ICS 4U **Final Project – Airline Booking System**

Fly-by-Night Airlines is a small air transportation company. They own several planes and fly regular trips to many of the smaller airports in the province. All flights have ten seats and accommodate up to ten passengers per trip.

You have been hired by Fly-By-Night Airlines to design a program that will help them keep track of their seat sales for each flight. You will need to:

1. Develop a database to hold the seat information for each flight. This database will need to contain:
   - The seat number
   - Whether the seat has been reserved or is still available for sale
   - If the seat has been sold, the airline will need the contact information for the customer (e.g. name, address, phone number).

2. Create a structured, menu-driven C++ program that will maintain the database. This should include modules for ticket sales, reservation cancellations, and retrieval of flight information. The program could be visual using a GUI or text-based using the console.

3. When a customer requests a ticket for a given flight, your program will need to access the database for the flight and then:
   - Display the seating information for that flight.
   - The ticket attendant could then offer the customer their choice of available seating and input the customer's seat choice.
   - The program will verify that the seat is available and then prompt the attendant to enter the customer's contact information. The customers' information should be ideally saved as an object.
   - The program must then update the database to reflect the ticket sale.

4. If a customer calls to cancel his/her reservation, your program will allow the ticket attendant to find the customer's seat assignment and delete the reservation, making the seat available for sale.

5. In some cases, it will be necessary for the airline to cancel an entire flight. In this case, the program should allow the airline to print the contact information for all of the passengers who have reserved seats on this flight. This will allow the ticket attendant to call each customer and offer them a refund or new seat booking on a later flight.

6. At flight time, your program should allow the ticket attendant to print out the passenger manifest, sorted in both seat and alphabetic order. The display should show the name and contact information for every passenger.

Program requirements:

1. All code must be clearly documented.
2. All code must be neatly formatted.
3. The program should be organized using *Objects.*
4. The program should make use of all programming concepts covered in the course.
5. The program should be as crash-proof as possible.
6. You will also create a brief *user guide* to instruct the ticket attendant on how to use the software.

Grading:

In addition to the program, you will complete an interview with the teacher where you will both demonstrate the use of your program and be asked questions about your code. This will represent a significant portion of your mark for the project. In addition, the product itself will be considered, along with your implementation of course concepts, as well as the level of difficulty you attempted.