

Project5 Specifications: Airline Reservation System

Write a reservation system for an airline flight. Assume the airplane has 10 rows with 4 seats in each row. Use a 2-dimensional array of strings to maintain a seating chart. In addition, create an array to be used as a waiting list in case the plane is full.

The waiting list should be "first come, first served"; that is, people who are added early to the list get priority over those added later. Allow the user the following options:

- A. Add a passenger to the flight or waiting list.
 - 1. Request the passenger's name
 - 2. Display a chart of the seats in the airplane in tabular form.
 - 3. If seats are available, let the passenger choose a seat. Add the passenger to the seating chart.
 - 4. If no seat preference specified, assign an open seat to them.
 - 5. If not seats are available, place the passenger on the waiting list.
- B. Remove a passenger from the flight.
 - 1. Request the passenger's name.
 - 2. Search the seating chart for their name and delete it.
 - 3. If the waiting list is empty, update the array so the seat is available.
 - 4. If the waiting list is not empty, remove the first person from the list, and give him/her the newly vacated seat.
- C. List the passengers on the flight.
 - 1. Using a new form, display the passenger list in tabular form showing their name and Assigned Seat. Include in the display the waiting list.
 - 2. Allow the list to be: printed, previewed, print setup, and font changed. Examine DisplayText.zip project to use the frmDisplay.zip files
- D. In order to easily test the Waitlist, include in the "command" line a number from 1 to 40 which will automatically create passengers named: Pass1, Pass2, etc. when the program starts.
 - 1. Use the Command() to get the value.
 - 2. Create a Batch file in your ...Bin\Debug folder that will test this.
In this example the program was named project5.exe.
Example: the file "Program5.Bat" would contain this:
@echo off
echo Close this cmd window after program starts.
cmd /c "project5.exe 40"
- E. Allow the flight to be reset to empty to start new flight.

Points:

Earned (Max)

- | | | |
|--|-------|-----|
| 1) Every procedure has a comment | _____ | (1) |
| 2) Block comment at beginning of Class Form | _____ | (1) |
| 3) All objects follow the naming convention | _____ | (1) |
| 4) Forms constructed correctly (Appearance only) | _____ | (1) |
| 6) Program validates names when adding or deleting | _____ | (1) |
| 7) Program validates seating assignment when entered | _____ | (1) |
| 8) Program uses 2-D Array to store information | _____ | (2) |
| 9) Program uses at least 3 Sub or Function calls | _____ | (2) |
| 10) Program correctly adds passenger to plane/waitlist | _____ | (2) |
| 11) Program correctly deletes passenger from plane and
If waitlist not empty assigns 1st to that seat | _____ | (2) |
| 12) Program lists passengers correctly. | _____ | (3) |
| 13) Program Uses frmDisplay.vb correctly. | _____ | (3) |
| 14) Program Reset works correctly. | _____ | (2) |
| 15) Program can start up with passengers assigned | _____ | (3) |

TOTAL _____ (25)

Shown at start up with empty plane:

Project5

Name: Seat:

(1A,1B,1C,1D===10A,10B,10C,10D)

Row	A	B	C	D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Passenger Count 0

Wait List

Shown after adding 1st passenger allowing program to select an open seat:

The screenshot shows a window titled "Project5" with a light gray background. On the left, there are five buttons stacked vertically: "Add Passenger", "Delete Passenger", "List Passengers", "Reset All", and "Close". Each button has a small icon on its left. On the right, there are two text input fields: "Name:" with the value "A Linn" and "Seat:" with the value "1A". Below these fields is a text label "(1A,1B,1C,1D===10A,10B,10C,10D)". Below this is a table with 10 rows and 4 columns (A, B, C, D). The first row (1) has an 'X' in column B. Below the table is a text label "Passenger Count 1". At the bottom right is a text label "Wait List" above a small, empty, scrollable text area.

