort and filter the users, and generate reports through export and printing which allows them to copy and save CSV, Excel, or PDF files, or printed directly.



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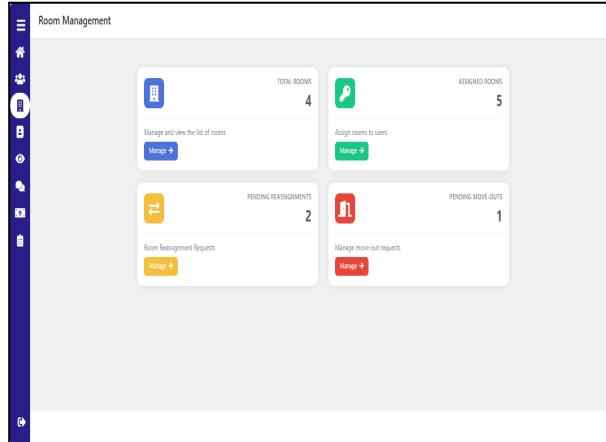


Figure 18. Room Management Wireframe

The wireframe on the figure shows four different sub functions under the Room Management and the number of total rooms, number of assigned rooms, pending room reassignment requests, and pending move-out requests are displayed. The manage button on each card navigates the admin to their respective interfaces.

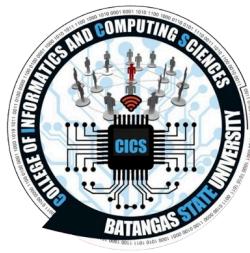
Room List								ACTION	
NO.	ROOM	ROOM DESCRIPTION	CAPACITY	MONTHLY RENT	STATUS	ROOM PICTURE	ACTION		
							COPY	CSV	
1	AA1	6 beds, 1 bathroom, with a kitchen	1/6 people	1,500.00	available		<button>Edit</button>	<button>Delete</button>	
2	AA2	4 beds, 4 study tables, 1 closet, 1 bathroom, kitchen	1/4 people	2,500.00	available		<button>Edit</button>	<button>Delete</button>	
3	AB102	4 beds, 2 study tables, 1 bathroom, kitchen	3/4 people	2,000.00	occupied		<button>Edit</button>	<button>Delete</button>	

Figure 19. Room List Wireframe

The Room List Wireframe presents the feature for managing rooms. The admin or staff can search, filter, sort, add, edit, delete, and generate reports about the rooms. They can export the reports and allow them to copy and save CSV, Excel, or PDF files, or printed directly.



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Room Assignment				
No.	RESIDENT	ROOM	MONTHLY RENT	ASSIGN ROOM
1	Brent Smith	AA1	1500.00	Select Room <input type="button" value="Assign"/>
2	Maverick Maralo	AB102	2,000.00	Select Room <input type="button" value="Assign"/>
3	Boss Bossing	AB102	2,000.00	Select Room <input type="button" value="Assign"/>
4	Rojan Rayos	AA1	1500.00	Select Room <input type="button" value="Assign"/>
5	Keith Andre Cruelas	AA2	2500.00	Select Room <input type="button" value="Assign"/>

Figure 20. Room Assign Wireframe

This figure shows the Room Assign feature where the admin or staff can assign rooms to residents. They can search, sort, filter, update room assignments and generate reports that they can export or print in CSV, Excel, PDF and copy the data of the room assignments.

Room Reassignment Requests					
No.	RESIDENT	REQUEST REASSIGNMENT	COMMENT	STATUS	
1	Brent Smith	sadas	reoooooooooooo	Pending <input type="button" value="Update Status"/>	
2	Boss Bossing	43fgd	dsadas	Pending <input type="button" value="Update Status"/>	
3	Boss Bossing	AA1	ffffdf		
4	Boss Bossing	AB102	dsadas		
5	Boss Bossing	sadas	dsdsdsds		
6	Boss Bossing	sadas	asdasd		
7	Boss Bossing	sadas	tryqt		
8	Boss Bossing	sadas	rjgf		
9	Keith Andre Cruelas	AB102	SASA4A		
10	Keith Andre Cruelas	AB102	sadasda		

Figure 21. Room Reassignment Requests Wireframe

The wireframe shows Room Reassignment Requests where the admin or staff have access to search, sort, filter and update the requests to approve or reject them on the status column. Above the table, tools are provided to copy the data, export it to CSV or Excel formats, or print it for documentation purposes and the



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pagination controls at the bottom allow easy navigation through multiple pages of data if necessary.

