

Coding Assignment 6

Your assignment's C file name will be `Code6_XXXXXXXXXX.c` where `XXXXXXXXXX` is your student id. I will refer to this file in the rest of this document as `Code6.c`.

makefile

Create a `makefile` for this assignment. Your `makefile` will need to include the following files

`Code6_XXXXXXXXXX.c`

`FileLib.c`

`MovieTheater.c`

FileLib.h

Contains the prototypes for the `FileLib.c` library.

FileLib.c

`get_command_line_parameter()`

This code has been provided for you. You are responsible for understanding how to call it and what it returns. See lecture slides from Week 14 for more details.

`OpenFile()`

Pass in filename and an open mode. Uses those to open the file. Return file handle.

`CloseFile()`

Pass in the file handle and close the file.

`ReadMovieTheater()`

Read a line from the input file and translate that to movie theater seats. Each element of `MovieTheater` is a struct `Seat`.

`WriteMovieTheater()`

Write the `sold` member of each element of `MovieTheater` to the file

MovieTheater.h

Contains the prototypes for the `MovieTheater.c` library

`typedef struct Seat`

Integer `SeatNumber` - seat number in the movie theater – 1,2,3,4, etc (NOTE : no seat number of 0)

Character `SeatRow` – row in the movie theater – A, B, C, D, etc

Integer `sold` – value is 0 when seat is available and set to 1 when seat is sold

`enum`

Enumeration values will be used in `switch` statement to indicate status of ticket

MovieTheater.c

`SeatAvailable()`

Pass in a pointer to a single seat and return the value of `sold` for that seat

```
SellSeat()
```

Pass in a pointer to a single seat and set the value of `sold` for that seat

```
PrintSeatMap()
```

Pass in the 2D array named `MovieTheater` of type `Seat` and print `MovieTheater` as show in the assignment's output. Seats that have been sold (structure member `sold` has a value of 1) should be shown with an 'X' and seats that are available for purchase (structure member `sold` has a value of 0) should be shown with an 'O' (not zero - the letter O).

```
PrintTickets()
```

Pass in `Tickets` array and the number of tickets sold. Print out the tickets as show in the sample output.

Here's your tickets. Enjoy your movie!!

```
_____  
|           |  
|  Seat  F3  |  
|_____|
```

```
_____  
|           |  
|  Seat  B2  |  
|_____|
```

```
_____  
|           |  
|  Seat  F1  |  
|_____|
```

Code6.c

`Code6.c` should only contain `main()`. All other functions are from the libraries.

Read the input file to determine which seats in your theater are sold or available. A 0 (zero) in the input file means that the seat is available. A 1 (one) in the input file means that the seat has been sold. Fill up your 2D array of structures with this information.

Display your seat map to the user.

Sell seats to your movie theater.

After selling seats and displaying the tickets, write to the output file. The output file is in the same format as the input file. The output file from one run of the program should be able to be used as the input file to the next run. Any 1s in the file should show up as 'X' in the seat map display. See sample output.

Sample Output

```
student@maverick:/media/sf_VM/CSE1320/CA6$ ls
Code6_1000074079.c  Code6_1000074079.o  FileLib.c  FileLib.o  MovieTheater.c  MovieTheater.o
Code6_1000074079.e  EmptyMovieTheater.txt  FileLib.h  makefile  MovieTheater.h
student@maverick:/media/sf_VM/CSE1320/CA6$ ./Code6_1000074079.e INPUTFILENAME=FileDoesNotExist 0
OUTPUTFILENAME=Output.txt
File did not open : No such file or directory
Unable to open file...exiting
student@maverick:/media/sf_VM/CSE1320/CA6$ more EmptyMovieTheater.txt
00000000000000000000000000000000
student@maverick:/media/sf_VM/CSE1320/CA6$ ./Code6_1000074079.e INPUTFILENAME=EmptyMovieTheater.
txt OUTPUTFILENAME=Output.txt
```

X - sold 0 - available

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	0	0	0	0
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	0

How many movie tickets do you want to buy? 3

Pick a seat (Row Seat) A5

That is not a valid seat. Please choose again
1

Pick a seat (Row Seat) a1

X - sold 0 - available

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	0	0	0
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	0

Pick a seat (Row Seat) A1

Seat A1 is not available.

Seat 1	Seat 2	Seat 3	Seat 4
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Pick a seat (Row Seat) A2

Seat 1	Seat 2	Seat 3	Seat 4
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Pick a seat (Row Seat) f4

Seat 1	Seat 2	Seat 3	Seat 4
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Here's your tickets. Enjoy your movie!!

I

Seat F4

```
student@maverick:/media/sf_VM/CSE1320/CA6$ ./Code6_1000074079.e INPUTFILENAME=Output.txt OUTPUTFILENAME=NewOutput
```

X - sold 0 - available

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	0	0
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

How many movie tickets do you want to buy? 2

Pick a seat (Row Seat) A1

Seat A1 is not available.

X - sold 0 - available

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	0	0
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Pick a seat (Row Seat) a1

Seat A1 is not available.

X - sold 0 - available
I

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	0	0
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Pick a seat (Row Seat) A3

X - sold 0 - available

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	X	0
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Pick a seat (Row Seat) A10

That is not a valid seat. Please choose again

Pick a seat (Row Seat) A4				
	X - sold		0 - available	
	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	X	X
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	X	X
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Row A	X	X	X	X
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

Row E	0	0	0	0
Row F	0	0	0	X

ROW	F	0	0	0	X
-----	---	---	---	---	---

Here's your tickets. Enjoy your movie!!

A diagram showing a 2x2 grid of seats. The top row contains 'Seat A3' and the bottom row contains 'Seat A4'. The seats are represented by rectangles with dashed lines indicating the grid structure.

Seat A3

Seat A4

```
student@maverick:/media/sf_VM/CSE1320/CA6$ more NewOutput  
11110000000000000000000000000001  
student@maverick:/media/sf_VM/CSE1320/CA6$ ./Code6_1000074079.e INPUTFILENAME=NewOutput OUTPUTFI  
LENAME=Output.3
```

[illegible]

```
student@maverick:/media/sf_VM/CSE1320/CA6$ ./Code6_1000074079.e INPUTFILENAME=NewOutput OUTPUTFI  
LENAME=Output.3
```

	X - sold	0 - available		
	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	X	X
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	0	0	0	X

How many movie tickets do you want to buy? 1

Pick a seat (Row Seat) f1

	X - sold	0 - available		
	Seat 1	Seat 2	Seat 3	Seat 4
Row A	X	X	X	X
Row B	0	0	0	0
Row C	0	0	0	0
Row D	0	0	0	0
Row E	0	0	0	0
Row F	X	0	0	X

Here's your tickets. Enjoy your movie!!

Seat F1

student@maverick:/media/sf_VM/CSE1320/CA6\$ more Output.3

111100000000000000001001

student@maverick:/media/sf_VM/CSE1320/CA6\$ █