

LUXURYSTAY HOSPITALITY

Hotel Management System

MERN Stack Web Application



Submitted By: _____ | Institute: Aptech



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Project Title: LuxuryStay Hospitality – Hotel Management System
Aptech



INTRODUCTION

The rapid advancement in information technology has increased the demand for practical implementation of concepts in real-life scenarios. In today's competitive IT industry, professionals are expected not only to understand theoretical knowledge but also to apply it effectively.

However, factors such as busy schedules, limited resources, and lack of real-time practice environments create challenges for students. To overcome these limitations, eProject provides a structured and step-by-step learning approach that bridges the gap between theory and practical implementation.

The LuxuryStay Hospitality – Hotel Management System is developed as part of this eProject to simulate a real-world hotel management environment using modern web technologies.



OBJECTIVES OF THE PROJECT

- To design and develop a real-life Hotel Management System.
- To understand and implement MERN Stack technologies.
- To provide a centralized system for managing hotel operations.
- To automate room booking, guest management, and billing processes.
- To enhance practical knowledge and technical skills through hands-on experience.
- To build a scalable, secure, and user-friendly web application.



PROBLEM STATEMENT

- Many hotels still rely on manual or semi-automated systems.
- Managing room availability, reservations, and guest records is time-consuming.
- Lack of centralized data causes errors in billing and reporting.
- Poor coordination between departments such as reception, housekeeping, and management.
- Difficulty in generating real-time reports for decision-making.

Hence, a modern web-based Hotel Management System is required to automate operations and improve efficiency.



PROJECT BACKGROUND

- LuxuryStay Hospitality is a high-end hotel chain known for providing exceptional services and luxurious accommodations. With hotels located in multiple locations, managing daily operations efficiently has become a critical requirement.
- To enhance operational efficiency and improve guest experience, LuxuryStay envisions a modern and scalable Hotel Management System. The proposed system aims to streamline hotel workflows, centralize data management, and support better decision-making through accurate and real-time information.



SYSTEM OVERVIEW

The LuxuryStay Hotel Management System (HMS) is a web-based application designed to automate and streamline hotel operations. It provides a centralized platform for managing room reservations, guest profiles, billing, housekeeping, and reporting.

The system enables staff and management to coordinate efficiently, reduce manual errors, and improve overall guest satisfaction. It is developed using modern web technologies (MERN Stack) to ensure scalability, security, and a user-friendly interface.



FUNCTIONAL REQUIREMENTS

User Management:



- Admin Dashboard – Manage user roles and permissions.
- Staff Profiles – Create, modify, and deactivate staff accounts.
- Guest Profiles – Maintain guest information including contact and preferences.

Room Management:



- Room Inventory – Maintain details of room types, availability, status, and pricing.
- Room Booking – Reserve rooms, assign guests, and manage bookings.
- Room Status Updates – Real-time updates for cleaning, maintenance, and occupancy.



FUNCTIONAL REQUIREMENTS (CONTINUED)

Reservation and Check-in/Check-out:

- Reservation System – Facilitate online and staff-assisted bookings.
- Check-in/Check-out – Automated procedures for room allocation, billing, and status updates.

Billing and Invoicing:

- Billing System – Generate accurate bills including room rates and additional services.
- Invoicing – Print or email detailed invoices to guests.

Housekeeping and Maintenance:

- Housekeeping Management – Schedule cleaning tasks and mark completion.
- Maintenance Requests – Report and track maintenance issues.



Reporting and Analytics:

- Reporting Dashboard – Customizable reports on occupancy, revenue, and feedback.
- Analytics – Forecast demand, optimize pricing, and improve service.

Feedback and Guest Services:

- Feedback Mechanism – Guests can leave ratings and reviews.
- Additional Services – Room service, wake-up calls, transportation requests.

System Administration:

- System Settings – Configure room rates, policies, and taxes.
- System Notifications – Alerts for bookings, maintenance, and other updates.

FUNCTIONAL REQUIREMENTS (CONTINUED)

Performance:

- The system should respond to user actions within 1–2 seconds.
- Should support hundreds of concurrent users without performance issues.
- Scalable to handle increasing data and users over time.

Security:

- All sensitive data must be securely encrypted during storage and transmission.
- Implement secure authentication and authorization mechanisms.
- Role-based access control to ensure proper data access.

Reliability:

- Minimum 99% uptime, with scheduled maintenance communicated in advance.
- Regular automated data backups to prevent data loss.

Usability:

- User-friendly interface with consistent navigation.
- Responsive design for desktop and mobile devices.
- Adhere to accessibility standards (WCAG).



Compatibility:

- Cross-browser compatibility (Chrome, Firefox, Safari, Edge).
- Works smoothly on various mobile devices and screen sizes.

Privacy:

- Comply with data privacy regulations (e.g., GDPR).
- Users have control over the data they share and give informed consent.

Testing & Quality Assurance:

- Unit testing, integration testing, and end-to-end testing.
- Regular security and performance testing.

Documentation:

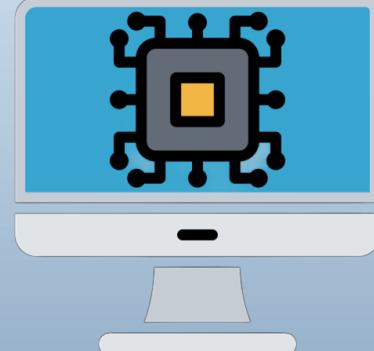
- User manuals, tutorials, FAQs.
- Developer documentation for future maintenance and upgrades.



HARDWARE & SOFTWARE REQUIREMENTS

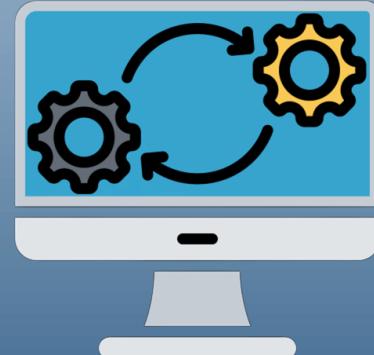
Hardware Requirements:

- A minimum computer system with Pentium 166 or better processor
- At least 128 MB RAM
- Windows 2000 Server or higher
- Internet connection for project deployment and testing



Software Requirements:

- Operating System: Windows OS
- Database: MongoDB
- Backend: Node.js with Express.js
- Frontend: React.js
- Code Editor: VS Code or Notepad++
- Browser: Chrome, Firefox, Edge, or Safari



SYSTEM ARCHITECTURE

The LuxuryStay Hotel Management System follows a modern web-based architecture using the **MERN Stack**:

1. Frontend (React.js):

- Provides a responsive and interactive user interface for Admin, Staff, and Guests.
- Handles user inputs and displays real-time data.