Figure 22. Move-Out Requests Wireframe

The figure shows the Move-out Requests' wireframe where the admin or staff can view the requests submitted by the residents. They can search, sort, filter, reset the sort and filters, and update the requests by approving or rejecting the requests. The resident will be notified through email if their application was rejected/approved by the admin or staff.

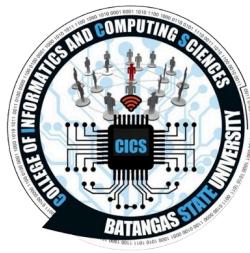
NO.	VISITING PERSON	CONTACT INFO	PURPOSE	RESIDENT NAME	CHECK-IN	CHECK-OUT	ACTIONS
1	Maverick Mado	09123456789	Party	Brent Smith	Dec 07, 2024 7:30 AM	N/A	<button>Delete</button>
2	Shiloh Cheng	09123456789	Party	Brent Smith	Dec 07, 2024 5:45 PM	N/A	<button>Delete</button>
3	dfdf5	09123456789	fsdf	Kelly Andre Gruelas	Dec 02, 2024 9:43 AM	Dec 02, 2024 10:01 AM	<button>Delete</button>
4	Alia HAWA	09123456789	owner	Ross Bossing	Dec 02, 2024 10:30 AM	Dec 02, 2024 10:34 AM	<button>Delete</button>

Figure 23. Visitor Log Wireframe

The figure shows how the admin can view the visitor logs, search, filter, sort and delete them. There are also buttons to copy the data, export it to CSV or Excel



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formats, or print it for reports. The pagination controls at the bottom allows easy navigation through multiple pages of data if necessary.

The wireframe displays a "Presence Monitoring" interface. At the top, there is a search bar labeled "Search for residents, rooms, etc..." and buttons for "Copy", "CSV", "Excel", "PDF", and "Print". Below the search bar is a "Filter by" dropdown and a "Sort by" dropdown. A table follows, with columns: NO., RESIDENT NAME, ROOM, CHECK-IN TIME, and CHECK-OUT TIME. The table contains two rows of data:

NO.	RESIDENT NAME	ROOM	CHECK-IN TIME	CHECK-OUT TIME
1	Keith Andre Ciruelas	AA2	2024-12-05 08:41 AM	2024-12-05 08:43 AM
2	Boss Bossing	AB102	2024-12-01 02:48 PM	2024-12-01 02:48 PM

At the bottom of the table are buttons for "Previous", "Page 1 of 0", and "Next".

Figure 24. Presence Monitoring Wireframe

The wireframe shows the Presence Monitoring feature of the system where the admin and staff can view, search, sort, filter and generate reports from the check-in/check-out times of the residents. There are also selections on top of the table which allows them to copy data, export on CSV and Excel formats, or directly print it. At the bottom of the table there are pagination buttons to allow easy navigation of multiple pages.

The wireframe displays a "Dormio - Group Chat" interface. On the left, there is a sidebar with icons for file management. The main area shows a list of messages in a conversational format. The messages are as follows:

- dsatia 01:47 PM
- Jhona (Staff) 00:00 01:30 PM
- Boss (General User) 00:00 11:00 AM
- Shikha (Staff) 00:00 00:00 PM

On the right, there is a sidebar titled "Members" listing the following users:

- Shikha Cheng
- Brent Smith
- Craig TV
- Geo Org
- Maverick Manalo
- Jhona Robles
- Boss Bossing
- Rojan Rayos
- Keith Andre Ciruelas

At the bottom, there is a message input field with the placeholder "Type a message..." and a send button.

Figure 25. Group Chat Wireframe

The figure presents the wireframe for the Group Chat feature that all of the users can access to send, update, delete and search messages. The members of the



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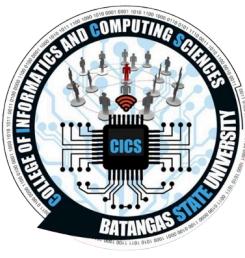
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group chat can be viewed on the side where their details such as name and roles are displayed.

