

JAVA PROJECT

Project Name:

Winglet Wanderlust: An Aviation Booking & Management System

Done By:

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2nd Year -AI-DS

AIM:

To build a secure and user-friendly aviation booking system that allows passengers to book, cancel, and manage flights with ease. The system supports one-way and two-way journeys, offers personalized services like food and wheelchair assistance, applies loyalty discounts, and ensures strict user validation. With seat exchange and real-time billing, it delivers a smooth and reliable travel experience.

FEATURES:

Booking System

- **One-Way & Two-Way Booking Options** Supports both single-leg and round-trip reservations with independent seat selection.
- **Seat Class Selection** Choose from Economy, Premium Economy, First Class, and Business — each with distinct pricing.
- **Destination Mapping** Flights from Hyderabad to major cities like Mumbai, Delhi, Chennai, Bengaluru, and Kolkata.
- **Dynamic Pricing Engine** Calculates total fare based on seat class, destination, and optional services.

Discounts & Loyalty

- **Frequent Flyer Discount** 20% off for users with prior bookings — automatically applied.
- **Two-Way Journey Discount** Additional 10% off on combined fare for round trips.

Optional Services

- **Food Selection** Veg and Non-Veg menus with itemized pricing and real-time bill updates.
- **Wheelchair Assistance** ₹150 add-on for passengers requiring mobility support.

Seat Management

- **Seat Availability Viewer** Displays real-time seat status for any travel date.
- **Seat Exchange Feature** Allows users to change their booked seat with recalculated pricing and preserved services.

Cancellation System

- **Secure Cancellation** Only the original passenger can cancel their booking.
- **Refund Calculation** 20% cancellation fee, 80% refund issued.
- **Cancellation Bill** Detailed breakdown of refund and charges.

User History & Tracking

- **Action Logging** Tracks all user actions: bookings, cancellations, add-ons, seat changes.
- **Timestamped Records** Each entry includes ticket ID, seat number, class, destination, and total cost.

Safety & Validation

- **Strict User Authentication** Prevents unauthorized access or changes to bookings.
- **Input Validation** Ensures correct formats for dates, phone numbers, and seat numbers.

Folder Structure:

WingletWanderlust/

```
|
|— bin/                                # Compiled .class files
|   |— BillPrinter.class
|   |— BookingService.class
|   |— CancellationService.class
|   |— MainMenu.class
|   |— Seat.class
|
|— src/                                # Source code (.java files)
|   |— BillPrinter.java
|   |— BookingService.java
|   |— CancellationService.java
|   |— MainMenu.java
|   |— Seat.java
```

OUTPUTS:

≥**Start the program,(booking seat)**

```

PS E:\MLSA pro\FBS> javac -d bin src\*.java
>>
PS E:\MLSA pro\FBS> java -cp bin MainMenu
>>

===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 1

--- Book Seat ---
1. 1-Way
2. 2-Way
Enter choice: 1
Enter your details:
Name: spurthi
DOB (dd-MM-yyyy): 11
? Invalid DOB format!
DOB (dd-MM-yyyy): 11-05-2007
Phone Number (10 digits): 123456789
? Invalid phone number!
Phone Number (10 digits): 1234567890
Enter travel date (dd-MM-yyyy): 10-9-2025
? Invalid date! You can only book for future dates.
Enter travel date (dd-MM-yyyy): 11-10-2025

```

≥ We can not book seat with today's and before date.

```

Select Destination from Hyderabad:
1. Mumbai (Price: 500)
2. Delhi (Price: 700)
3. Chennai (Price: 400)
4. Bengaluru (Price: 450)
5. Kolkata (Price: 800)
Enter destination number: 1

? Seat Status for 11-10-2025:
Seat 1 -> Available (Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
Enter seat number to book: 1

--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 1
Select Food Type:
1. Veg
2. Non-Veg
Choice: 1

```

➤After every order,bill will be printed and ask if any requirements needed in particular section until we select to exit from that section.

```
Veg Menu:
1. Mushroom Biryani - 200
2. Ulavacharu Biryani - 150
3. Veg Pulav - 100
4. Paneer Tikka - 300
5. Jackfruit Pulav - 250
Select item: 1
? Food added successfully: Mushroom Biryani

----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1001
Date       : 11-10-2025
Source     : Hyderabad
Destination : Mumbai (Price: 500)
Seat No    : 1 (Economy)
Seat Price : 500
Food       : Mushroom Biryani (200)
-----
Total      : 1200
-----

--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 2
Wheelchair Service Price: 150
? Wheelchair service added.
```

```
----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1001
Date       : 11-10-2025
Source     : Hyderabad
Destination : Mumbai (Price: 500)
Seat No    : 1 (Economy)
Seat Price : 500
Food       : Mushroom Biryani (200)
Wheelchair  : 150
-----
Total      : 1350
-----

--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 3
```

