# Coding Assignment 7

Your assignment's C file name will be `Code7_xxxxxxxxxx.c` where `xxxxxxxxxx` is your student id.  I will refer to this file in the rest of this document as `Code7.c`.

Copy `Code6_xxxxxxxxxx.c` to `Code7_xxxxxxxxxx.c`.  You will be removing some code and adding some new code.

Please watch the videos showing how the program is run before reading the rest of this document.  Look over the `Code7_template.c` file also before continuing.

1.    `main()`

Call function `FillMovieTheater()` to initialize the array to the values read from the 2$^{nd}$ line of the file.  Pass the 2D array, the number of rows and seats read from the input file and the second line of the input file (the X's and O's).

Sell tickets as in previous assignment.

Call function `WriteMovieTheater()` to write the 2D array to the output file.

2.    `FillMovieTheater`

Return type    `void`

Parameters    2D array of seat map, the number of rows, the number of seats, the array containing the 2$^{nd}$ line of the input file

Use a nested `for` loop to set all values of the 2D array to the values from the input file

3.    `WriteMovieTheater`

Return type    `void`

Parameters    2D array of seat map, the number of rows, the number of seats

Prompt for the output file and open it.  Use a nested `for` loop to write the values of the 2D array to the output file.  Opening the output file will create it because of the mode being used.  The format of the output file should match the format of the input file.

Notes

The output shown in the assignment (screenshots/videos) is REQUIRED.  Your program must create the identical format/message/output.  Part of this assignment is learning how to print a formatted 2D array (we went through this process in great detail in class).

Be sure to not only test good values but test what is called "edge values".  If your theater has rows A-D and Seats 1-6,      then make sure you can buy a ticket at A1, A6, D1 and D6.  Make sure in this case that your program catches invalid     seats like A7, D7 and E1.  Watch video for examples.

Validate that the seat choice is in your movie theater.  For example, if your theater has 6 rows and 4 seats per row and the seat choice is G3, then G translates to row 6, column 2.  A theater with 6 rows has array row values of 0 through 5 so row 6 would not be in the array; therefore, not a valid seat choice.  If a seat choice is valid (row is outside of range or column is outside of range), then prompt the user for a new value.  Continue prompting until a seat in your theater is entered.

You need to create your own input file.  Examples are shown in the "Sample Output" section of this document.  The output file will be created when the program runs.  The format of the output file needs to match the format of the input file – you should be able to use an output file as an input file on the next run.

Good run with no bad inputs

```
more MTFile.txt
4 5
00000000000000000000

./a.out
Enter the name of your Movie Theater file MTFile.txt
How many tickets would you like to purchase?  (limit 4) 2


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0       0       0       0       0
Row B    0       0       0       0       0
Row C    0       0       0       0       0
Row D    0       0       0       0       0


Enter seat choice by entering the row and seat
Please pick a seat  a1


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    X       0       0       0       0
Row B    0       0       0       0       0
Row C    0       0       0       0       0
Row D    0       0       0       0       0


Enter seat choice by entering the row and seat
Please pick a seat  a5


Please find your way to your seats using this map...


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    X       0       0       0       X
Row B    0       0       0       0       0
Row C    0       0       0       0       0
Row D    0       0       0       0       0

Enjoy your movie!
Enter output filename MTOut.txt
more MTOut.txt
4 5
X000X000000000000000
./a.out
Enter the name of your Movie Theater file MTOut.txt
How many tickets would you like to purchase?  (limit 4) 2


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    X       0       0       0       X
Row B    0       0       0       0       0
Row C    0       0       0       0       0
Row D    0       0       0       0       0
```

```
Enter seat choice by entering the row and seat
Please pick a seat  A1


Seat A1 is already sold.  Pick a different seat.



         Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A     X        0        0        0        X
Row B     0        0        0        0        0
Row C     0        0        0        0        0
Row D     0        0        0        0        0


Enter seat choice by entering the row and seat
Please pick a seat  A2


         Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A     X        X        0        0        X
Row B     0        0        0        0        0
Row C     0        0        0        0        0
Row D     0        0        0        0        0


Enter seat choice by entering the row and seat
Please pick a seat  a3


Please find your way to your seats using this map...


         Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A     X        X        X        0        X
Row B     0        0        0        0        0
Row C     0        0        0        0        0
Row D     0        0        0        0        0

Enjoy your movie!
Enter output filename MTOut2.txt
more MTFile.txt
4 5
00000000000000000000
more MTOut.txt
4 5
X000X000000000000000
more MTOut2.txt
4 5
XXX0X000000000000000
```

**Number of Tickets Validation**

```
How many tickets would you like to purchase?  (limit 4) 0
No movie for you!




How many tickets would you like to purchase?  (limit 4) -1
This is a special showing - limit of 4 tickets per purchase
How many tickets would you like to purchase? (limit 4) 6
This is a special showing - limit of 4 tickets per purchase
How many tickets would you like to purchase? (limit 4) 3
```

```
./a.out
Enter the name of your Movie Theater file MTFile.txt
How many tickets would you like to purchase?  (limit 4) 5
This is a special showing - limit of 4 tickets per purchase
How many tickets would you like to purchase? (limit 4) -1
This is a special showing - limit of 4 tickets per purchase
How many tickets would you like to purchase? (limit 4) 2


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0        0      0      0        0
Row B    0        0      0      0        0
Row C    0        0      0      0        0
Row D    0        0      0      0        0


Enter seat choice by entering the row and seat
Please pick a seat  A12

That seat is not in this theater!!


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0        0      0      0        0
Row B    0        0      0      0        0
Row C    0        0      0      0        0
Row D    0        0      0      0        0


Enter seat choice by entering the row and seat
Please pick a seat  e1

That seat is not in this theater!!


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0        0      0      0        0
Row B    0        0      0      0        0
Row C    0        0      0      0        0
Row D    0        0      0      0        0


Enter seat choice by entering the row and seat
Please pick a seat  d2


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0        0      0      0        0
Row B    0        0      0      0        0
Row C    0        0      0      0        0
Row D    0        X      0      0        0


Enter seat choice by entering the row and seat
```

```
Please pick a seat   d2

Seat D2 is already sold.   Pick a different seat.



        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0        0       0       0        0
Row B    0        0       0       0        0
Row C    0        0       0       0        0
Row D    0        X       0       0        0



Enter seat choice by entering the row and seat
Please pick a seat   d5


Please find your way to your seats using this map...


        Seat 1 Seat 2 Seat 3 Seat 4 Seat 5
Row A    0        0       0       0        0
Row B    0        0       0       0        0
Row C    0        0       0       0        0
Row D    0        X       0       0        X

Enjoy your movie!
Enter output filename MTfrog.txt
more MTfrog.txt
4 5
0000000000000000X00X
```

## Message when the file does not open

```
./a.out

Enter the name of your Movie Theater file IDontExist.txt

File did not open...exiting
```