Rent Payment						
<input type="text" value="Search for payment details..."/> <input type="button" value="Filter by"/> <input type="button" value="Sort by"/> <input type="button" value="Add Rent Payment"/>						
No.	Resident Name	Amount	Payment Date	Status	Payment Method	Reference of Online
1	Brent Smith	1,500.00	2024-12-15	Paid	Cash	-
2	Brent Smith	50,000.00	2024-12-07	Paid	Cash	-
3	Keith Andre Crisafas	2,00	2024-12-07	Paid	Cash	-
4	Rogen Reyes	2,312.00	2024-12-03	Paid	Cash	-
5	Keith Andre Crisafas	23,432.00	2024-12-03	Paid	Cash	-

Figure 26. Rent Payment Wireframe

The figure displays the "Rent Payment Management" interface within the dormitory management system's staff dashboard. It features a table listing residents' names, payment amounts, payment dates, and the current status of each payment (e.g., Paid, Pending, Overdue). The interface allows admin or staff to filter the table by name, date, or payment status, streamlining the process of tracking and managing rent payments. This feature ensures accurate record-keeping and easy access to payment information for efficient dormitory operations.

Activity Logs				
<input type="text" value="Search for activity logs..."/> <input type="button" value="Filter by"/> <input type="button" value="Sort by"/> <input type="button" value="View All Archives"/>				
No.	Name	Activity Type	Activity Details	Activity Timestamp
1	Siloh Ching	Login	roy (General User) with email roy1@gmail.com logged in. Status: Successful	2024-12-08 16:33:09
2	Cong TV	Logout	Brent (General User) logged out.	2024-12-08 16:32:46
3	Cong TV	Move Out Request	User submitted a move out request for Room AA1.	2024-12-08 15:39:15
4	Cong TV	Feedback Submission	Brent submitted feedback for Assignment ID 56.	2024-12-08 13:32:19
5	Cong TV	Login	Brent (General User) with email brent1@gmail.com logged in. Status: Successful	2024-12-08 13:29:18
6	Siloh Ching	Login	Siloh (Staff) with email siloh1@gmail.com logged in. Status: Successful	2024-12-08 12:58:01
7	Cong TV	Feedback Submission	Brent submitted feedback for Assignment ID 56.	2024-12-08 10:14:34
8	Cong TV	Login	Brent (General User) with email brent1@gmail.com logged in. Status: Successful	2024-12-08 09:38:21
9	Cong TV	Logout	Brent (General User) logged out.	2024-12-08 09:12:28
10	Cong TV	Room Ressignment Request	Requested rassignment from Room ROOM F 6 to Room sadas. Reason: rabbobbb	2024-12-08 07:40:01
11	Cong TV	Move Out Request Approved	Admin approved move-out request for Room ID 60.	2024-12-08 06:40:01
12		Accessed manage move-out	Accessed manage move-out requests.	2024-12-08 06:40:00

Figure 27. Activity Logs Wireframe



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The figure presents the Activity Logs interface, providing an overview of system activities and actions taken within the dormitory management system for the staff to view.

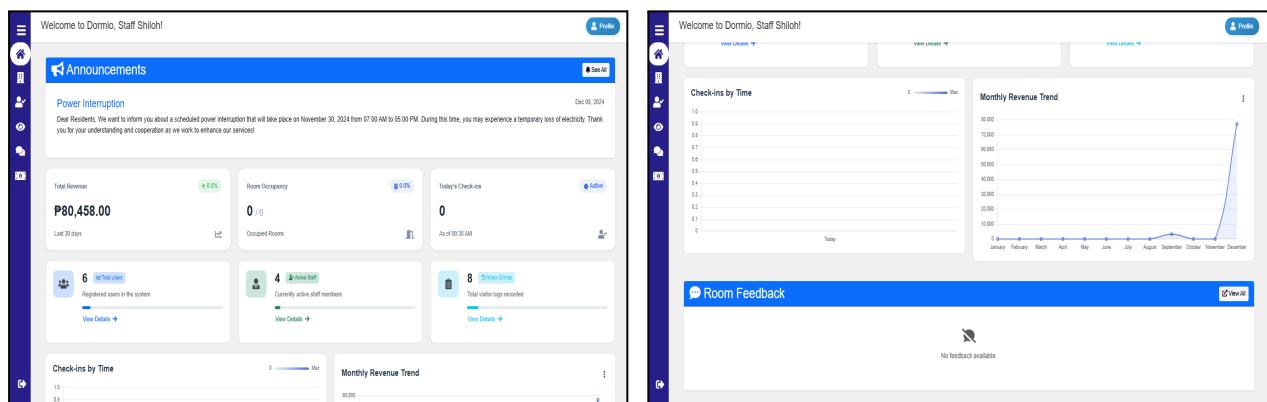


Figure 28. Staff Dashboard Interface Wireframe

The staff interface for the dorm management system is illustrated in the figure. The main area consists of six empty sections, serving as placeholders for different features or data displays. On the sidebar, a hamburger menu (three-line icon) expands to show eight key options: Room Management, Visitor Log, Presence Monitoring, Group Chat, Rent Payment, and Log Out. This layout allows staff to efficiently navigate and manage various system functions in an organized manner.



