import java.util.ArrayList;

import java.util.HashMap;

import java.util.Scanner;

class Room {

String category;

int roomNumber;

double pricePerNight;

boolean isAvailable;

public Room(String category, int roomNumber, double pricePerNight) {

this.category = category;

this.roomNumber = roomNumber;

this.pricePerNight = pricePerNight;

this.isAvailable = true;

}

}

class Reservation {

String guestName;

Room room;

int nights;

double totalAmount;

public Reservation(String guestName, Room room, int nights) {

this.guestName = guestName;

this.room = room;

this.nights = nights;

this.totalAmount = room.pricePerNight \* nights;

}

public void showReservationDetails() {

System.out.println("Reservation Details:");

System.out.println("Guest: " + guestName);

System.out.println("Room Number: " + room.roomNumber + " (" + room.category + ")");

System.out.println("Nights: " + nights);

System.out.println("Total Amount: $" + totalAmount);

}

}

class Hotel {

ArrayList<Room> rooms = new ArrayList<>();

ArrayList<Reservation> reservations = new ArrayList<>();

public Hotel() {

rooms.add(new Room("Single", 101, 100));

rooms.add(new Room("Double", 102, 150));

rooms.add(new Room("Suite", 201, 300));

}

public void searchAvailableRooms() {

System.out.println("Available Rooms:");

for (Room room : rooms) {

if (room.isAvailable) {

System.out.println("Room " + room.roomNumber + " (" + room.category + ") - $" + room.pricePerNight + " per night");

}

}

}

public void makeReservation(String guestName, int roomNumber, int nights) {

for (Room room : rooms) {

if (room.roomNumber == roomNumber && room.isAvailable) {

room.isAvailable = false;

Reservation reservation = new Reservation(guestName, room, nights);

reservations.add(reservation);

System.out.println("Reservation confirmed!");

reservation.showReservationDetails();

return;

}

}

System.out.println("Room not available.");

}

public void viewAllReservations() {

System.out.println("All Reservations:");

for (Reservation reservation : reservations) {

reservation.showReservationDetails();

System.out.println();

}

}

}

public class HotelReservationSystem {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

Hotel hotel = new Hotel();

while (true) {

System.out.println("\n1. Search Available Rooms\n2. Make Reservation\n3. View Reservations\n4. Exit");

System.out.print("Choose an option: ");

int choice = scanner.nextInt();

switch (choice) {

case 1:

hotel.searchAvailableRooms();

break;

case 2:

System.out.print("Enter guest name: ");

String guestName = scanner.next();

System.out.print("Enter room number: ");

int roomNumber = scanner.nextInt();

System.out.print("Enter number of nights: ");

int nights = scanner.nextInt();

hotel.makeReservation(guestName, roomNumber, nights);

break;

case 3:

hotel.viewAllReservations();

break;

case 4:

System.out.println("Exiting...");

scanner.close();

return;

default:

System.out.println("Invalid option.");

}

}

}

}