2. Backend (Node.js & Express.js):

- Processes client requests and handles business logic.
- Provides RESTful APIs to communicate with the database.

3. Database (MongoDB):

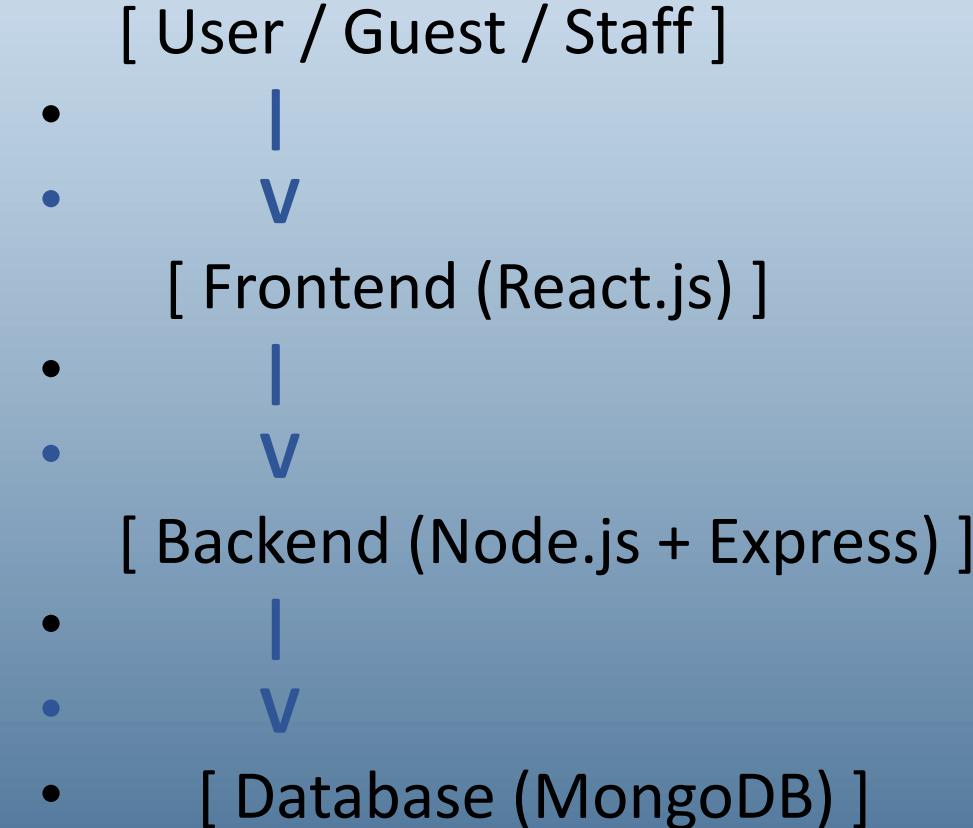
- Stores user information, guest profiles, room inventory, bookings, and billing data.
- Enables secure and efficient data retrieval.

4. Flow:

- User interacts with the frontend → Frontend sends requests to backend → Backend processes requests → Backend communicates with MongoDB → Response sent back to frontend for display.



Diagram Suggestion (Visual Layout)



MODULES DESCRIPTION

1. Admin Module:

- Manage users, assign roles, set system configurations, generate reports.

2. Staff Module:

- Handle room bookings, check-in/check-out, manage housekeeping tasks.

3. Guest Module:

- View room availability, make bookings, provide feedback, request additional services.

4. Room & Booking Module:

- Maintain room inventory, track availability, manage reservations.

5. Billing Module:

- Generate bills, process payments, provide invoices.

6. Housekeeping & Maintenance Module:

- Schedule cleaning, track maintenance issues, update room status.

7. Reporting & Analytics Module:

- Generate reports on occupancy, revenue, guest feedback, and service optimization.