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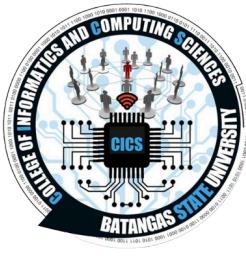
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Figure 29. Staff Profile Settings Wireframe

The figure displays the Profile Settings of the staff where they can edit their personal information such as their first name, last name, age, contact number, birthdate, address or suffix and account credentials such as email, and passwords. They can also upload pictures for their profile picture.

NO.	VISITING PERSON	CONTACT INFO	PURPOSE	RESIDENT NAME	CHECK IN	CHECK OUT	ACTIONS
1	Maverick Malo	09123456789	Party	Brent Smith	Dec 07, 2024 7:50 AM	N/A	<button>Check Out</button> <button>Edit</button> <button>Delete</button>
2	Shiela Cheng	09123456789	Party	Brent Smith	Dec 07, 2024 5:45 PM	N/A	<button>Check Out</button> <button>Edit</button> <button>Delete</button>
3	dfvdf	09123222221	host	Keith Andrei Gruelis	Dec 02, 2024 9:43 AM	Dec 02, 2024 10:01 AM	<button>Check Out</button> <button>Edit</button> <button>Delete</button>
4	Aka Haha	09123222221	exmmt	Boss Bossing	Dec 02, 2024 10:00 AM	Dec 02, 2024 10:34 AM	<button>Check Out</button> <button>Edit</button> <button>Delete</button>

Figure 30. Visitor Log Wireframe

The figure displays the Visitor Log interface within the dormitory management system. It features a table that lists visitor details, including No., name, contact info, purpose, visiting person, check-in, and check-out times. Staff can filter the table by date or name, enhancing the efficiency of managing and tracking visitor information. Residents can also log visitors but they can only view their own visitors. This feature ensures accurate record-keeping and easy access to visitor details for effective dormitory operations. There are also selections on top of the table which allows them to copy data, export on CSV and Excel formats, or directly print it. At the bottom of the table there are pagination buttons to allow easy navigation of multiple pages.



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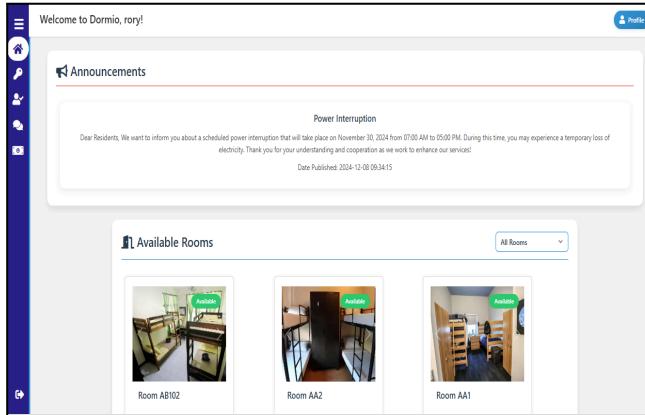


Figure 31. Main User Dashboard Wireframe

The figure illustrates the user dashboard in the dormitory management system, where the main content area is filled with recent announcements and room information. The announcements are prominently displayed, allowing users to stay updated on important dormitory news and events. Below or alongside the announcements, a section showcases the user's room details, including availability and pricing, offering a seamless overview of their stay and any relevant updates.

