

CMPS 150 – Fall 2005
Programming Assignment #10
2005.11.29

ABSOLUTELY
NO Late Assignments Accepted !!!

Date Assigned: Tuesday, November 29, 2005
Due Date: 10:00 PM, Monday, December 5, 2005

NOTE !!!!
pa10 is worth 4% of your overall grade

The coded solution to the following problem is to be done by you and only you. You may ask for help from the class teaching assistants and the instructors, but you may not ask for C++ help from anyone else. You may use your notes, C++ texts, online tutorials, etc., but the code must be your own. If you have a problem with your class account, compiling or debugging your code, or if you are not certain if you have submitted correctly, come see a TA or instructor as soon as possible.

1) **Include the following information as comments in the header of your source code:**

Author: *Your-Name*
CLID: *Your-login-ID*
Class: *CMPS 150 Section Your-Section-Number*
Assignment: *pa10*
Date Assigned: *Tuesday, November 29, 2005*
Due Date: *10:00 PM, Monday, December 5, 2005*
Description: *A brief description of the program's purpose.*
Certification of Authenticity:
I certify that this assignment is entirely my own work.

2) **While in your class folder, enter the C++ code for the following description into a file named pa10.cc**

3) **Problem Description:**

This program will use the features of C++ that we have learned thus far in CMPS150, focusing on arrays, both 1-dimensional and 2-dimensional, and programmer-defined functions.

Your program will be used to sell tickets for performances at the KelCor Theatre. The theatre's auditorium has 10 rows, with 15 seats in each row.

Processing

When pa10 begins, it must first read data from a file containing ticket price information. Each row of the theatre has a ticket price associated with it. You must first read the data from the ticket price file, and load it into a one dimensional array. Each line of the input file contains 1 integer and 1 floating point number. The integer indicates a row number, and the floating point number indicates the price of a ticket for a seat in that row. You must make adjustments to handle the fact that 10 rows will be numbered 0-9 internally, yet will be numbered 1-10 for the user.

The user of your program is to be presented a menu with the following options:

1. Initialize All Seats to Available
2. Sell Seats
3. Display the Seating Chart
4. Display the Total Seats Sold and Total Seats Available
5. Display the Total Ticket Sales
6. Quit

helpful "starter" code will be distributed in class: Wed. 12/1
& will be available on UCS after class at: **w1/cs150x/pa10starter.cc**

Input File

File containing price data must be named: **prices.dat**

Sample Input File

order of data:
row number
price per ticket on that row

7	17.50
4	22.50
3	22.50
9	12.50
2	37.50
6	17.50
1	37.50
0	47.50
5	17.50
8	12.50

Sample Run

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 1

All seats in The KelCor Theatre are available for purchase !

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 2

Select Row Desired: 1
Select Beginning Seat Number: 1
Select Ending Seat Number: 1

Ticket(s) Selected ARE Available !
Total Bill: \$ 47.50

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 2

Select Row Desired: 1
Select Beginning Seat Number: 1
Select Ending Seat Number: 1

Ticket(s) Selected are NOT Available !

CMPS 150 – Fall 2005 -- Programming Assignment #10

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 3

Seats (S = Sold, * = Available)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Row 1	S	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$47.50)
Row 2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$37.50)
Row 3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$37.50)
Row 4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$22.50)
Row 5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$22.50)
Row 6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$17.50)
Row 7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$17.50)
Row 8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$17.50)
Row 9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$12.50)
Row 10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	(\$12.50)

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 4

Total Seats Sold: 1
Total Seats Available: 149

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 5

Total Sales: \$ 47.50

1. Initialize All Seats to Available
2. Sell Seats
3. Display Seating Chart
4. Display Total Seats Sold and Total Seats Available
5. Display Total Ticket Sales
6. Quit

Selection: 6

Thanks - Goodbye !!!

4) **Additional Requirements:**

- Use comments as appropriate. Refer to “Programming Style Sheet” on the CMPS150 website.
- Your program must use good names for all variables and named constants. (Good names are names that are descriptive of the values stored or the function performed.)
- Adhere to style requirements. See “Programming Style Sheet” on the CMPS 150 web site.

5) **Name your source file 'pa10.cc' and store it in your class directory (cs150x).**

6) **Compile your program and test it (see Some Unix Help for quick assistance).**

To compile:

```
g++ -o pa10run pa10.cc
```

To run (execute):

```
pa10run
```

7) **After it is debugged and running correctly, submit pa10.cc (the source file only) electronically by 10:00 PM, Monday, December 5, 2005 to receive full credit.**

```
submit -d pa10.cc
```

The CLID for the TA of your section is the name to put in. This is one of the following:

<u>Section</u>	<u>TA</u>	<u>CLID of TA</u>
Section 3.....	Hollie	hmb7226
Section 4.....	Anca.....	axd9917
Section 5.....	Mitun	mxb2169
Section 6.....	Jason	jbm8240

You will be asked to enter the assignment name and the CLID of the person it is to go to. The assignment name is:

```
assn10
```

NOTE: Programs that do NOT compile will receive a grade of zero !!!