import java.util.Scanner;

public class ReservationSystem {

private static final int MAX\_CAPACITY = 100;

private boolean[] seats;

public ReservationSystem() {

seats = new boolean[MAX\_CAPACITY];

}

public void reserveSeat(int seatNumber) {

if (seatNumber >= 1 && seatNumber <= MAX\_CAPACITY) {

if (!seats[seatNumber - 1]) {

seats[seatNumber - 1] = true;

System.out.println("Seat " + seatNumber + " has been reserved.");

} else {

System.out.println("Seat " + seatNumber + " is already reserved.");

}

} else {

System.out.println("Invalid seat number.");

}

}

public void cancelReservation(int seatNumber) {

if (seatNumber >= 1 && seatNumber <= MAX\_CAPACITY) {

if (seats[seatNumber - 1]) {

seats[seatNumber - 1] = false;

System.out.println("Reservation for seat " + seatNumber + " has been canceled.");

} else {

System.out.println("Seat " + seatNumber + " is not reserved.");

}

} else {

System.out.println("Invalid seat number.");

}

}

public void displaySeatStatus(int seatNumber) {

if (seatNumber >= 1 && seatNumber <= MAX\_CAPACITY) {

if (seats[seatNumber - 1]) {

System.out.println("Seat " + seatNumber + " is reserved.");

} else {

System.out.println("Seat " + seatNumber + " is available.");

}

} else {

System.out.println("Invalid seat number.");

}

}

public void displayAvailableSeats() {

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

for (int i = 0; i < MAX\_CAPACITY; i++) {

if (!seats[i]) {

System.out.print((i + 1) + " ");

}

}

System.out.println();

}

public static void main(String[] args) {

ReservationSystem reservationSystem = new ReservationSystem();

Scanner scanner = new Scanner(System.in);

int choice;

do {

System.out.println("\n=== Online Reservation System ===");

System.out.println("1. Reserve a seat");

System.out.println("2. Cancel a reservation");

System.out.println("3. Check seat status");

System.out.println("4. Display available seats");

System.out.println("0. Exit");

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

switch (choice) {

case 1:

System.out.print("Enter the seat number to reserve: ");

int reserveSeatNumber = scanner.nextInt();

reservationSystem.reserveSeat(reserveSeatNumber);

break;

case 2:

System.out.print("Enter the seat number to cancel reservation: ");

int cancelSeatNumber = scanner.nextInt();

reservationSystem.cancelReservation(cancelSeatNumber);

break;

case 3:

System.out.print("Enter the seat number to check status: ");

int checkSeatNumber = scanner.nextInt();

reservationSystem.displaySeatStatus(checkSeatNumber);

break;

case 4:

reservationSystem.displayAvailableSeats();

break;

case 0:

System.out.println("Thank you for using the online reservation system. Goodbye!");

break;

default:

System.out.println("Invalid choice. Please try again.");

break;

}

} while (choice != 0);

scanner.close();

}

}