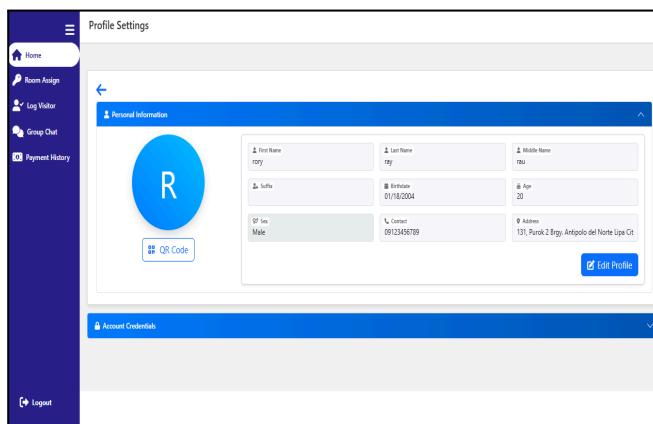


Figure 32. Profile Settings Wireframe

The figure depicts the user's "Profile Settings" interface in the dormitory



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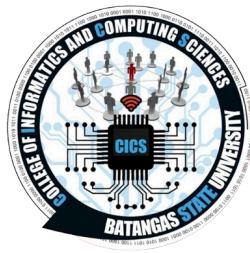
management system. This feature allows users to update their personal information, including fields for first name, middle name, last name, age, address, contact number, and their account credentials. The layout is designed for easy data entry, ensuring that users can quickly make necessary changes to their profiles.

Figure 33. Room Reassignment Request Wireframe

The figure illustrates the "Room Reassignment Request" interface within the dormitory management system. This form allows users to submit a room reassignment request by filling in their reason for requesting a new room. The layout is user-friendly, ensuring a straightforward application process. At the bottom of the form, two buttons—"Submit Request" and "Cancel"—provide users with options to either finalize their application or exit without submitting, facilitating efficient room assignment management.



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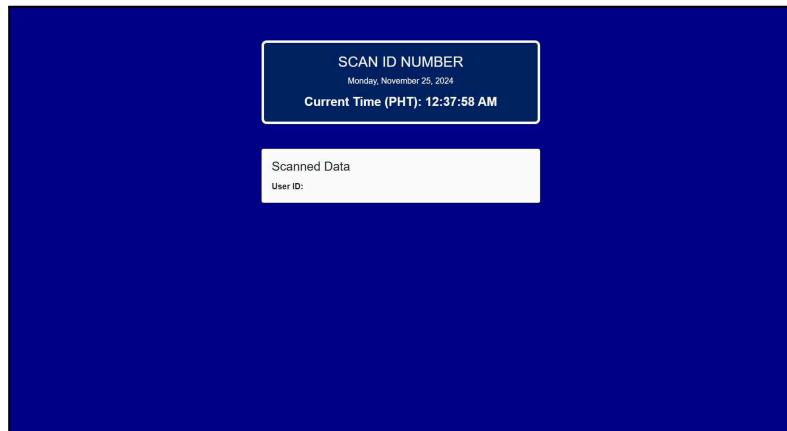


Figure 34. User Check-In/Check-Out Wireframe

The figure presents the "Check In/Check Out" interface within the dormitory management system. This feature allows users to log their presence by scanning their QR code on the scanner. The interface is designed for straightforward interaction, providing users with a clear choice for managing their stay.

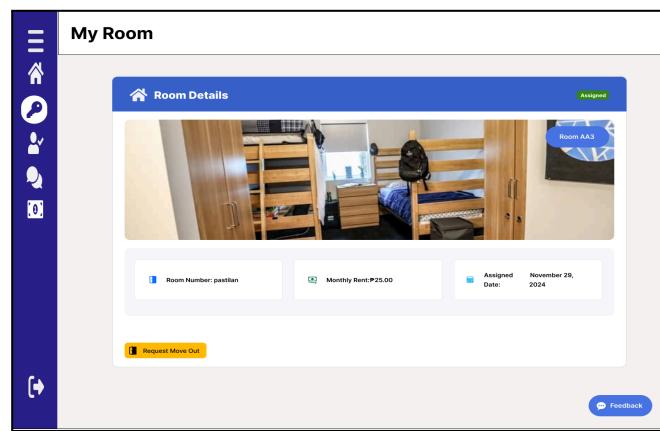


Figure 35 My Room Wireframe

This figure illustrates the "My Room" interface, allowing users to view their



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rooms, submit room feedback regarding their room experience and move-out requests. At the bottom, there's a button for feedback where the residents can share their experience while staying in the room and view the feedback they submitted in the past. After submitting a move-out request, the admin or staff will review it and decide whether they will approve or reject the request.

