

Project Documentation

Hostel Management System

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1. Introduction

1.1 Purpose

The **Hostel Management System** is designed to automate and streamline the operations of a hostel, including room allocation, guest management, bookings, check-ins/check-outs, and financial reporting. This system replaces manual record-keeping with a digital solution to improve efficiency, reduce errors, and enhance the guest experience.

1.2 Objectives

- Provide an **easy-to-use interface** for hostel administrators.
 - Automate **room bookings, check-ins, and check-outs**.
 - Maintain a **database of guests and rooms** for quick access.
 - Generate **reports on occupancy, revenue, and bookings**.
 - Improve **transparency and efficiency** in hostel operations.
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2. Key Features

2.1 Room Management

- View all rooms (available/occupied).
- Check room availability.
- Update room rates.

- Search for specific rooms.

2.2 Guest Management

- Add, update, and view guest details.
- Assign rooms to guests.
- Track guest history.

2.3 Booking System

- Create, modify, and cancel bookings.
- Generate booking confirmations.
- Track booking status (Active/Completed/Cancelled).

2.4 Check-In / Check-Out

- Automate guest check-ins with date tracking.
- Generate bills at checkout.
- Print receipts for guests.

2.5 Reports & Analytics

- **Occupancy reports** (current and historical).
- **Revenue tracking** (daily, weekly, monthly).
- **Guest statistics** (number of guests, bookings).

2.6 Settings & Configuration

- Modify room rates in bulk.
- View system information.
- Backup and restore data.

3. Why This Project?

3.1 Problem Statement

- Manual hostel management leads to **errors in bookings and billing**.
- Difficulty in **tracking room availability** in real-time.
- Lack of **automated financial reports**.
- **Time-consuming processes** for check-ins/check-outs.

3.2 Solution

- A **digital system** that automates hostel operations.
 - **Real-time tracking** of rooms and guests.
 - **Automated billing** and reporting.
 - **User-friendly interface** for staff and administrators.
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4. Technical Details

4.1 Programming Language

- **C++** (Object-Oriented Programming approach).

4.2 Data Structures Used

- **Vectors** (for storing rooms, guests, bookings).
- **Classes & Objects** (Room, Guest, Booking).

4.3 Key Functions

- **File Handling** (for data storage in future updates).
 - **Search & Sorting** (for quick guest/room lookup).
 - **Menu-Driven Interface** (easy navigation).
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5. Team Members

Name	Role	Contribution
Muhammad Haseeb	Project Lead	Core System Design, Room & Booking Management

Madiha Umer	Co-Developer	Guest Management, Check-In/Check-Out Logic
Aysha Iqbal	Reports Developer	Reporting Module,
Muhammad Shahzaib	Project Lead	Management

6. Future Enhancements

- **Database Integration** (SQL for permanent storage).
- **Graphical User Interface (GUI)** (using Qt or similar framework).
- **Online Booking System** (web-based integration).
- **Mobile App** for guests to check room availability.

7. Conclusion

This **Hostel Management System** simplifies hostel administration by automating bookings, guest tracking, and financial reporting. It is designed for **small to medium-sized hostels** and can be expanded for larger facilities.

Developed By:

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