

## Q1 Flight Ticket Booking

An airline operates multiple flights to different locations. You need to write a basic ticket booking program for their flights.

### ***Assumptions***

1. There are multiple flights each identified by the unique names as follows,

*Flight-A112-Chennai-Mumbai*

*Flight-A113-Chennai-Kolkata*

*Flight-A114-Chennai-Delhi ... etc.,*

A folder contains all the file details with the above file names which will be considered as input to your program.

2. Flight seats are categorized under two types namely Economy and Business Class.
  - a. The number of seating arrangements and the number of seats in business class and economy class should be given as file input.
  - b. The file name will have a flight number.
  - c. For example, Lets say file *Flight-A112-Chennai-Mumbai.txt*, here A112 is the flight number and it has the details as follows,  
Business : {2, 3, 2}, 12  
Economy : {3, 4, 4}, 20

This means, flight A112 has

12 rows of business class tickets with seating arrangements like

WA AMA AW

WA AMA AW

..... 9 more rows

20 rows of Economy class tickets with seating arrangements like

WMA AMMA AMMW

WMA AMMA AMMW

.... 17 more rows

W - Window

M - Middle

A - Aisle

(Your program should calculate this arrangement based on the input from each file)

3. Base price of an Economy Class ticket is INR1000 and for Business Class it is INR 2000.
4. Aisle and Window seats will cost INR 100 more
5. In a single booking, any number of tickets on a single class shall be booked.
6. Each booking should be identified by a unique auto generated BookingID. This Id is unique across all flights.
7. Surge pricing : After each successful booking, price of the ticket increases by INR 100 for Economy class and INR 200 for Business class on successive booking irrespective of any number of cancellations in between. The price increase is per flight basis
8. Along with each booking, provide an option to book meal at an additional cost of 200 per passenger (Meal shall be ordered either for all passengers or none in a single booking)
9. Cancellation is allowed for any given BookingID for a flat cancellation fee of Rs 200 per seat.

Your program should handle the following cases and display results appropriately

1. List flight details
  - a. List down no. of flights and the name of flights from the folder
2. Handle booking
  - a. Search flights
    - i). Filter flights from given location (input as source and destination)
    - ii). Filter flights who is having business class alone
  - b. The user can choose the seats. Seat number is represented as Row\_Column. Example 5\_F represents 5th row, 6th Column
3. Handle cancellation
  - a. Mention the seat to be canceled for the specific Booking ID
4. Print all available seats for each flight
5. Print seat numbers for which meal is ordered for each flight
6. Print individual and flight summary for all the bookings
  - a. **Input : BookingID**  
**output : Passenger Details (with seat and Meal preference) & Flight details. (Flight no)**

