

BUS RESERVATION SYSTEM

Code:

```
2 package com.mycompany.busreservationsystem;
3
4 import java.util.*;
5 public class BusReservationSystem {
6
7     static boolean[] seats = new boolean[40]; // 40 seats, false = available
8     public static void main(String[] args) {
9         Scanner sc = new Scanner(System.in);
10        OUTER:
11        while (true) {
12            System.out.println("\n--- Bus Reservation System ---");
13            System.out.println("1. View Seats");
14            System.out.println("2. Book Seat");
15            System.out.println("3. Cancel Booking");
16            System.out.println("4. Exit");
17            System.out.print("Enter your choice: ");
18            try {
19                int choice = sc.nextInt();
20                switch (choice) {
21                    case 1:
22                        viewSeats();
23                        break;
24                    case 2:
25                        bookSeat(sc);
26                        break;
27                    case 3:
28                        cancelSeat(sc);
29                        break;
30
31                    case 4:
32                        System.out.println("Exiting... Thank you!");
33                        break OUTER;
34                    default:
35                        System.out.println("Please enter a number from 1 to 4.");
36                        break;
37                }
38            } catch (Exception e) {
39                System.out.println("Invalid input! Please enter numbers only.");
40                sc.nextLine(); // clear input
41            }
42        }
43        static void viewSeats() {
44            System.out.println("Seat Availability (0 = Available, 1 = Booked):");
45            for (int i = 0; i < 40; i++) {
46                if (seats[i]) {
47                    System.out.print("1 ");
48                } else {
49                    System.out.print("0 ");
50                }
51                if ((i + 1) % 10 == 0) {
52                    System.out.println();
53                }
54            }
55        }
56        static void bookSeat(Scanner sc) {
57            System.out.print("Enter seat number to book (1-40): ");
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    try {
        int seatNum = sc.nextInt();
        if (seatNum < 1 || seatNum > 40) {
            System.out.println("Invalid seat number.");
        } else if (seats[seatNum - 1]) {
            System.out.println("Seat already booked.");
        } else {
            seats[seatNum - 1] = true;
            System.out.println("Seat " + seatNum + " booked successfully.");
        }
    } catch (Exception e) {
        System.out.println("Please enter a valid number.");
        sc.nextLine(); // clear wrong input
    }
}

static void cancelSeat(Scanner sc) {
    System.out.print("Enter seat number to cancel (1-40): ");
    try {
        int seatNum = sc.nextInt();
        if (seatNum < 1 || seatNum > 40) {
            System.out.println("Invalid seat number.");
        } else if (!seats[seatNum - 1]) {
            System.out.println("Seat is not booked.");
        } else {
            seats[seatNum - 1] = false;
            System.out.println("Seat " + seatNum + " booking cancelled.");
        }
    } catch (Exception e) {
        System.out.println("Please enter a valid number.");
        sc.nextLine(); // clear wrong input
    }
}
}

```

Output:

```
--- Bus Reservation System ---
1. View Seats
2. Book Seat
3. Cancel Booking
4. Exit
Enter your choice: 2
Enter seat number to book (1-40): 35
Seat 35 booked successfully.
```

```
--- Bus Reservation System ---
1. View Seats
2. Book Seat
3. Cancel Booking
4. Exit
Enter your choice: 2
Enter seat number to book (1-40): 45
Invalid seat number.
```

```
--- Bus Reservation System ---
1. View Seats
2. Book Seat
3. Cancel Booking
4. Exit
Enter your choice: 2
Enter seat number to book (1-40): 10
Seat 10 booked successfully.
```

```
--- Bus Reservation System ---
1. View Seats
2. Book Seat
3. Cancel Booking
4. Exit
Enter your choice: 1
Seat Availability (0 = Available, 1 = Booked):
0 0 0 0 0 0 0 0 0 1
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0
```

```
--- Bus Reservation System ---
1. View Seats
2. Book Seat
3. Cancel Booking
4. Exit
Enter your choice: 4
Exiting... Thank you!
```