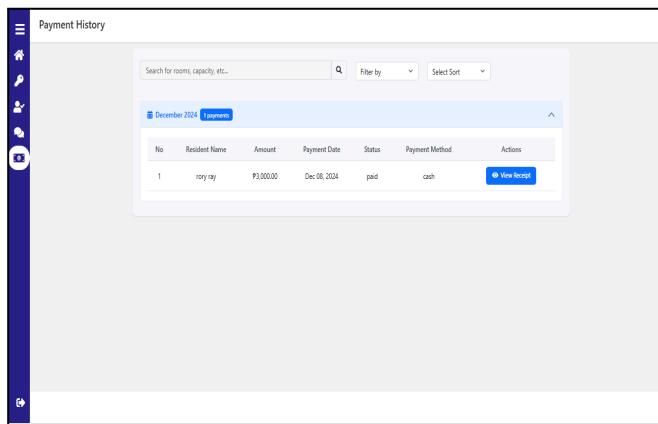


Figure 36. Payment History Wireframe

The residents will be able to view their rent payment history as well as search, sort and filter the payments. The payments are categorized by month, the details such as payment date, amount, the payment method can be viewed on the table and on the actions column, they can see the receipt and there's also a 'Print' button that will allow them to print the receipt.

F. Procedure

1. Install XAMPP – Download and install XAMPP.
2. Install Visual Studio Code – Download and install VS Code.
3. Open Local Disk – Navigate to your local disk (C:).
4. Open XAMPP Folder – Inside C:/xampp.
5. Open htdocs – Navigate to the htdocs folder inside XAMPP.
6. Create Project Folder – Create a new folder (e.g., dormio).
7. Open VS Code – Launch Visual Studio Code.



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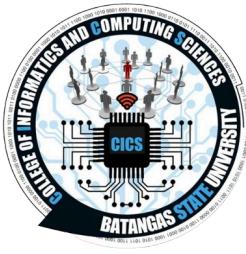
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8. Navigate to Project Folder – Open your project folder in VS Code.
9. Create index.html – Make a landing page for the project.
10. Create admin-user.html. you will choose between Admin Staff or General User."
11. Create login.php – Make a login page for users, admins, and staff.
12. Add Login Code – Handle login functionality in login.php.
13. Create signup.php – Develop a signup form for users.
14. Add Sign-Up Code – Handle user registration in signup.php.
15. Create config.php – Set up the database connection.
16. Create Subfolders – Create admin and users subfolders with respective dashboard files.
17. Link Login to Dashboards – Redirect to admin or user dashboards after login.
18. Connect to Database – Include config.php in login.php to handle database connections.
19. Start Apache & MySQL – Start both services from the XAMPP control panel.
20. Open phpMyAdmin – Create the database dormio_db and set up the users table.
21. Create Database and Table – Create users table with username, password, and role fields.
22. Insert Credentials – Add sample user and admin credentials into the database.
23. Check Login Redirection – Verify login redirects based on user role.
24. Add Logout Button – Implement logout functionality in both dashboards.
25. Redirect After Signup – Ensure the user is redirected to login.php after registration.
26. Create forgot-password.php – Add password reset functionality.
27. Test the System – Test the complete workflow: signup, login, password reset, dashboard redirection and logout.

Database Connection

```
<?php
// Database credentials
define('constant_name: 'DB_SERVER', value: 'localhost');
define('constant_name: 'DB_USERNAME', value: 'root'); // Change to your DB username
define('constant_name: 'DB_PASSWORD', value: ''); // Change to your DB password
define('constant_name: 'DB_NAME', value: 'dormio_db');

// Attempt to connect to MySQL database
$conn = new mysqli(hostname: DB_SERVER, username: DB_USERNAME, password: DB_PASSWORD, database: DB_NAME);

// Check connection
if ($conn->connect_error) {
    die("ERROR: Could not connect. " . $conn->connect_error);
}
?>
```

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CRUD

CREATE: Registration Process

```
// Prepare the SQL statement
$stmt = $conn->prepare(query: "INSERT INTO users (fname, lname, mi, age, address, contact, sex, role, email, password)
| | | | | | | |
VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?);")
```

READ: The information of the resident who registered will be displayed.

```
//users for display
$sql = "SELECT id, Fname, Lname, MI, Age, Address, contact, Sex, Role FROM users";
$result = $conn->query(query: $sql);
```

UPDATE: When a user forgets their password, they can update it easily.

```
//Update the password
$stmt = $conn->prepare(query: "UPDATE users SET password = ? WHERE email = ?");
```

DELETE: The admin can delete registered accounts in the database.

