# PROJECT REPORT

## HOTEL MANAGEMENT SYSTEM

(CSE1021)

A11+A12+A13

By

ADARSH TIWARI
(25BAI10019)

ANTIMA JAIN
FACULTY


VIT®
BHOPAL

VIT Bhopal University
Kotrikalan - 466114,
Madhya Pradesh,
INDIA.

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# INTRODUCTION

The Sunrise Hotel Management System is a lightweight, console-based application developed in Python to automate basic hotel operations such as room booking, check-in, check-out, billing, and viewing current occupancy.

This project simulates the front-desk operations of a small boutique hotel named "Sunrise Hotel" having 10 rooms across three categories: Standard Single, Family Double, Deluxe, and Royal Suite. The system is designed to be user-friendly, menu-driven, and requires no external database — all data is stored in memory using Python dictionaries and lists.

## Problem Statement

Traditional manual handling of hotel bookings using registers leads to:

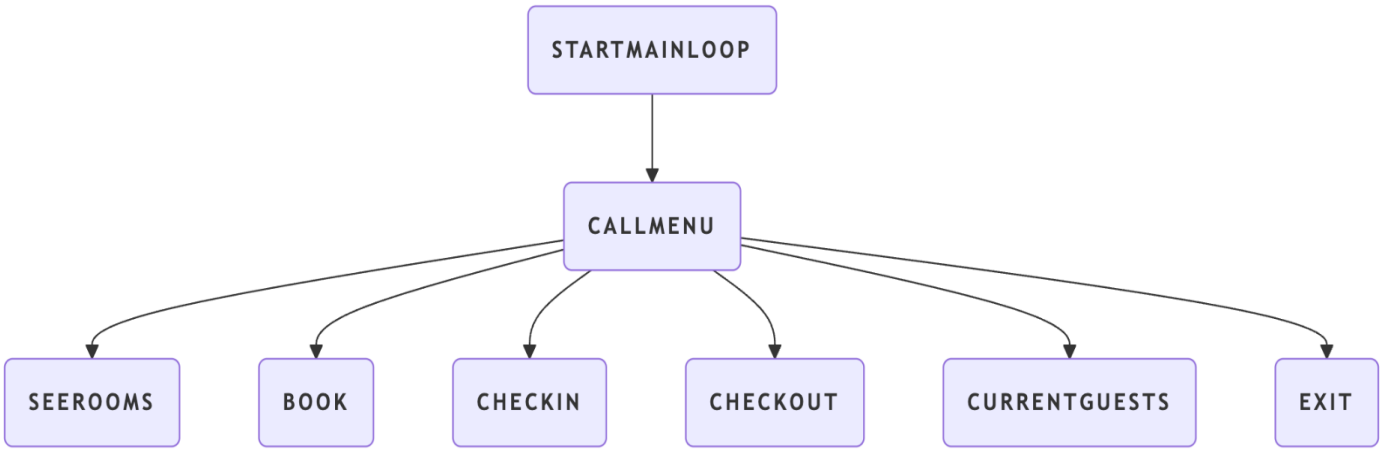
- Human errors in room allocation
- Difficulty tracking room status in real time
- Time-consuming check-in/check-out process
- No quick way to view current guests or generate bills
- Risk of double booking

There was a need for a simple, reliable, and fast system that allows reception staff to manage rooms and guests efficiently without requiring internet or complex software.

## Functional Requirements

- View all rooms with type, price, and status
- Book a room (name, phone, nights)
- Check-in to a booked room
- Prevent double booking