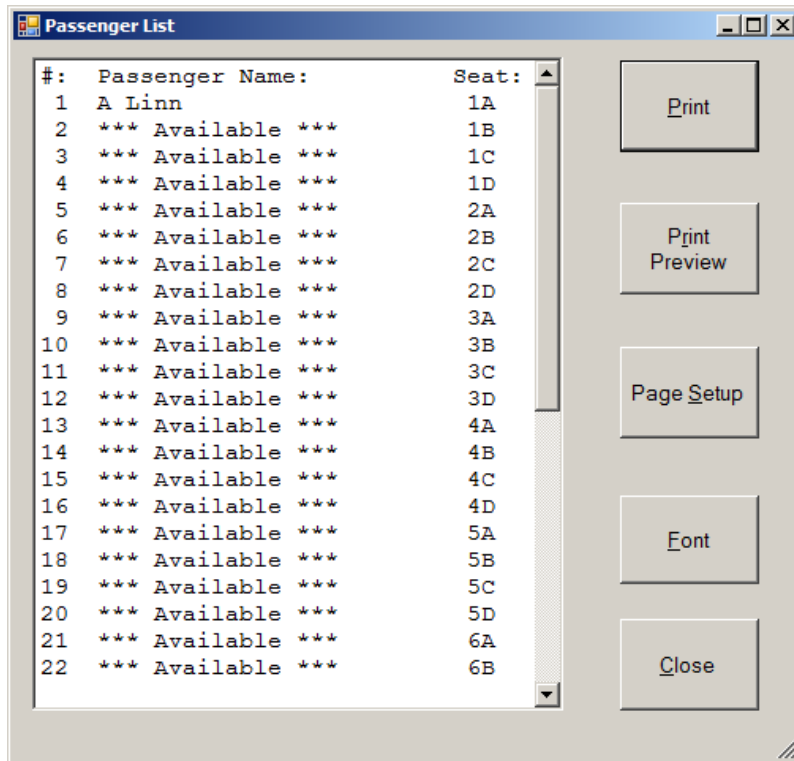
Row	A	B	C	D
1		X		
2				
3				
4				
5				
6				
7				
8				
9				
10				

Shown after adding a passenger selecting a specific seat: 10D

The screenshot shows the same "Project5" window. The "Name:" field now contains "A Student" and the "Seat:" field contains "10d". The text label "(1A,1B,1C,1D===10A,10B,10C,10D)" remains. The table now has an 'X' in row 1, column B, and another 'X' in row 10, column D. Below the table, the text label "Passenger Count 2" is displayed. The "Wait List" section remains empty.

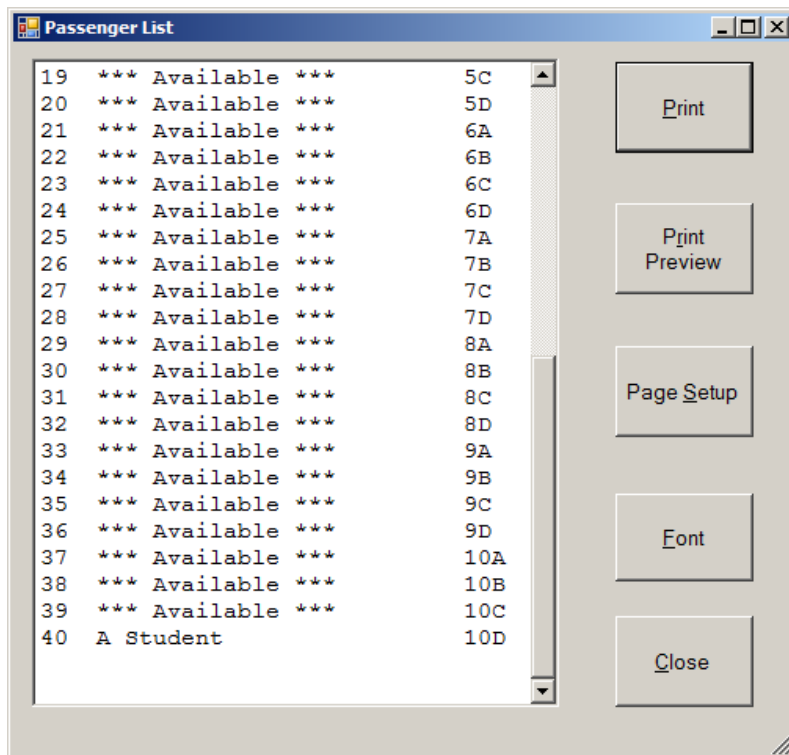
Row	A	B	C	D
1		X		
2				
3				
4				
5				
6				
7				
8				
9				
10				X

List of Flight is shown below in 2 screen shots:



The screenshot shows a window titled "Passenger List" with a table of passengers. The table has three columns: "#", "Passenger Name:", and "Seat:". The first passenger is "A Linn" in seat "1A". Passengers 2 through 21 are marked as "Available" with three asterisks on each side. The last passenger is "A Student" in seat "6B". To the right of the table are five buttons: "Print", "Print Preview", "Page Setup", "Font", and "Close".

