HOMEWORK 1

**WARNINGS:**

* Do not modify the given header file.
* Do not use global variables or functions.
* Use dynamically allocated arrays.
* Your code should not have memory leaks.

**FLIGHT SYSTEM:**

* Each flight has a unique flight number and an aircraft with possible different rows and columns.
* Rows and columns are specified as the flight is created.

**Functionalities:**

1. **Add a Flight:** Given flight number, number of rows and seats; create a flight with an aircraft which has number of columns and seats that are given.

***void addFlight( const int flightNo, const int rowNo, const int seatNo );***

* 1. If a flight with the same flight no exists, display error message. Else, add the flight with given inputs and display confirmation message.

1. **Cancel a Flight:** Given flight number, cancel an existing flight.

***void cancelFlight( const int flightNo );***

* 1. If no flight with given flight no exists, display error message. Else, delete the flight and cancel all reservations made. Also display a confirmation message.

1. **Show All Flights:** Display existing flights with their flight number and seats available.

***void showAllFlights();***

1. **Show Detailed Information about a Specific Flight:** Given flight no, display its seating plan indicating which seats are available for reservation.

***void showFlight( const int flightNo );***

A B C D

1 x x o o o: available

2 x o o o x: reserved

1. o x o x
   1. If no flight with given flight no exists, display error message.
2. **Make Reservation:** Given number of passengers and seats, create a reservation for the given seats.

***int makeReservation( const int flightNo, const int numPassengers, const int \*seatRow, const char \*seatCol );***

* 1. Seat numbers are represented with 2 arrays where first array represents the rows as an integer and second array represents seats in that row as a char.
  2. If given flight doesn’t exist or any of the seats given is not available, display an error message. Else, create a reservation with a unique reservation code and reserve the given seats. Reservation code for a reservation must be unique for not only a flight but also the entire system.
  3. You may assume that inputs only contain valid values.

1. Ca**ncel a Reservation:** Given a reservation code, cancel all the reservation specified.

***void cancelReservation( const int resCode );***

* 1. If no reservation with given code exists, display error message. Else, release all the seats which were reserved under the given reservation and display confirmation message.

1. **Show Reservation:** Given a reservation code, display details about the reservation specified.

***void showReservation( const int resCode );***

* 1. If no reservation with given code exists, display error message. Else, display details details about the reservation specified.