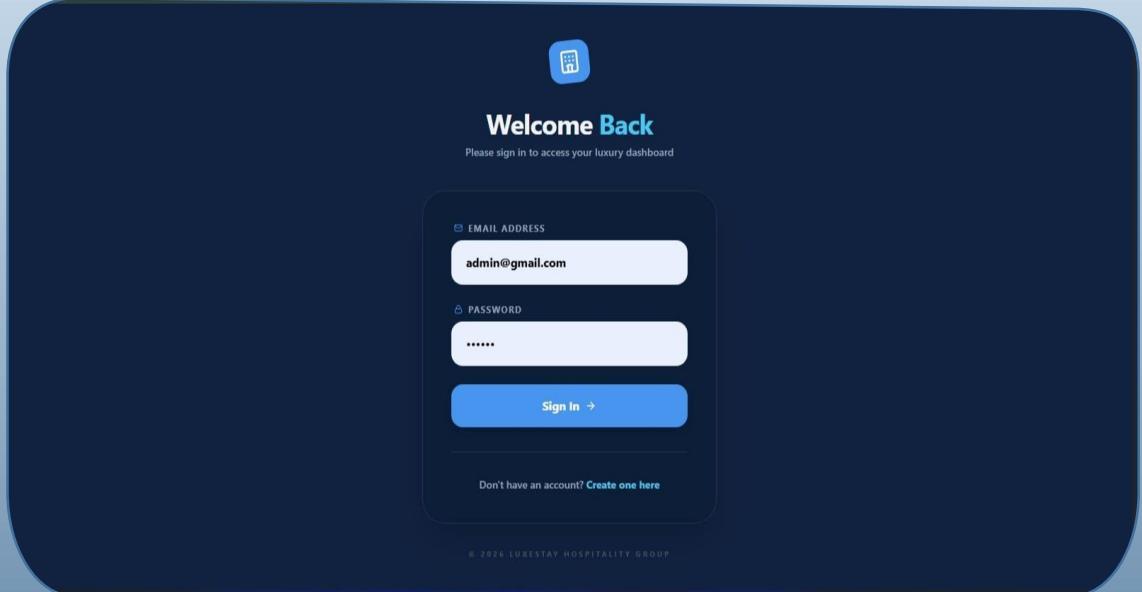
APPLICATION SCREENSHOTS



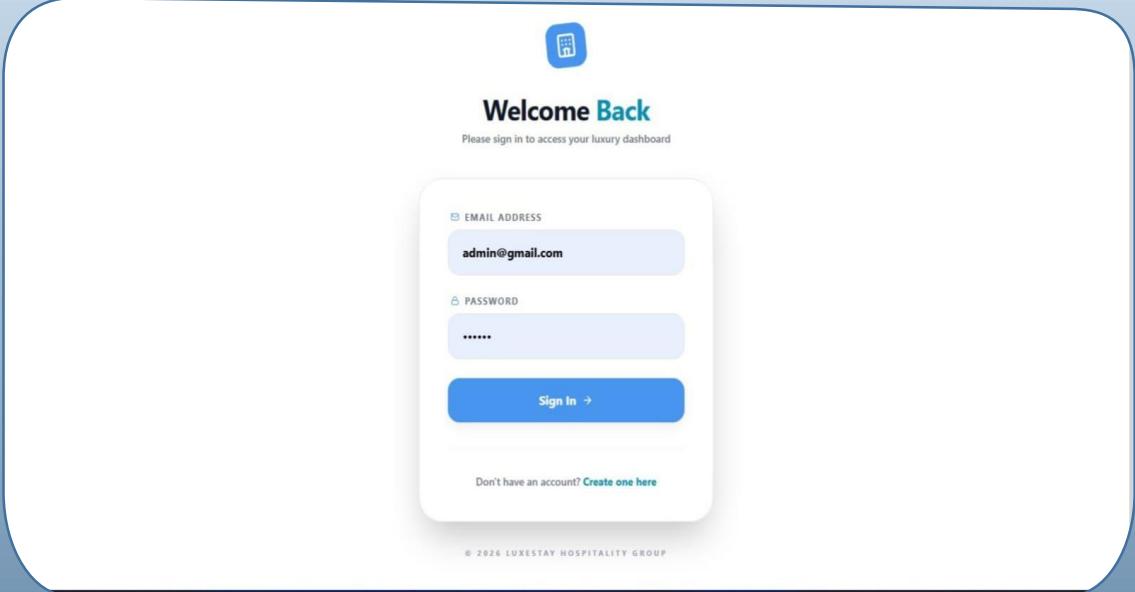
Dark Mode

Admin Login Screen

Light Mode



The screenshot shows the Admin Login Screen in Dark Mode. The background is dark blue. At the top left is a logo icon. Below it is the text "Welcome Back" and a sub-instruction "Please sign in to access your luxury dashboard". A central input form contains fields for "EMAIL ADDRESS" (with "admin@gmail.com" entered) and "PASSWORD" (with four dots indicating the password). A blue "Sign In →" button is at the bottom of the form. Below the form is a link "Don't have an account? [Create one here](#)". At the very bottom is the copyright notice "© 2026 LUXESTAY HOSPITALITY GROUP".

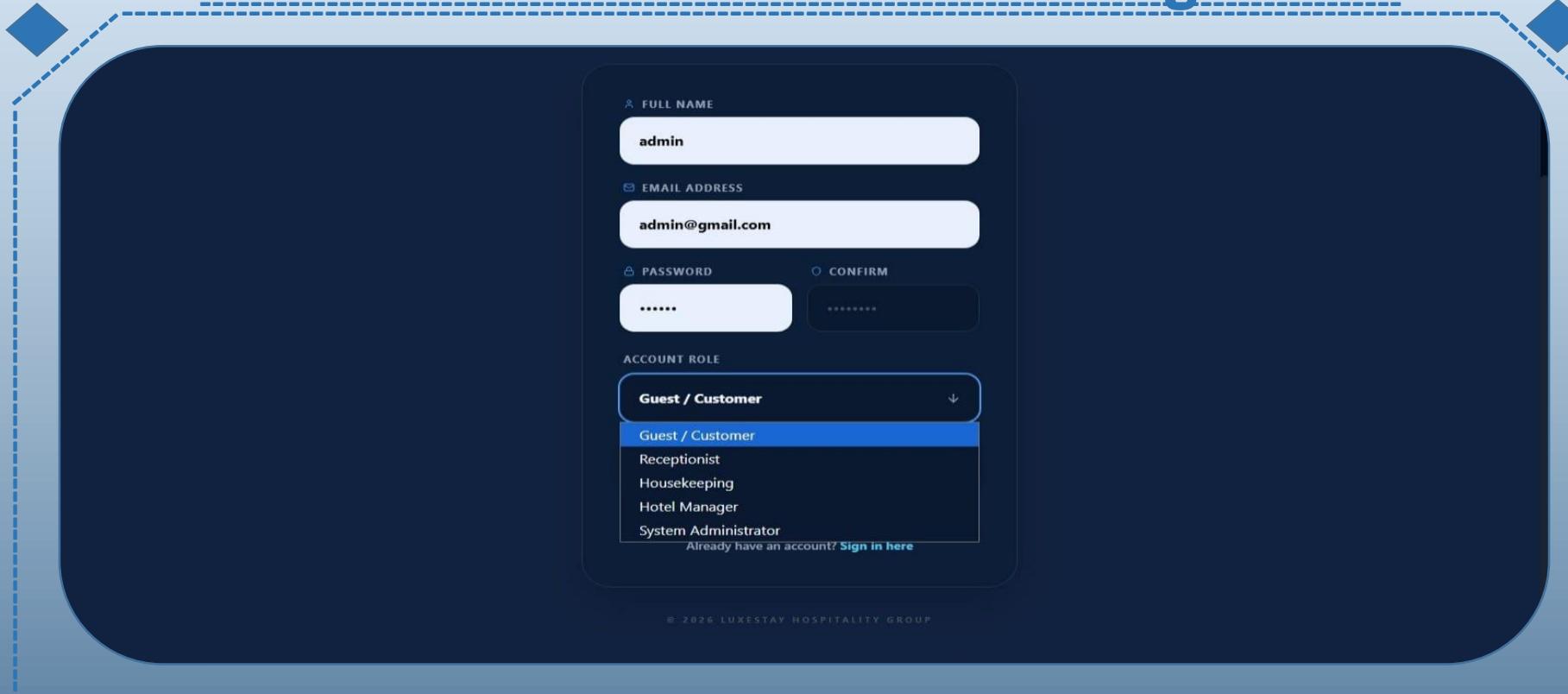


The screenshot shows the Admin Login Screen in Light Mode. The background is white. The layout is identical to the Dark Mode version, with the "Welcome Back" message, "Please sign in to access your luxury dashboard", the "EMAIL ADDRESS" and "PASSWORD" fields (containing "admin@gmail.com" and four dots respectively), the "Sign In →" button, the "Create one here" link, and the copyright notice at the bottom.

This screen allows the admin to log in using a secure email and password. The system supports both dark mode and light mode for better user experience.



Admin Account and Role Management



This screen displays admin account details including email and role.
Role-based access control ensures secure system usage.