# System Architecture

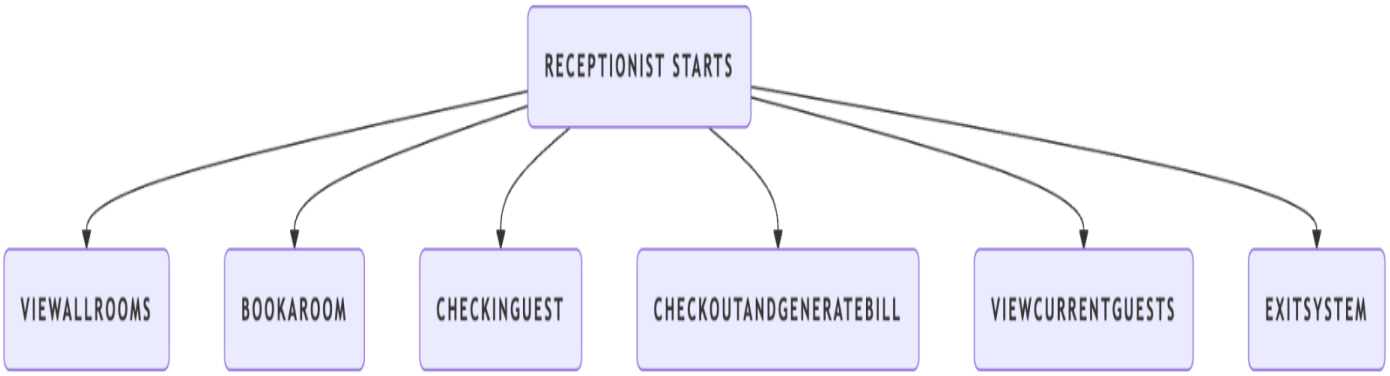



**Data Structures Used:**

**all_rooms** : List of room numbers
**price :** Dictionary → room → price
**room_type** : Dictionary → room → type
**status** : Dictionary → room → "Free" or Guest Name
**guests** : List of dictionaries (booking records)

No external libraries or database used , Pure Python standard library.

# Design Diagrams



# Implementation Details

- Dictionary and list manipulation
- Function modularization
- Input validation
- Formatted printing using f-strings and .center()
- Infinite loop with break condition
-

# SCREEHNSHOTS

```
   WHAT WOULD YOU LIKE TO DO?
   1. See all rooms
   2. Book a room
   3. Check-in
   4. Check-out & Pay bill
   5. See who is staying
   6. Exit
----------------------------------------
   Choose (1-6): 3

   Welcome back!
   Your room number please: 103
   No booking found for this room. Talk to reception
```

## Challenges Faced

- Matching guest record during checkout (name + room)
  Solved by looping through guests list and matching both

- Removing correct guest from list after checkout
  Used .remove(g) after finding correct dictionary

- Pretty printing alignment
  Used f-strings with padding (:<20)

## Future Enhancements

- File-based storage
- GUI Interface (Tkinter/PyQt)
- Admin login
- Multiple hotels support

# CODE SNAPSHOTS

```python

hotel = "Sunrise Hotel"
print("\n", "="*55)
print("        WELCOME TO SUNRISE HOTEL - Feel at Home!       ".center(55))
print("="*55, "\n")


all_rooms = [101,102,103,104, 201,202,203,204, 301,302]
price = {101:1200,102:1200,103:1200,104:1200,
         201:2200,202:2200,203:2200,204:2200,
         301:4500,302:8000}

room_type = {101:"Standard Single",102:"Standard Single",103:"Standard Single",104:"Standard Single",
             201:"Family Double",202:"Family Double",203:"Family Double",204:"Family Double",
             301:"Deluxe",302:"Royal Suite"}

status = {}
guests = []
for r in all_rooms:
    status[r] = "Free"

def menu():
    print("\n   WHAT WOULD YOU LIKE TO DO?")
    print("   1. See all rooms")
    print("   2. Book a room")
    print("   3. Check-in")
    print("   4. Check-out & Pay bill")
    print("   5. See who is staying")
    print("   6. Exit")
    print("-"*40)
```

```python
def see_rooms():
    print("\n   ROOM      TYPE                 PRICE     STATUS")
    print("   ------------------------------------------------")
    for r in all_rooms:
        who = status[r]
        if who == "Free":
            print(f"   {r}     {room_type[r]:<20} {price[r]:<8}  Available")
        else:
            print(f"   {r}     {room_type[r]:<20} {price[r]:<8}  Occupied by {who}")
    print()

def book():
    print("\n   Hello! Happy to have you here")
    name = input("   Your name please: ").title().strip()
    phone = input("   Phone number: ").strip()

    print("\n   These rooms are free right now:")
    free = []
    for r in all_rooms:
        if status[r] == "Free":
            print(f"   → Room {r}  |  {room_type[r]}  |  ₹{price[r]}/night")
            free.append(r)

    if not free:
        print("   Sorry yaar, full house today! Come tomorrow")
        return
```