1. Create the ‘announcement.php’ File - This file will manage the announcement functionalities.
2. Include the Database Configuration ‘config.php’
3. Implement CRUD Operations

CREATE: Add new announcements using a form that submits data to the database.

```
// Insert the new announcement into the database with the current date
$sql = "INSERT INTO announce (title, content, date_published) VALUES ('$title', '$content', NOW())";
if (mysqli_query(mysqli: $conn, query: $sql)) {
    echo "<script>alert('New announcement added successfully');</script>";
}
```

Read: Display all existing announcements from the database.



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```
// Display announcements from the database
$sql = "SELECT * FROM announce";
$result = mysqli_query(mysql: $conn, query: $sql);
```

Update: Edit and update announcements through a form.

```
$sql = "UPDATE announce SET title = '$updated_title', content = '$updated_content' WHERE announcementId = $announcement_id";
if (mysqli_query(mysql: $conn, query: $sql)) {
    echo "<script>alert('Announcement updated successfully');</script>";
```

Delete: Delete an announcement by selecting it via its ID.

```
$sql = "DELETE FROM announce WHERE announcementId = $announcementId";
if (mysqli_query(mysql: $conn, query: $sql)) {
    echo "<script>alert('Announcement deleted successfully');</script>";
```

Display Control : Display/Hide (1,0), Announcements Allow toggling between visible and hidden announcements with a simple update to the visible field:

```
// Get current display status
$sql = "SELECT is_displayed FROM announce WHERE announcementId = $announcementId";
$result = mysqli_query(mysql: $conn, query: $sql);
if (!$result) {
    die("Error retrieving display status: " . mysqli_error(mysql: $conn));
}

$announcement = mysqli_fetch_assoc(result: $result);