Admin Dashboard

The screenshot shows the Admin Dashboard of the LuxuryStay Hospitality system. On the left is a sidebar with a dark blue header containing the 'LuxuryStay Hospitality' logo. Below the header are several menu items: 'Dashboard' (highlighted in blue), 'Users', 'Rooms', 'Reservations', 'Billing', 'Housekeeping', 'Reports', and 'Settings' (also highlighted in blue). At the bottom of the sidebar is a user profile for 'admin' and a 'Sign Out' button. The main content area has a dark blue header with a search bar ('Search room number...'), a notification bell icon, and a user profile for 'admin Admin'. Below the header is a section titled 'SETTINGS' with the sub-instruction 'Configure your personal profile, notifications, and system parameters.' There are five tabs: 'PROFILE' (selected and highlighted in blue), 'NOTIFICATIONS', 'SECURITY', 'PREFERENCES', and 'SYSTEM SETTINGS'. The 'PROFILE' tab displays a placeholder image of a muscular man, the role 'ADMIN', and the email 'admin@gmail.com'. Below this are fields for 'FULL NAME' (set to 'admin'), 'PHONE NUMBER' (set to '+1 234 567 890'), 'MAILING ADDRESS' (set to 'Street, City, Country'), and 'JOB TITLE / ROLE' (set to 'ADMIN'). A 'SECURE SESSION' button is located in the top right corner of the main content area.

The admin dashboard provides an overview of system activities such as room management, bookings, and user information. The profile section allows the admin to manage personal details.

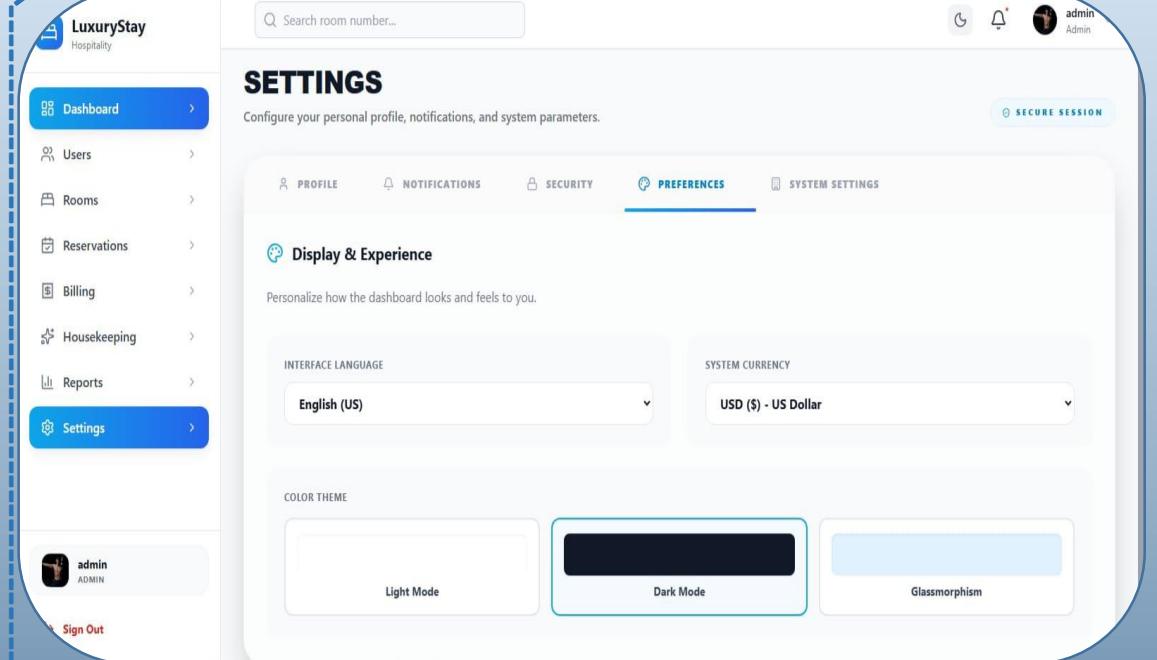


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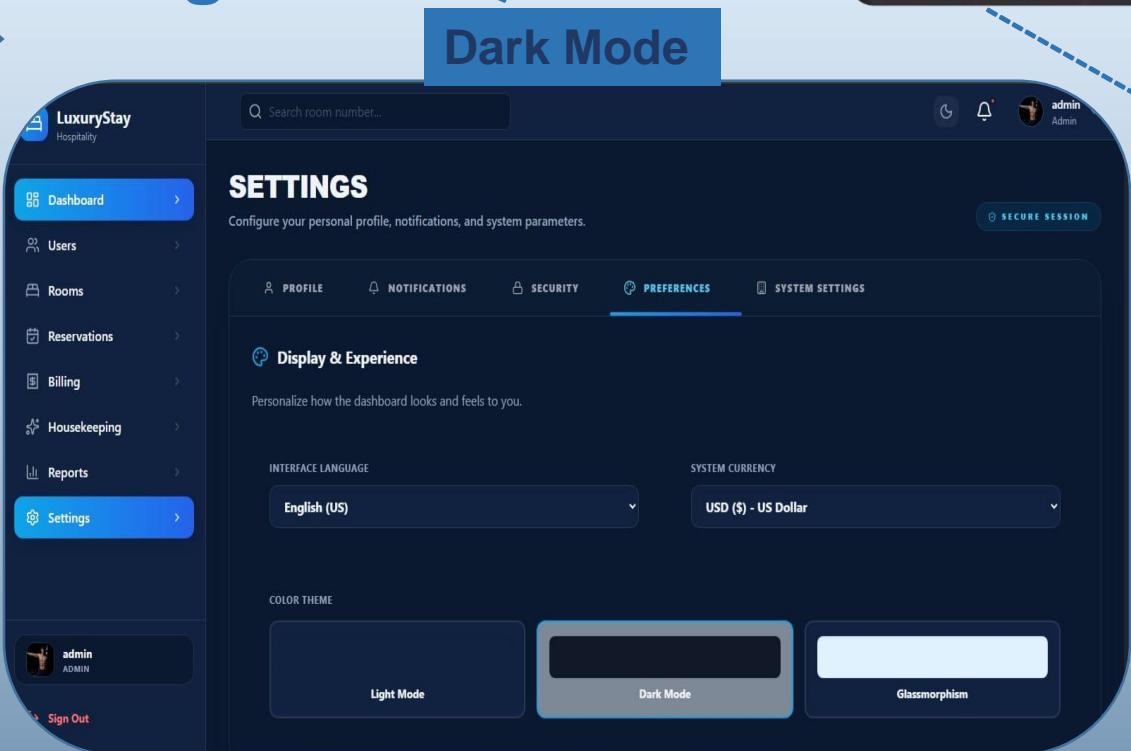
Preferences Settings

Light Mode



The screenshot shows the 'SETTINGS' page of the LuxuryStay Hospitality system. The main title is 'SETTINGS' with the subtitle 'Configure your personal profile, notifications, and system parameters.' Below this is a navigation bar with tabs: PROFILE, NOTIFICATIONS, SECURITY, PREFERENCES (which is highlighted in blue), and SYSTEM SETTINGS. The 'PREFERENCES' section is titled 'Display & Experience' with the subtitle 'Personalize how the dashboard looks and feels to you.' It includes settings for 'INTERFACE LANGUAGE' (set to English (US)) and 'SYSTEM CURRENCY' (set to USD (\$) - US Dollar). A 'COLOR THEME' section shows three options: 'Light Mode' (disabled), 'Dark Mode' (selected and highlighted with a teal border), and 'Glassmorphism'. The left sidebar lists system modules: Dashboard, Users, Rooms, Reservations, Billing, Housekeeping, Reports, and Settings (which is also highlighted in blue). The bottom right corner shows the user profile 'admin ADMIN' and a 'Sign Out' link.

