

```

1 import java.util.ArrayList;
2
3
4
5 class Flight {
6     int flightId;
7     String source, destination;
8     int seats;
9
10    Flight(int flightId, String source, String destination, int seats) {
11        this.flightId = flightId;
12        this.source = source;
13        this.destination = destination;
14        this.seats = seats;
15    }
16
17    @Override
18    public String toString() {
19        return "Flight ID: " + flightId + ", Source: " + source + ", Destination: " +
20    }
21 }
22
23 class Booking {
24     int bookingId, userId, flightId;
25
26     Booking(int bookingId, int userId, int flightId) {
27         this.bookingId = bookingId;
28         this.userId = userId;
29         this.flightId = flightId;
30     }
31
32     @Override
33     public String toString() {
34         return "Booking ID: " + bookingId + ", User ID: " + userId + ", Flight ID: " + flightId;
35     }
36 }
37
38 public class AirlineSystem {
39     private List<Flight> flights = new ArrayList<>();
40     private List<Booking> bookings = new ArrayList<>();
41     private int bookingIdCounter = 1;
42
43     void addFlight Flight flight) {
44         flights.add(flight);
45     }
46
47     void searchFlights(String source, String destination) {
48         for Flight flight : flights) {
49             if (flight.source.equalsIgnoreCase(source) &&
50                 System.out.println(flight);
51         }
52     }
53 }
54
55 void bookFlight(int userId, int flightId) {
56     for Flight flight : flights) {
57         if (flight.flightId == flightId && flight.seats > 0) {
58             bookings.add(new Booking(bookingIdCounter++, userId, flightId));
59             flight.seats--;
60             System.out.println("Booking successful! Booking ID: " + (bookingIdCounter - 1));
61             return;
62         }
63     }

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64         System.out.println("Booking failed. No seats available or invalid flight ID.");
65     }
66
67     void viewBookings() {
68         for (Booking booking : bookings) {
69             System.out.println(booking);
70         }
71     }
72
73     public static void main(String[] args) {
74         AirlineSystem system = new AirlineSystem();
75         Scanner scanner = new Scanner(System.in);
76
77         // Add sample flights
78         system.addFlight(new Flight(1, "New York", "London", 100));
79         system.addFlight(new Flight(2, "London", "Paris", 50));
80
81         // Menu
82         while (true) {
83             System.out.println("\n1. Search Flights\n2. Book Flight\n3. View Bookings\n4.
84             System.out.print("Choose an option: ");
85
86             try {
87                 int choice = scanner.nextInt();
88                 scanner.nextLine(); // Consume the newline character
89
90                 switch (choice) {
91                     case 1:
92                         System.out.print("Enter source: ");
93                         String source = scanner.nextLine();
94                         System.out.print("Enter destination: ");
95                         String destination = scanner.nextLine();
96                         system.searchFlights(source, destination);
97                         break;
98
99                     case 2:
100                        System.out.print("Enter User ID: ");
101                        int userId = scanner.nextInt();
102                        System.out.print("Enter Flight ID: ");
103                        int flightId = scanner.nextInt();
104                        system.bookFlight(userId, flightId);
105                        break;
106
107                     case 3:
108                         system.viewBookings();
109                         break;
110
111                     case 4:
112                         System.out.println("Exiting...");
113                         return;
114
115                     default:
116                         System.out.println("Invalid choice. Try again.");
117                 }
118             } catch (java.util.InputMismatchException e) {
119                 System.out.println("Invalid input. Please enter a number.");
120                 scanner.nextLine(); // Clear the invalid input
121             }
122         }
123     }
124 }

```