➤Here ,up on ordering 2 assistances,Total bill is printed.

```
Enter your choice: 3

? Seat booked successfully!

----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1001
Date       : 11-10-2025
Source     : Hyderabad
Destination : Mumbai (Price: 500)
Seat No    : 1 (Economy)
Seat Price : 500
Food       : Mushroom Biryani (200)
Wheelchair : 150
-----
Total      : 1350
-----

===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 3
Enter date to check availability (dd-MM-yyyy): 11-10-2025
```

>Now,Checking wheather seat is bookied or not on respected date only?Wow it happened!

```
? Seat Status for 11-10-2025:
Seat 1 -> Booked (TicketID: T1001, Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
```

```
===== Flight Booking System =====
```

1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit

```
Enter your choice: 3
```

```
Enter date to check availability (dd-MM-yyyy): 12-10-2025
```

```
? Seat Status for 12-10-2025:
Seat 1 -> Available (Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
```

≥Now,Let's see 2-way booking features!

```
===== Flight Booking System =====
```

1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit

```
Enter your choice: 1
```

```
--- Book Seat ---
```

1. 1-Way
2. 2-Way

```
Enter choice: 2
```

```
Enter your details for DEPARTURE trip:
```

```
Name: spurthi
```

```
DOB (dd-MM-yyyy): 11-05-2007
```

```
Phone Number (10 digits): 1234567890
```

```
? You're eligible for a 20% frequent user discount on both legs!
```

```
Departure Trip:
```

```
Enter departure date (dd-MM-yyyy): 11-10-2025
```

```
Select Destination from Hyderabad:
```

1. Mumbai (Price: 500)
2. Delhi (Price: 700)
3. Chennai (Price: 400)
4. Bengaluru (Price: 450)
5. Kolkata (Price: 800)

```
Enter destination number: 2
```

```

? Seat Status for 11-10-2025:
Seat 1 -> Booked (TicketID: T1001, Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
Enter seat number to book for Departure: 5

--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 1
Select Food Type:
1. Veg
2. Non-Veg
Choice: 2
Non-Veg Menu:
1. Chicken - 200
2. Mutton - 500
3. Fish - 450
4. Prawn - 550
5. Crab - 600
Select item: 2
? Food added successfully: Mutton

```

≥ Here, we can see that the customer is frequent user.

```

----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1002
Date       : 11-10-2025
Source     : Hyderabad
Destination : Delhi (Price: 700)
Seat No    : 5 (Premium Economy)
Seat Price : 1000
Discount   : -200 (Frequent User 20%)
Food       : Mutton (500)
-----
Total      : 2000
-----

--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 3

--- Return Trip Details ---
Enter return date (dd-MM-yyyy): 12-10-2025

```

```

? Seat Status for 12-10-2025:
Seat 1 -> Available (Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
Enter seat number to book for Return: 1

--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 3

? 2-Way Booking Successful! Final Bill:

```

>Frequent user discount applies on entire bill of person and for 2-way booking also discount provided even for fresher.

```

--- Departure Trip ---

----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1002
Date       : 11-10-2025
Source     : Hyderabad
Destination : Delhi (Price: 700)
Seat No    : 5 (Premium Economy)
Seat Price : 1000
Discount   : -200 (Frequent User 20%)
Food       : Mutton (500)
-----
Total      : 2000
-----

```

```

--- Return Trip ---

----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1003
Date       : 12-10-2025
Source     : Delhi
Destination : Hyderabad (Price: 700)
Seat No    : 1 (Economy)
Seat Price : 500
Discount   : -100 (Frequent User 20%)
-----
Total      : 1100
-----

Subtotal (Before 2-Way Discount): 3100
2-Way Discount (10%): -310.00
Grand Total (After All Discounts): 2790.00
-----

===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: █

```


>Customer Viewing history of his bookings and bill

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 5
Enter your name to view history: so
? No history found for so!

===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 5
Enter your name to view history: spurthi
```