Dark Mode



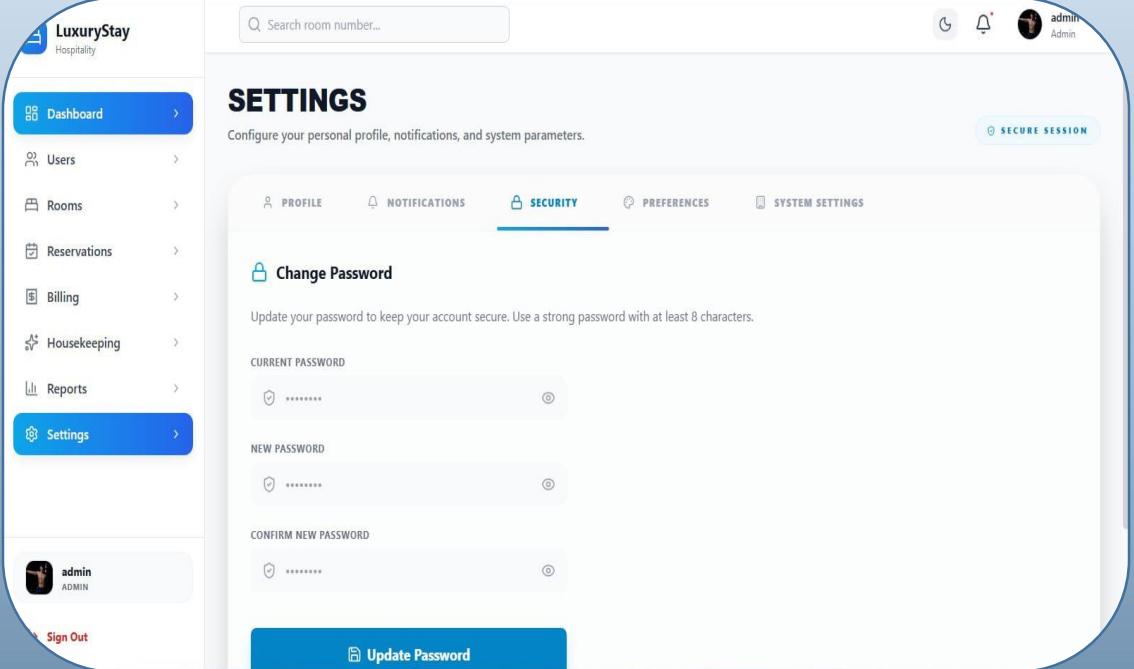
The screenshot shows the same 'SETTINGS' page but in Dark Mode. The overall theme is dark, with light-colored text and UI elements. The 'PREFERENCES' tab is still highlighted. The 'Display & Experience' section remains the same. The 'COLOR THEME' section shows the same three options: 'Light Mode' (disabled), 'Dark Mode' (selected and highlighted with a teal border), and 'Glassmorphism'. The left sidebar and bottom right corner are identical to the Light Mode screenshot.

This screen allows the admin to customize system preferences such as interface mode, display options, and general application behavior.



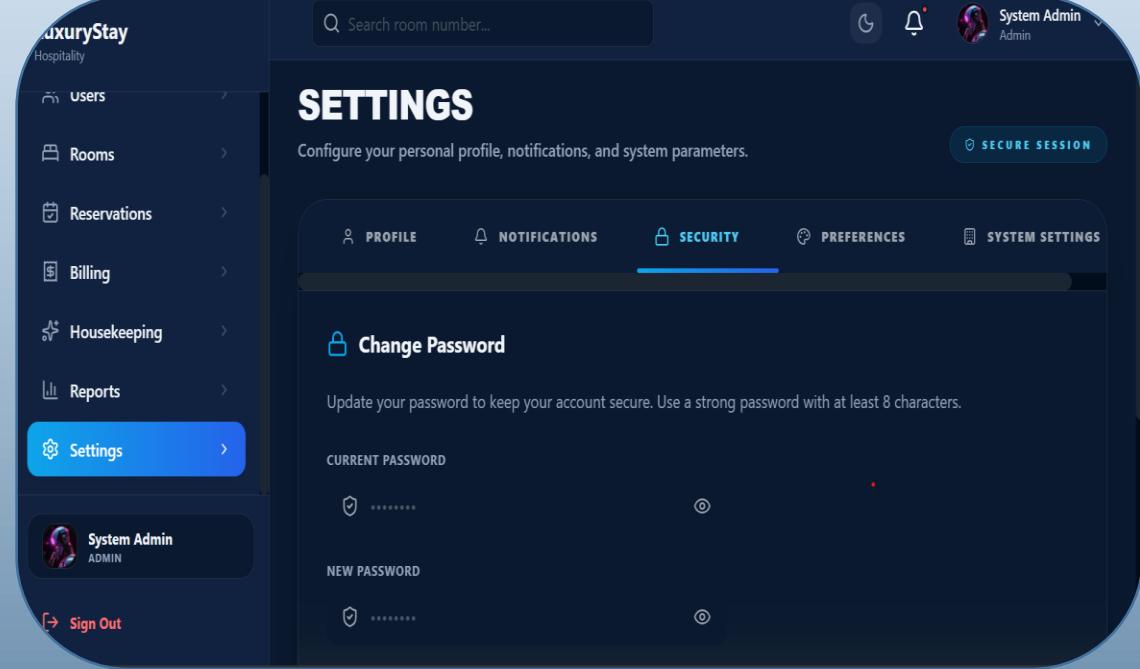
Security Settings

Light Mode



The screenshot shows the 'SETTINGS' page under the 'SECURITY' tab. It includes fields for 'CURRENT PASSWORD', 'NEW PASSWORD', and 'CONFIRM NEW PASSWORD'. A blue button at the bottom right is labeled 'Update Password'.

