PROG1815 – Programming Concepts II

Assignment 1 Prof: Mark McCaulay

Problem Specification: (Airline Reservation System)

1. Write a reservation system for an airline flight seating. Assume the airplane has 5 rows with 3 seats in each row.

2. Allow the user the following options:

a. Add a passenger to the flight or waiting list.

i. Request the passenger's name.

ii. Display a chart of the seats in the airplane. (When "**All Seats"** are pressed);

iii. If seats are available, let the passenger choose a seat. Update the passenger to the seating chart

iv. You **cannot** add a person to waiting list (size 10) if there are seats available.

v. If **no seats** are available, place the passenger to the waiting list. In this case, "Book" and "**Add to waiting list"** buttons will do the same thing (the person will be added to the **waiting list**). If waiting list is full don't add to waiting list, just show a message that the **waiting list is full**.

vi. If seats are available, "**add to waiting list"** button will not do anything, except showing a message "Seats are available".

vii. By pressing "**Status"** button, the status (Available/Not Available) will be shown.

b. **Remove** a passenger from the flight

i. **Choose** the seat number to be cancelled.

ii. **Delete** the passenger's name.

iii. If the waiting list is **empty,** update the array so the seat is available

iv. If the waiting list is **not empty**, remove the first person from the list, and give him or her newly vacated seat.

3. Show message when

a. "**Book"** is pressed but no passenger name, and seat is specified.

b. "**Book"** is pressed when an already booked seat is chosen.

c. "**Add to Waiting List"** is pressed when there are seats available.

d. "**Cancel**" is pressed without specifying the seat.

e. After successfully booking.

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3. Show message when

f. After successfully cancelling a seat.

g. After successfully adding to the waiting list.

4. Add a "**Fill All**" button. Clicking this button will fill all the 15 seats. You may use the same passenger name for all seats.

5. **Restrict** the length of the passenger name to 2 characters. For example, I should **not** be able to book a person with the name "a".

Remember to incorporate the followings for all assignments (if applicable)

◎ Add Header comments.

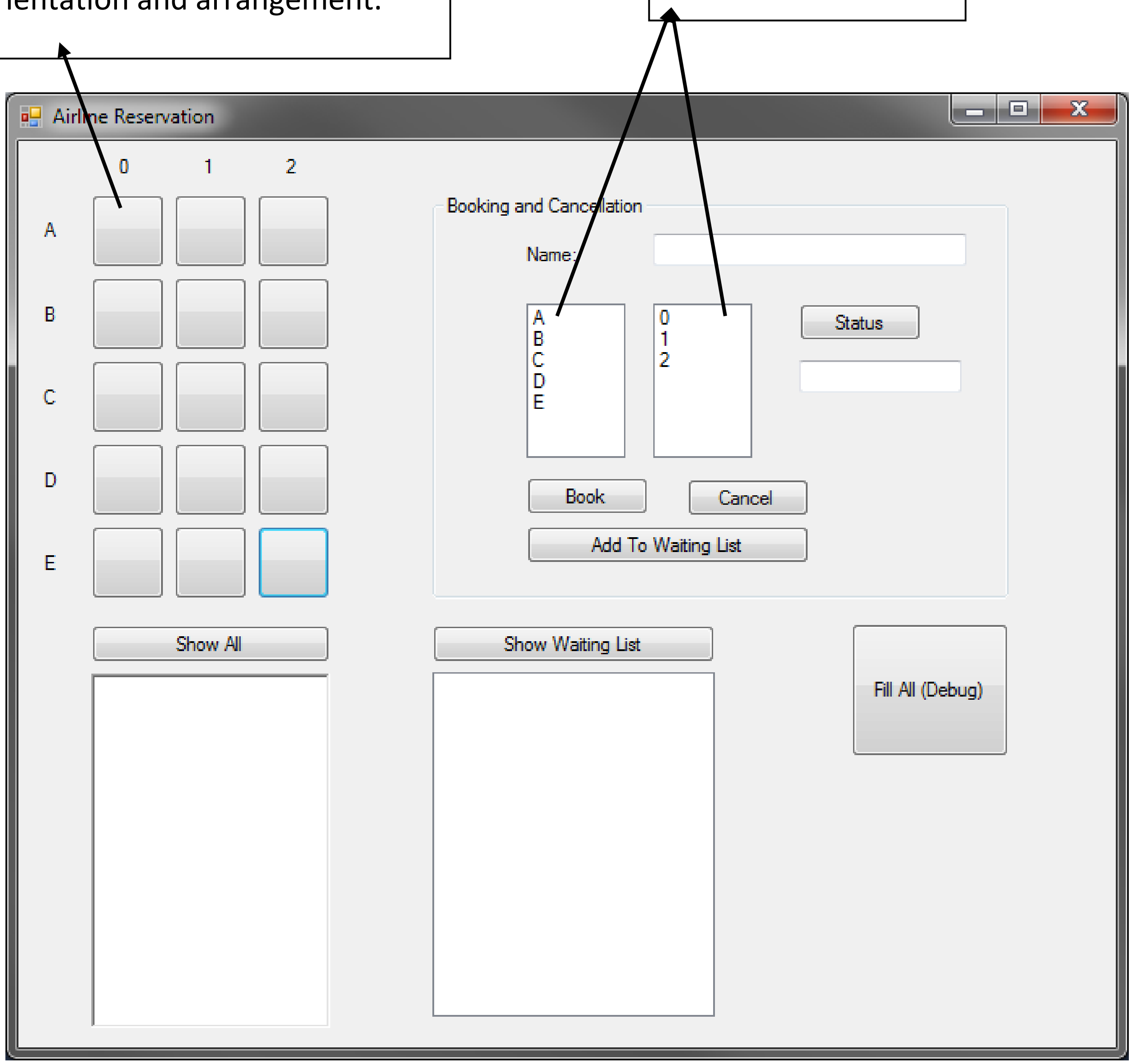
◎ Add Documentation comment.