#	Passenger Name:	Seat:
1	A Linn	1A
2	*** Available ***	1B
3	*** Available ***	1C
4	*** Available ***	1D
5	*** Available ***	2A
6	*** Available ***	2B
7	*** Available ***	2C
8	*** Available ***	2D
9	*** Available ***	3A
10	*** Available ***	3B
11	*** Available ***	3C
12	*** Available ***	3D
13	*** Available ***	4A
14	*** Available ***	4B
15	*** Available ***	4C
16	*** Available ***	4D
17	*** Available ***	5A
18	*** Available ***	5B
19	*** Available ***	5C
20	*** Available ***	5D
21	*** Available ***	6A
22	*** Available ***	6B



The screenshot shows the same "Passenger List" window, but the list is scrolled down to show passengers 19 through 40. Passengers 19 through 39 are marked as "Available" with three asterisks on each side. The last passenger is "A Student" in seat "10D". The buttons "Print", "Print Preview", "Page Setup", "Font", and "Close" are still visible on the right.

19	*** Available ***	5C
20	*** Available ***	5D
21	*** Available ***	6A
22	*** Available ***	6B
23	*** Available ***	6C
24	*** Available ***	6D
25	*** Available ***	7A
26	*** Available ***	7B
27	*** Available ***	7C
28	*** Available ***	7D
29	*** Available ***	8A
30	*** Available ***	8B
31	*** Available ***	8C
32	*** Available ***	8D
33	*** Available ***	9A
34	*** Available ***	9B
35	*** Available ***	9C
36	*** Available ***	9D
37	*** Available ***	10A
38	*** Available ***	10B
39	*** Available ***	10C
40	A Student	10D

Shown at start up with 40 passengers assigned:

The screenshot shows the 'Project5' application window. It has a title bar with the text 'Project5' and standard window controls. The main area is divided into several sections. On the left, there are five buttons stacked vertically: 'Add Passenger', 'Delete Passenger', 'List Passengers', 'Reset All', and 'Close'. At the top left, there are two input fields labeled 'Name:' and 'Seat:'. Below these, there is a text label '(1A,1B,1C,1D===10A,10B,10C,10D)'. In the center-right, there is a table with 10 rows and 4 columns labeled 'Row', 'A', 'B', 'C', and 'D'. The table contains 'X' marks in the 'A', 'B', 'C', and 'D' columns for all rows from 1 to 10. Below the table, there is a text label 'Passenger Count 40'. At the bottom right, there is a text label 'Wait List:' followed by a text area with a scrollbar.

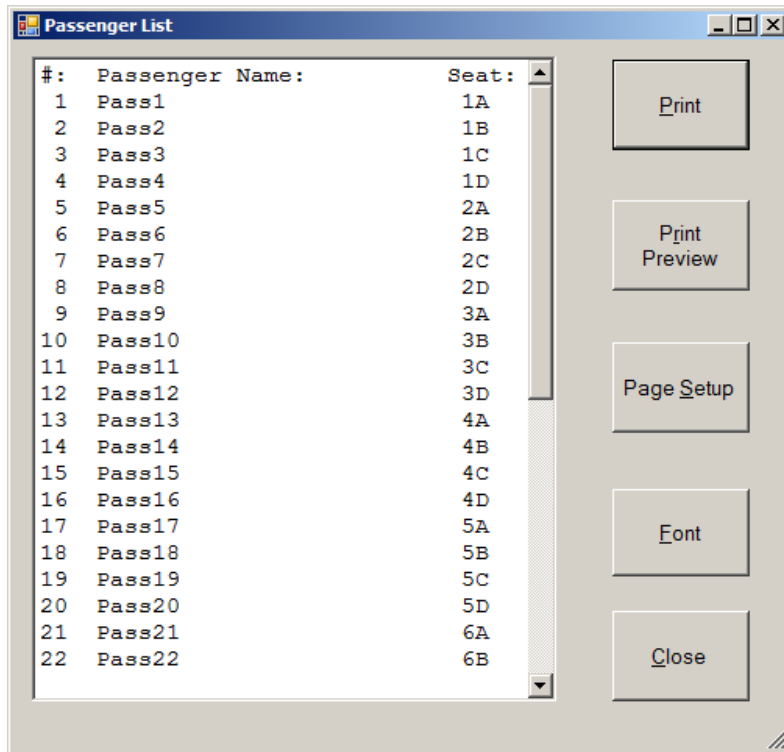
Row	A	B	C	D
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X
5	X	X	X	X
6	X	X	X	X
7	X	X	X	X
8	X	X	X	X
9	X	X	X	X
10	X	X	X	X

Shown after adding passenger: A Linn

The screenshot shows the 'Project5' application window after adding a new passenger. The 'Name' input field now contains 'A Linn'. The 'Seat' input field is empty. The table in the center-right remains the same, with 'X' marks in all columns for all rows. The 'Passenger Count 40' label is still present. The 'Wait List:' text area now contains the text '1:A Linn'.