Dark Mode



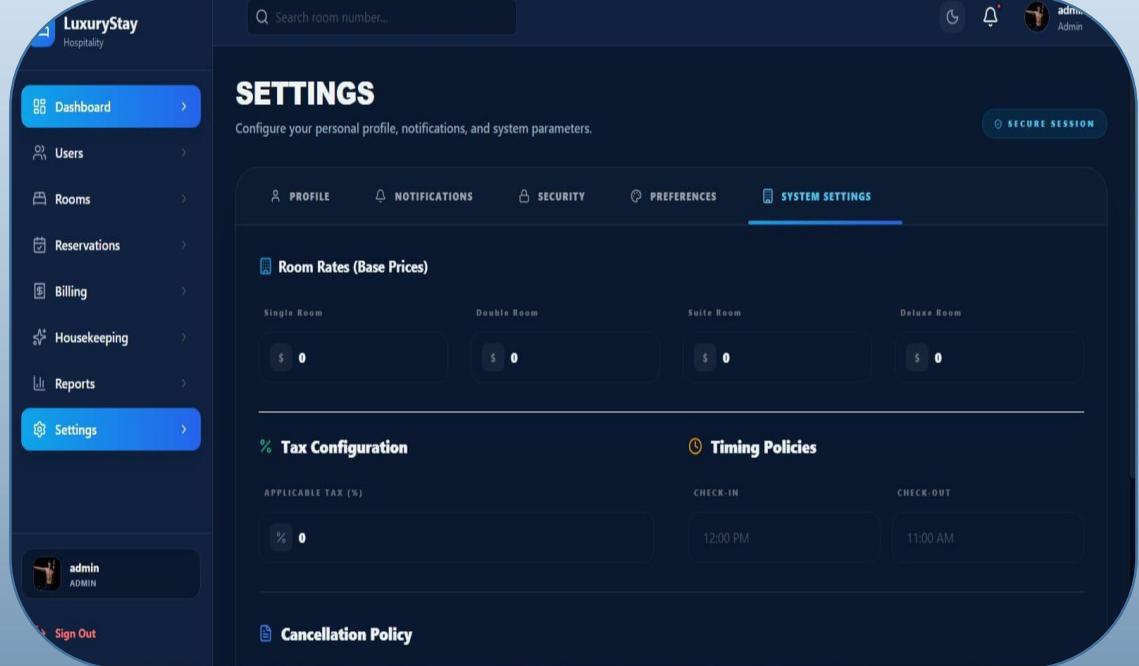
The screenshot shows the same 'SETTINGS' page under the 'SECURITY' tab, but in dark mode. The overall interface is darker, and the text color is white or light gray.

The security settings enable the admin to manage authentication and security-related configurations to protect system data.



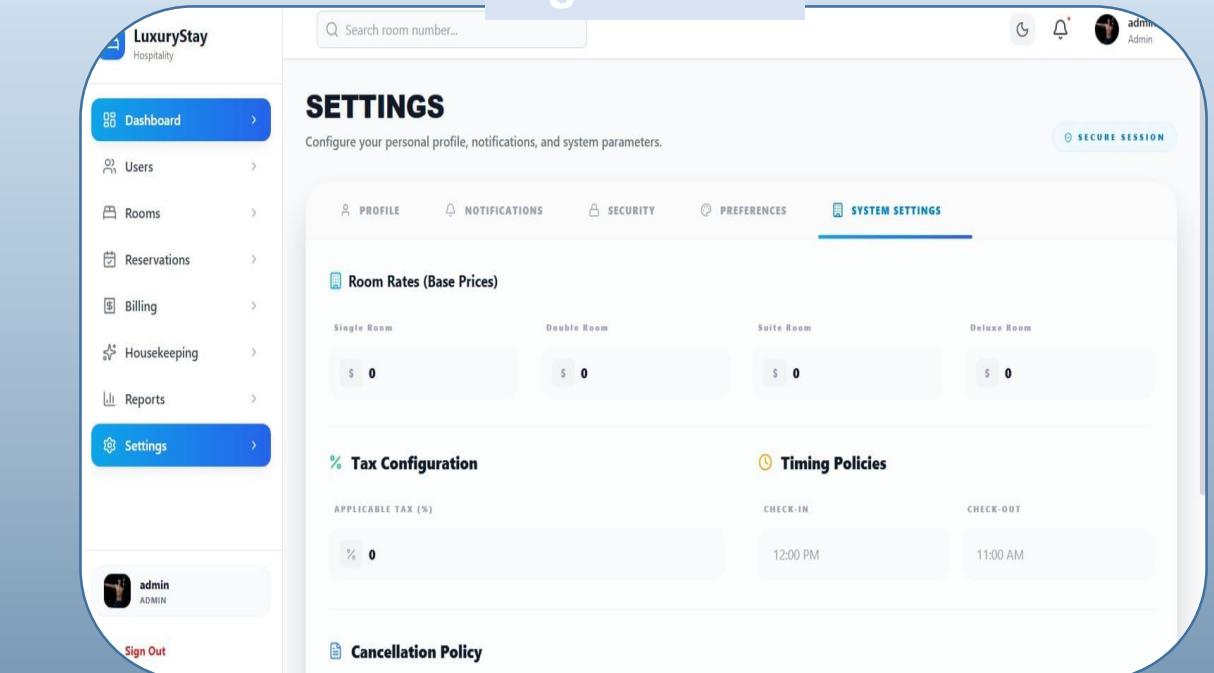
System Settings

Dark Mode



The screenshot shows the 'SETTINGS' page of the LuxuryStay Hospitality system. The interface is dark-themed. On the left, there's a sidebar with 'Dashboard', 'Users', 'Rooms', 'Reservations', 'Billing', 'Housekeeping', 'Reports', and a 'Settings' button. The main area has tabs for 'PROFILE', 'NOTIFICATIONS', 'SECURITY', 'PREFERENCES', and 'SYSTEM SETTINGS', with 'SYSTEM SETTINGS' currently selected. It displays sections for 'Room Rates (Base Prices)' (with four input fields for Single, Double, Suite, and Deluxe rooms, all set to \$0), 'Tax Configuration' (with an input field for 'APPLICABLE TAX (%)' at 0%), and 'Timing Policies' (with dropdowns for 'CHECK-IN' at 12:00 PM and 'CHECK-OUT' at 11:00 AM). At the bottom are 'Cancellation Policy' and a 'Sign Out' button.

