**CS 2060 Programming with C - Fall 2017**

**Assignment #6**

Due Date: Oct 18, 2017 at 9:25am (MW class), Oct 19, 2017 at 9:25am (TR class)

Purpose: Learn to manipulate arrays

Effort: Individual

Points: 100

Deliverables: Upload the .c source code file to Blackboard by due date.

Please include pseudocode in the comments at the beginning of your code.

**Please hand in a hardcopy version of your code at beginning of class.**

**Assignment Description**

In industry you rarely write new code; generally, your job is to modify existing code. Assignment #6 provides a realistic industry experience as we will be modifying Assignment #5 – the concert tickets program – warts and all.

Basically, you will remove the random number generators and in their place use **seating** data provided in a file. I will provide the **seating** file as well as the code to deal with a file since we have not covered files yet. Once the different **concert sections** are populated, the program will ask the customer the same questions (which concert, what section, how many seats) but this time the program will determine where the available seats are (if any) by searching the **sections** and presenting those seats to customer.

The **additions** for this assignment are:

* Populate the different concert sections with the “seating” data in a file
* Search a specific section to determine if there are available seats
* If no seats are found in the customer selected section, allow the customer to select another section and/or select a different number of seats for the desired band
* Allow the customer to make more than one purchase for the desired band
* View the total sales for this concert.

**Specifications**

1. Create a C project called **Assignment5 (please use this exact name)**
2. Follow "CS2060 Programming Assignments Policy"
3. Concert Details:
   1. All details from Assignment #5 are the same except the following:
      1. The concert venue shrunk!
      2. There are still 4 sections but no range of section numbers.

|  |  |
| --- | --- |
| **Section** | **Seat Price** |
| Floor | $400.00 |
| 102 | $325.00 |
| 202 | $250.00 |
| 302 | $100.00 |

* + 1. Each **section** contains 5 rows and 10 seats in each row.
    2. When displaying order information, the **row** and **seat** will now be obtained by searching the **customer selected section** you populated with the file data.
    3. If seats are available and the tickets are purchased, update that **section’s** seats to indicate they are no longer available.
    4. If no seats are found in the **customer selected section**, allow customer to select another section and/or select a different number of seats for the same band.
    5. Allow customer to purchase more than one set of tickets for **one band**.

1. Dealing with the file:
   1. A file that contains “seating” data will be included on blackboard.
   2. The file on blackboard is an example file, the file used to test your code could be different in terms of which seats are sold and which are available.
   3. Each line in the file will contain, a section number, a row number, and a list of 10 values representing the state of the seat (sold = 1 or available = 0).

102 1 1100110011

This line represents data for section 102, row 1, seats 1, 2, 5, 6, 9, 10 are sold, seats 3, 4, 7, 8 are available.

* 1. Each section will have exactly 5 lines (one for each row) of data in the file. For example, here are the 5 rows for section 102:

102 1 1100110011

102 2 1111111100

102 3 1111111110

102 4 1100011000

102 5 1111111111

* 1. Place the **concert.txt** seating data file somewhere on your system. In the **fopen** function you will need to include the path to the file. I placed concert.txt file in the **src** directory where my **.c** is located so I had:

C:/dev/eclipse\_workspace/Assignment6/src/concert.txt

* 1. Include the following bits of code to handle the file processing:

**int** **main**(**void**) {

// Create a pointer to the file

FILE \*filePtr;

// Open the file

**if** ((filePtr = **fopen**("C:/concert.txt","r")) != NULL)

{

**// Your code can go here**

// Close the file

**fclose**(filePtr);

}

**else** {

// This should not execute but at least you will know if your

// file could not be opened!

**puts** ("File could not be opened");

}

} // main

* 1. Include the following function. Note: **MAX\_LINE** is a global constant set to 27.

// Reads the next line in the file and places the data into line array

**void** **nextLine** (FILE \*filePtr, **char** line[]) {

**fgets**(line, MAX\_LINE, filePtr);

}

**Tips**

* Start a new project and copy your code from assignment 5 into this new project.
* There is a useful a couple useful string functions you can try to include:
  + **sscanf -** p.345 and Figure 8.13
  + **strcpy –** p.349 and Figure 8.15

**Output**

Your output may look like the following:

**Output - Example #1**

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1: Rolling Stones

2: Imagine Dragons

3: U2

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Which concert would you like to attend? **1**

-------------------------------------------

Section Price

-------------------------------------------

0: Floor $400.00

1: Section 102 $325.00

2: Section 202 $250.00

3: Section 302 $100.00

-------------------------------------------

In what section would you like to view the Rolling Stones? **0**

How many seats for the Rolling Stones? **2**

Quantity Section Row Seats Seat Price Total

-------------------------------------------------------------------

2 Floor 5 5-6 $400.00 $800.00

Service Fee & Taxes(x2) $47.00

-------------------------------------------------------------------

Total: $847.00

You have 30 seconds to decide if you want to purchase these tickets (Y/N)? **y**

Thank you for your purchase. Your credit card will be charged $847.00

Would you like to purchase more concert tickets? **y**

-------------------------------------------

Section Price

-------------------------------------------

0: Floor $400.00

1: Section 102 $325.00

2: Section 202 $250.00

3: Section 302 $100.00

-------------------------------------------

In what section would you like to view the Rolling Stones? **6**

6 is not a valid section. Please try again. **0**

How many seats for the Rolling Stones? **6**

There are no tickets available that meet your request.

Please select a different quantity or choose another price range.

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Section Price

-------------------------------------------

0: Floor $400.00

1: Section 102 $325.00

2: Section 202 $250.00

3: Section 302 $100.00

-------------------------------------------

In what section would you like to view the Rolling Stones? **1**

How many seats for the Rolling Stones? **6**

There are no tickets available that meet your request.

Please select a different quantity or choose another price range.

-------------------------------------------

Section Price

-------------------------------------------

0: Floor $400.00

1: Section 102 $325.00

2: Section 202 $250.00

3: Section 302 $100.00

-------------------------------------------

In what section would you like to view the Rolling Stones? **2**

How many seats for the Rolling Stones? **6**

Quantity Section Row Seats Seat Price Total

-------------------------------------------------------------------

6 202 5 2-7 $250.00 $1500.00

Service Fee & Taxes(x6) $141.00

-------------------------------------------------------------------

Total: $1641.00

You have 30 seconds to decide if you want to purchase these tickets (Y/N)? **y**

Thank you for your purchase. Your credit card will be charged $1641.00

Would you like to purchase more concert tickets? **n**

The total sales for the Rolling Stones is $46475.00