if ($announcement) {
    // Toggle the display status
    $newDisplayStatus = $announcement['is_displayed'] ? 0 : 1;
    $updateSql = "UPDATE announce SET is_displayed = $newDisplayStatus WHERE announcementId = $announcementId";
    if (mysqli_query(mysql: $conn, query: $updateSql)) {
        echo "<script>alert('Display status updated successfully.');//</script>";
    } else {
        die("Error updating display status: " . mysqli_error(mysql: $conn));
    }
} else {
    die("No announcement found with ID: $announcementId");
}
```



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V. SUBSYSTEM INTEGRATION

A. Design Strategy

The researchers implemented a top-down design strategy in developing the system, Dormio. They prioritized developing the core functionalities of the system before the integrations and even the details for the subsystem. This method begins with a well-defined list of the most crucial objectives and features of the system. This approach helped the team to develop a sound foundation that addresses the most basic user needs. Specifically, the integration of subsystems ensures that they can be utilized in a meaningful manner within the overall architecture after these primary functionalities have been identified and created. Through this type of structured approach, one can manage the complexity of such a complex system, simplify the whole process of the development process, and ensure that every bit fits into the overall concept of improving dormitory management while improving the residents' quality of life..

B. Subsystem

- Title**

- Presence Monitoring

- Purpose**

The Presence Monitoring subsystem serves to enhance security, streamline management and improve overall living experience of the residents. This system will utilize QR Code integration, as it improves the accuracy in recording resident movements and automatically eliminates possible errors due to manual inputs and establishes real-time tracking of the presence of residents in the dormitory. In addition, QR codes enhance security since they allow the logging and monitoring of entries



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and exits from the dormitory in real-time, which might be crucial in dorm management and emergency preparation.

• Functionality

○ QR Code Generation and Management

- Generate unique QR Codes for every resident when they check-in.
- Allow residents to access their QR codes through mobile or web systems.

○ Simplified Monitoring of Attendance

- When tenants enter the dorm, they can swiftly check in by scanning a QR code. Waiting times are greatly decreased by doing away with the necessity for manual roll calls or sign-in sheets. Furthermore, dorm administrators can immediately know who is there thanks to real-time attendance monitoring, which is crucial for emergency procedures and safety.

○ Digital Integration

- By automatically transferring the data gathered from QR code scans to attendance management systems, errors and laborious data entry are minimized.

○ Enhance Security

- To make sure that only people with permission are counted, each resident might have a distinct QR code associated with their identification. This system keeps track of residents' presence and contributes to the upkeep of a safe



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environment.

○ User Friendly Experience

■ Residents can easily scan QR codes using their smartphones, making the check-in process straightforward and accessible. It also makes it possible to integrate it with other services, such as maintenance requests or QR code-linked event sign-ups.

● Integration Requirements

1. QR Code Generation Tool

A reliable QR code generation tool is necessary to generate a unique code for each resident. The tool should give high-resolution QR codes easily scannable and that link directly to attendance forms or databases.

2. Scanning Infrastructure

A proper scanning infrastructure should be put in place for the residents to easily scan the QR codes as they enter or leave the dormitory. The structure can be a smartphone, a tablet, or a designated scanning machine that is set up at every entrance point. It must ensure all residents have the compatible devices with which to scan the QR codes, and it must be easy for all residents to scan so that scanning is continuously done, and attendance is tracked accordingly.

3. Database integration

The QR code integration for presence monitoring



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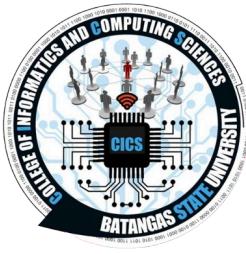
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should be integrated with an attendance management database to automatically record attendance data in real-time. Centralization is most important for efficient data analysis and to minimize errors arising from manual entry. This should handle high volumes of data and export presence records easily for administrative use.

4. User-Friendly Interface

The system should implement a user-friendly interface for the residents, staff, and administrators. The resident should be able to simply scan their QR code, and in case of further action, he or she needs to be given clear instructions. The administrator and staff of the dormitory should have access to a dashboard that shows real-time attendance data and analytics that can be used to manage efficiently

5. Testing and Maintenance

Extensive testing of the system shall have to be undertaken before full implementation to understand any possible problems with scanning as well as with data logging. Maintenance coupled with constant updates is an absolute prerequisite to ensure over time, whether the system could be properly functional and is secure without any emerging new concerns in the system.



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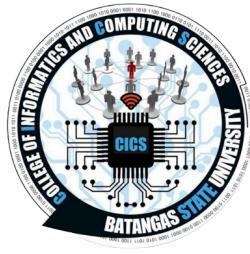
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6. Security Measures

Implement strong security measures on the database to protect resident data. This includes encryption of transmitted data and strong access controls within the database. Attendance records are not accessible except to authorized persons, creating trust and adhering to data protection regulations

C. Integration Planning

• Gathering Requirements

Conducting a comprehensive requirements gathering process by identifying all relevant stakeholders, including administrators, and end-users (such as residents, staff, or visitors), specifying required data fields for presence record.

• Hardware and software Setup

Selecting appropriate QR code scanner devices with built-in scanning functionality, and ensuring that the scanners are capable of connecting to Dormio management system through a secure local network and setting up necessary software installation such as scanning applications

• Development and Customization

Developing and customizing software to integrate the QR code generator and scanner with the attendance system's database, including generating QR code for residents to be scanned by the scanner, and programming the scanner to recognize QR codes that are generated and update attendance records.



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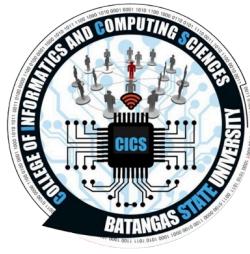
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• Testing and Quality Assurance

Testing the QR code generator to ensure it produces accurate and scannable codes, and performing comprehensive testing to evaluate the QR code scanner's accuracy and speed under various conditions, such as varying lighting and scan angles. test the integration with the attendance system to confirm that data is captured and updated correctly

• User Training and Documentation

Facilitate training sessions or tutorials for administrators and run pilot programs with a small group of users to collect feedback to ensure they can effectively utilize the QR code scanner, and develop user guides along with troubleshooting documentation for future reference.

• Deployment and Monitoring

Implement the deployment of the QR code generator and scanner features in stages, actively monitoring performance and user feedback, and making adjustments based on the feedback to ensure the system operates correctly

• Maintenance and Support

Establish a regular maintenance schedule to ensure that the scanners and developed softwares are operating correctly and running smoothly. Users can use the group chat in the system to report issues or ask questions, and plan for software updates to enhance functionality and security as technology advances.



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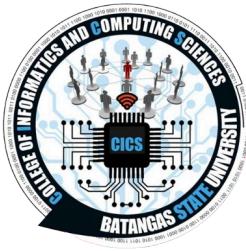
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D. Enhanced Security and Control

QR code integration for resident presence monitoring will improve security and control in the dormitories by offering unique digital credentials that verify identity while preventing unauthorized access. These dynamic QR codes for the residents will reduce the likelihood of replication, while live monitoring creates an audit trail for faster identification of unusual activities. This technology will accelerate entrance processes, and eliminate the manual entry of information, thus making more efficient interactions with security personnel. Overall, QR code integration enhances safety and supports a more efficient living atmosphere.