Light Mode

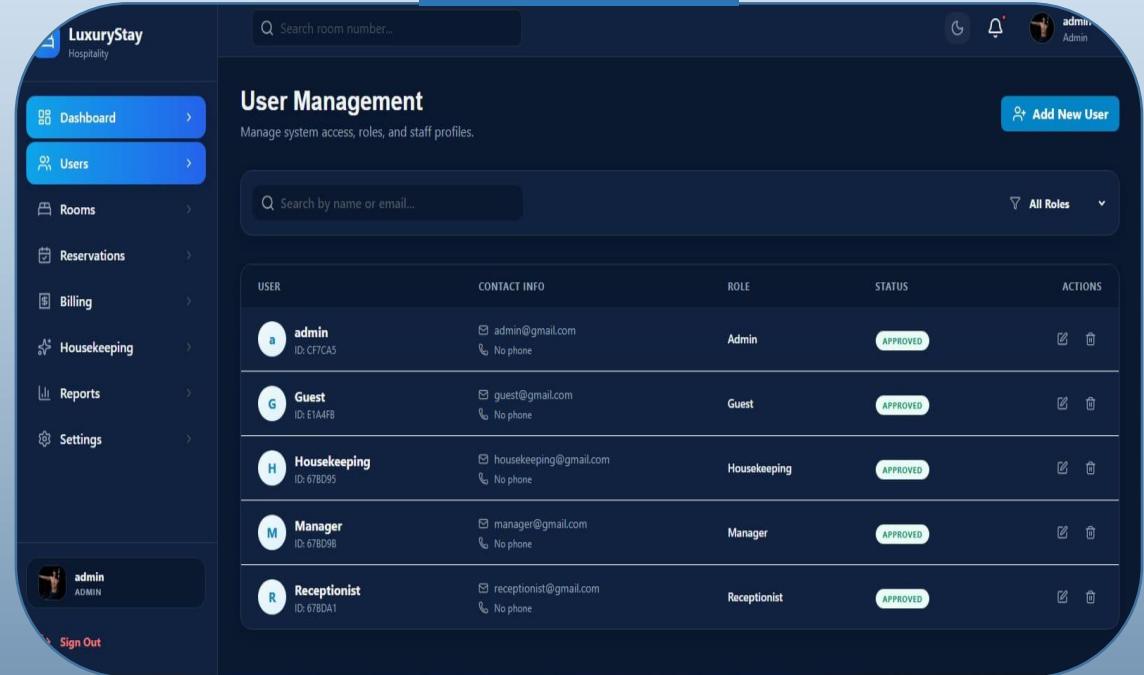


The screenshot shows the same 'SETTINGS' page as the first one, but in a light-themed version. The background is white, and the text and buttons are in shades of blue and grey. The layout and data points (room rates, tax, timing policies) are identical to the dark mode version.

This screen allows the admin to configure system-level settings such as application rules, policies, and operational configurations.

User Management

Dark Mode



LuxuryStay Hospitality

User Management
Manage system access, roles, and staff profiles.

USER	CONTACT INFO	ROLE	STATUS	ACTIONS
a admin ID: CFTC5	✉ admin@gmail.com 📞 No phone	Admin	APPROVED	
G Guest ID: E1A4FB	✉ guest@gmail.com 📞 No phone	Guest	APPROVED	
H Housekeeping ID: 67BD95	✉ housekeeping@gmail.com 📞 No phone	Housekeeping	APPROVED	
M Manager ID: 67BD96	✉ manager@gmail.com 📞 No phone	Manager	APPROVED	
R Receptionist ID: 67BD91	✉ receptionist@gmail.com 📞 No phone	Receptionist	APPROVED	

Add New User

All Roles

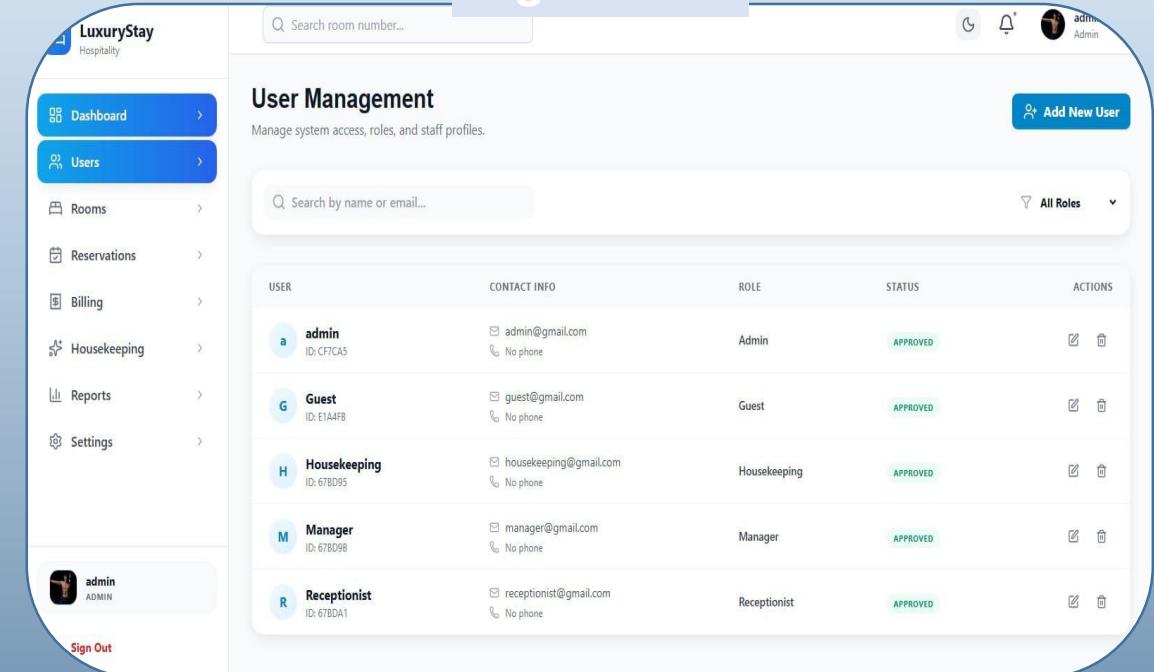
Search room number...
Search by name or email...

Dashboard
Users
Rooms
Reservations
Billing
Housekeeping
Reports
Settings

admin ADMIN

Sign Out

Light Mode



LuxuryStay Hospitality

User Management
Manage system access, roles, and staff profiles.

USER	CONTACT INFO	ROLE	STATUS	ACTIONS
a admin ID: CFTC5	✉ admin@gmail.com 📞 No phone	Admin	APPROVED	
G Guest ID: E1A4FB	✉ guest@gmail.com 📞 No phone	Guest	APPROVED	
H Housekeeping ID: 67BD95	✉ housekeeping@gmail.com 📞 No phone	Housekeeping	APPROVED	
M Manager ID: 67BD96	✉ manager@gmail.com 📞 No phone	Manager	APPROVED	
R Receptionist ID: 67BD91	✉ receptionist@gmail.com 📞 No phone	Receptionist	APPROVED	

Add New User

All Roles

Search room number...
Search by name or email...