◎ Incorporate all the highlighted standards provided on Standard Summary.

◎ Add Implementation comments where (you think) necessary.

These buttons do nothing. They are only to show the seats orientation and arrangement.

List Box.



Add Header comments.

◎ Add Documentation comment.

- ◎ Incorporate all the highlighted standards provided on Standard Summary.
- ◎ Add Implementation comments where (you think) necessary.

RichTextBox. **Don't use** List box.
These buttons do nothing. They are only to show the seats orientation and arrangement.

Note:

◎ You *may* use your own imagination for designing the user interface. The snapshot of the Form is given only to clarify the requirement. You don’t have to make it exactly the same (but you are certainly welcome to make it the same).

◎ **You must not use any collection/Listbox for showing all passengers and waiting list. You need to use arrays and loop to generate the output.**

◎ **Don’t disable/enable any button. All buttons should be enabled all the time.**

Hints:

◎ You must generate at least 1 - 2-dimentional array to store passenger information. Use array to store waiting list.

◎ Use loop to iterate through all the array elements and generate a string. Then show the string in the RichTextBox when “show all” and “show

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Evaluation:

Name:____	**Marks**
(please fill your name) Spec	
User Interface Design	/5
Display a chart of the seats in the airplane. (When “Show All” is pressed)	/5
If seats are available, let the passenger choose a seat. Update the passenger to the seating chart if show all is pressed.	/10
If no seats are available, place the passenger on the waiting list.	/10
By pressing “Status” button, the status (Available/Not Available) will be shown.	/5
Delete the passenger’s name.	/5
After deleting a seat, if the waiting list is empty, update the array so the seat is available	/5
If the waiting list is not empty, remove the first person from the list, and give him or her newly vacated seat.	/10
“Fill All” button books all the seats by one click.	/5
Show Message when	
“Book” is pressed but no passenger name, and seat is specified.	/5
“Book” is pressed when an already booked seat is chosen.	/5
“Add to Waiting List” is pressed when there are seats available.	/5
“Cancel” is pressed without specifying the seat through row column list box.	/5
After successfully booking.	/5
After successfully cancelling a seat.	/5
After successfully adding to waiting list.	/5
After moving the first person from the waiting list to a recently cancelled seat.	/5
Total	________ **____/100**

Submission Requirements

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1. Hand in a print out of your code and print screens your form executions of your code, at various steps to show each piece works. Submit programs to dropbox, so I can also execute your code and test it live.