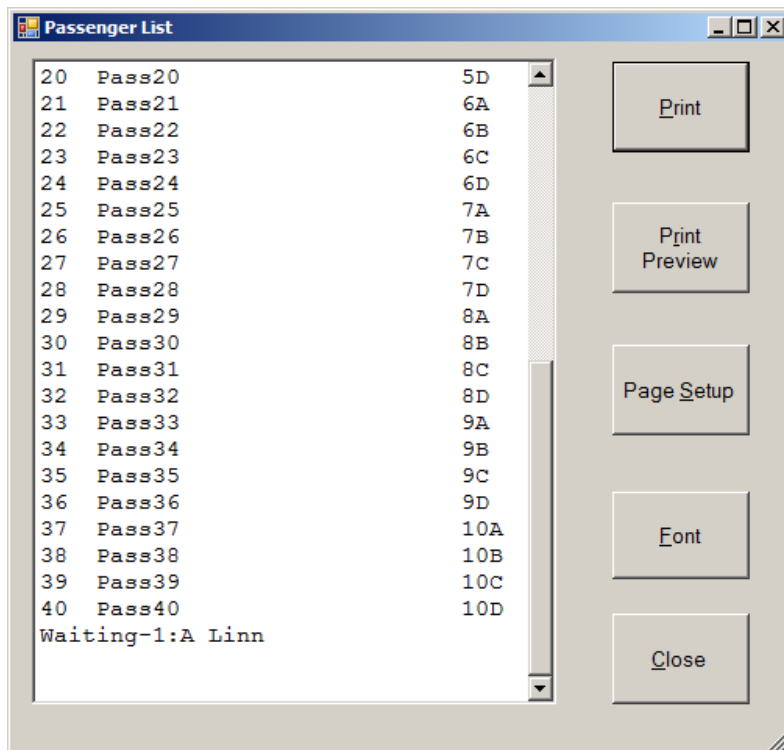
Row	A	B	C	D
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X
5	X	X	X	X
6	X	X	X	X
7	X	X	X	X
8	X	X	X	X
9	X	X	X	X
10	X	X	X	X

List of Flight is shown below in 2 screen shots:



The screenshot shows a window titled "Passenger List" with a table of passengers. The table has three columns: "#", "Passenger Name:", and "Seat:". The passengers are listed from 1 to 22. To the right of the table are five buttons: "Print", "Print Preview", "Page Setup", "Font", and "Close".

#	Passenger Name:	Seat:
1	Pass1	1A
2	Pass2	1B
3	Pass3	1C
4	Pass4	1D
5	Pass5	2A
6	Pass6	2B
7	Pass7	2C
8	Pass8	2D
9	Pass9	3A
10	Pass10	3B
11	Pass11	3C
12	Pass12	3D
13	Pass13	4A
14	Pass14	4B
15	Pass15	4C
16	Pass16	4D
17	Pass17	5A
18	Pass18	5B
19	Pass19	5C
20	Pass20	5D
21	Pass21	6A
22	Pass22	6B



The screenshot shows the same "Passenger List" window, but the list of passengers is scrolled down to show entries 20 through 40. Below the last entry, there is a line that reads "Waiting-1:A Linn". The buttons on the right remain the same.

20	Pass20	5D
21	Pass21	6A
22	Pass22	6B
23	Pass23	6C
24	Pass24	6D
25	Pass25	7A
26	Pass26	7B
27	Pass27	7C
28	Pass28	7D
29	Pass29	8A
30	Pass30	8B
31	Pass31	8C
32	Pass32	8D
33	Pass33	9A
34	Pass34	9B
35	Pass35	9C
36	Pass36	9D
37	Pass37	10A
38	Pass38	10B
39	Pass39	10C
40	Pass40	10D
Waiting-1:A Linn		