Dashboard
Users
Rooms
Reservations
Billing
Housekeeping
Reports
Settings

admin ADMIN

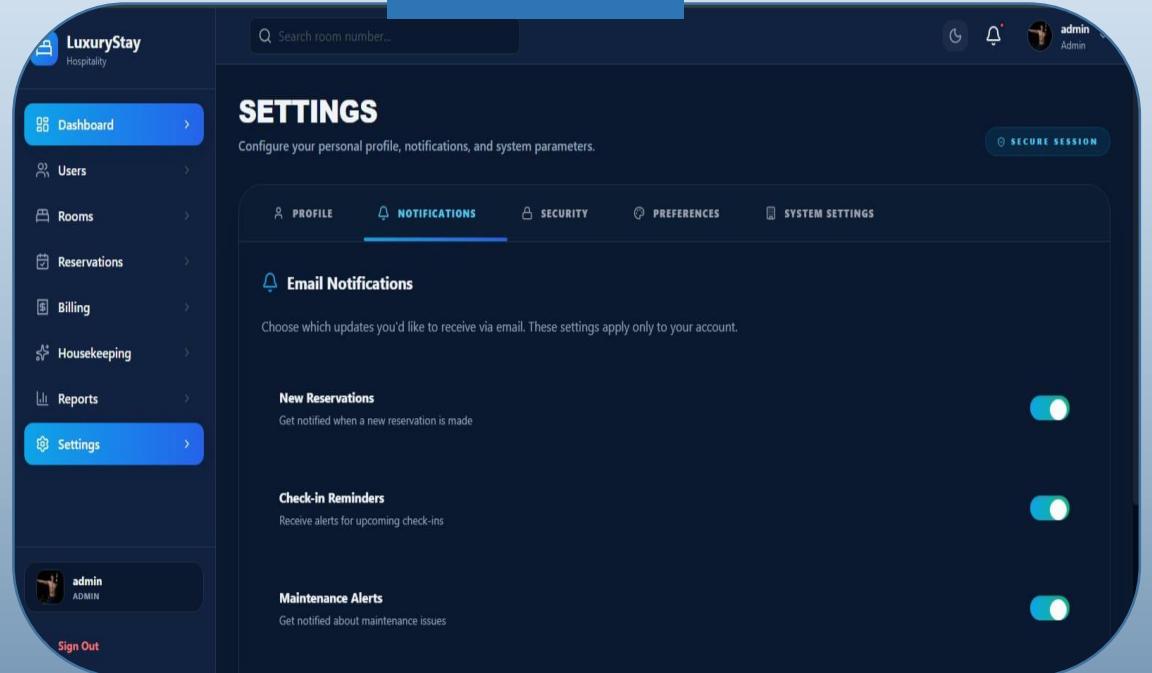
Sign Out

This screen allows the admin to manage user accounts, assign roles, and control access permissions using role-based access control.



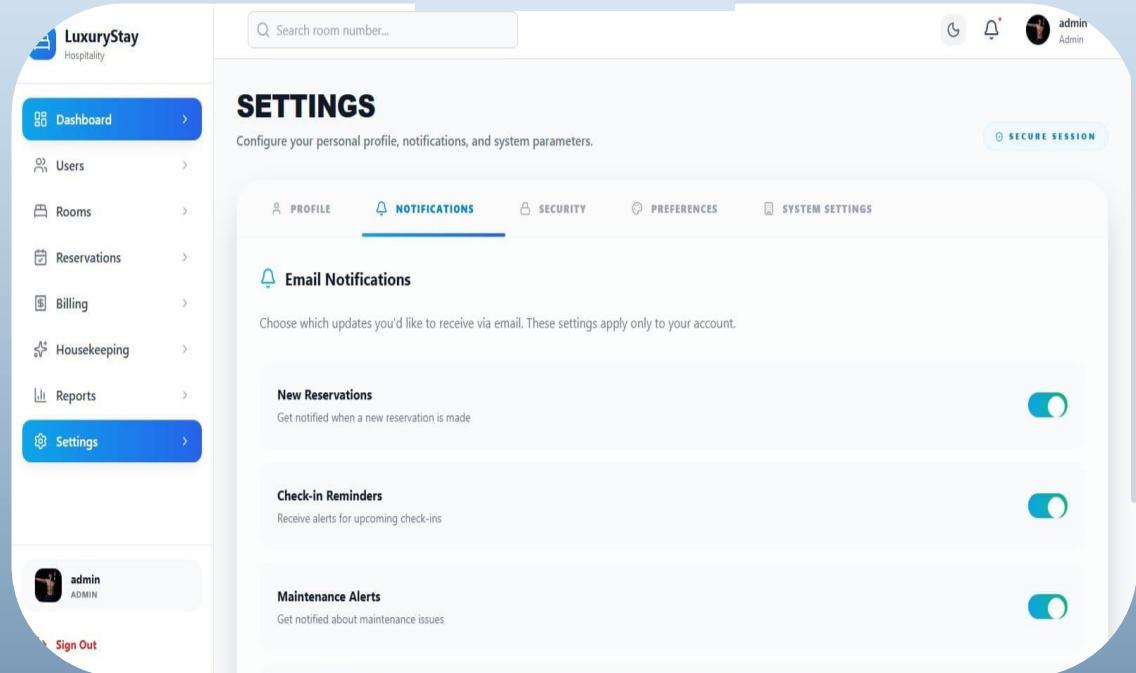
Notifications

Dark Mode



The screenshot shows the 'SETTINGS' page under the 'NOTIFICATIONS' tab. It includes sections for 'Email Notifications' (New Reservations, Check-in Reminders, Maintenance Alerts) and 'Push Notifications' (New Reservations, Check-in Reminders, Maintenance Alerts). Each section has a toggle switch to enable or disable notifications.

Light Mode



The screenshot shows the same 'SETTINGS' page under the 'NOTIFICATIONS' tab as the Dark Mode version. The interface is white with blue accents, and the toggle switches for notifications are visible in the 'ON' position.

The notification module provides real-time alerts such as new reservations, maintenance updates, and email notifications to ensure smooth hotel operations.



CONCLUSION

The LuxuryStay Hospitality – Hotel Management System successfully implements a complete web-based solution for hotel operations. The system automates key processes such as user management, room booking, billing, and notifications.

This project enhanced practical knowledge of MERN Stack technologies and provided real-world application development experience.



T H A N K Y O U

