

# **Hotel Management System**

Project Title: Hotel Management System

Course: Btech CSE

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## **2. Abstract**

This project implements a Hotel Management System in C, which allows users to manage hotel rooms efficiently. The system supports displaying room status, booking rooms with optional food inclusion, checking out guests, and tracking total revenue. It demonstrates arrays, modular programming, functions, and basic C programming concepts.

## **3. Problem Definition**

Managing hotel rooms manually can lead to errors in room availability, billing, and record-keeping. This project automates the process by providing:

- Room availability status
- Booking with customer details
- Checkout management
- Bill calculation including optional food

- Total revenue tracking

The goal is to simplify hotel management while providing a modular and maintainable system.

## 4. System Design

### Algorithm (Book Room)

1. Input room number
2. Check if room exists
3. Check if room is available
4. Input guest name
5. Input number of nights
6. Ask if food is included
7. Calculate bill (room + food if any)
8. Update room status and customer array
9. Display confirmation

## 5. Implementation Details

## Key Modules

- rooms.c – Initializes and displays room data
  - void init\_rooms();
  - void show\_rooms();
  - int find\_room\_index\_by\_number(int rno);
- booking.c – Books rooms and calculates bill
  - void book\_room(); // includes food option and billing
- checkout.c – Checks out rooms
  - void checkout\_room(); // frees room and confirms checkout
- main.c – User interface and menu
  - int main(); // calls modules based on user choice

## Topics Used:

- 2D Arrays
- Functions & Modular Programming
- Header Files (.h)
- Loops (do-while, for)
- Conditional Statements (if-else, switch-case)
- String handling (char arrays, strcpy, strncpy)

## 6. Testing & Results

### Test Cases:

Room No	Guest	Nights	Food Option	Expected Result
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101	Adeeb	2	Non-veg	Bill=6400
102	Alisha	1	Veg	Bill=2500
103	Aasna	3	Non-veg	Bill=13350

## Results:

Rooms correctly display status as “Occupied” or “Available”.

Bill calculations include food charges when selected.

Checkout updates room status and frees it for the next guest.

## 7. Conclusion & Future Work

### Conclusion:

The project successfully demonstrates a modular hotel management system using C programming concepts. It ensures accurate room management, booking, checkout, and revenue tracking.

### Future Work:

- Add persistent storage using file handling
- Support more room attributes and categories
- Add a graphical interface for better user interaction
- Include report generation for total revenue

## 8. References

1. The C Programming Language – Kernighan & Ritchie
2. GeeksforGeeks – C Programming Tutorials
3. GitHub repositories for modular C projects