```
? Booking & Cancellation History:
1. Fri Oct 10 14:55:25 IST 2025 -> FOOD ADDED | TicketID: T1001, Seat: 1, Class: Economy, Destination: Mumbai, Date: 11-10-2025, Total: 1200
2. Fri Oct 10 14:55:33 IST 2025 -> WHEELCHAIR ADDED | TicketID: T1001, Seat: 1, Class: Economy, Destination: Mumbai, Date: 11-10-2025, Total: 1350
3. Fri Oct 10 14:55:36 IST 2025 -> BOOKED | TicketID: T1001, Seat: 1, Class: Economy, Destination: Mumbai, Date: 11-10-2025, Total: 1350
4. Fri Oct 10 15:06:40 IST 2025 -> FOOD ADDED | TicketID: T1002, Seat: 5, Class: Premium Economy, Destination: Delhi, Date: 11-10-2025, Total: 2000
5. Fri Oct 10 15:06:55 IST 2025 -> BOOKED (Departure) | TicketID: T1002, Seat: 5, Class: Premium Economy, Destination: Delhi, Date: 11-10-2025, Total: 2000
6. Fri Oct 10 15:06:55 IST 2025 -> BOOKED (Return) | TicketID: T1003, Seat: 1, Class: Economy, Destination: Hyderabad, Date: 12-10-2025, Total: 1100
```

>Customer,when he want to cancel ticket.

>Only he can cancel if he books,and

>An excellent authentication here is,only particular person can cancel his ticket not other who have booked.

>Upon cancellation,20% will be taken off and returns 80% from management side.

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 2
Enter your name to cancel: sonu
Enter booking date of the seat to cancel (dd-MM-yyyy): 11-10-2025
Enter seat number to cancel: 1
? You don't have access to cancel this seat!
```

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 2
Enter your name to cancel: spurthi
Enter booking date of the seat to cancel (dd-MM-yyyy): 11-10-2025
Enter seat number to cancel: 1
```

```
? Seat 1 cancelled successfully!
```

```
----- CANCELLATION BILL -----
```

```
Name       : spurthi
TicketID   : T1001
Date       : 11-10-2025
Seat No    : 1 (Economy)
Original   : 1350
Cancellation(20%) : 270.0
Refund     : 1080.0
-----
```

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: █
```

≥Changing seat,can be possible only when he books seat,by clearly verifying credentials

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 4
Enter your booking date (dd-MM-yyyy): 11-10-2025
Enter your name to change seat: spu
Enter your current seat number: 5
? No booking found under your name at seat 5
```

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 4
Enter your booking date (dd-MM-yyyy): 11-10-2025
Enter your name to change seat: spurthi
Enter your current seat number: 5
```

```
? Seat Status for 11-10-2025:
Seat 1 -> Available (Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Booked (TicketID: T1002, Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
Enter new seat number to change to: 9
? Seat changed successfully from 5 to 9
```

```
----- BOOKING BILL -----
Name       : spurthi
TicketID   : T1002
Date       : 11-10-2025
Source     : Hyderabad
Destination : Delhi (Price: 700)
Seat No    : 9 (Business)
Seat Price : 2000
Discount   : -200 (Frequent User 20%)
Food       : Mutton (500)
-----
Total      : 3200
-----
```

```
===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 1

--- Book Seat ---
1. 1-Way
2. 2-Way
Enter choice: 1
Enter your details:
Name: sam
DOB (dd-MM-yyyy): 1-2-2009
Phone Number (10 digits): 1029384756
Enter travel date (dd-MM-yyyy): 12-10-2025

Select Destination from Hyderabad:
1. Mumbai (Price: 500)
2. Delhi (Price: 700)
3. Chennai (Price: 400)
4. Bengaluru (Price: 450)
5. Kolkata (Price: 800)
Enter destination number: 4
```

```
? Seat Status for 12-10-2025:
Seat 1 -> Booked (TicketID: T1003, Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
Enter seat number to book: 1
? Seat already booked!
```

```
? Seat Status for 12-10-2025:
Seat 1 -> Booked (TicketID: T1003, Class: Economy, Price: 500)
Seat 2 -> Available (Class: Economy, Price: 500)
Seat 3 -> Available (Class: Economy, Price: 500)
Seat 4 -> Available (Class: Premium Economy, Price: 1000)
Seat 5 -> Available (Class: Premium Economy, Price: 1000)
Seat 6 -> Available (Class: Premium Economy, Price: 1000)
Seat 7 -> Available (Class: First Class, Price: 1500)
Seat 8 -> Available (Class: First Class, Price: 1500)
Seat 9 -> Available (Class: Business, Price: 2000)
Seat 10 -> Available (Class: Business, Price: 2000)
Enter seat number to book: 2
```

```
--- Special Assistance Menu ---
1. Food
2. Wheelchair Service
3. Exit Assistance
Enter your choice: 3
```

```
? Seat booked successfully!

----- BOOKING BILL -----
Name       : sam
TicketID   : T1004
Date       : 12-10-2025
Source     : Hyderabad
Destination : Bengaluru (Price: 450)
Seat No    : 2 (Economy)
Seat Price : 500
-----
Total      : 950
-----

===== Flight Booking System =====
1. Book Seat
2. Cancel Seat
3. Check Available Seats
4. Change Seat
5. My History
6. Exit
Enter your choice: 6
Exiting... Thank you!
PS E:\MLSA pro\FBS> █
```

>This is the working of the Project,Thank you!!