

# Seat Reservation Mini Project



You're a Java Developer and you're being tasked with creating a seat reservation program for a movie theater. The program is going to be a prototype, and as such doesn't need to hold data permanently in any kind of database or file. This will be a **console based program** written in Java that allows you to see the available seats and input the seat you wish to reserve.

## Functionality:

In order to manage the seats, it is **recommended you use some sort of 2D array**, but feel free to use what you think is best. However, the program should include the following functionality:

- Assume It is a small theater with **25 seats** (5 x 5 grid)
- **Print the the seats** in the theater in some sort of grid format and have some indication of whether or not they are reserved
- You **cannot double book** a seat
- When reserving a seat, you must **give a name for the reservation**
- Make sure to **validate the inputs** from the user (name isn't left blank, row number given actually exists, etc.)

## Example I/O:

You should print the seats and have a way for users to choose their seats. Below, on the left, there are currently no seats reserved and you have a user pick their seats. As well, on the right, you see that if someone tries to double book a seat, a message is printed.

```
=====
SEATS
=====

  1 2 3 4 5
  -----
1 | 0 0 0 0 0
2 | 0 0 0 0 0
3 | 0 0 0 0 0
4 | 0 0 0 0 0
5 | 0 0 0 0 0

Which seat do you want to reserve?
Row:
3
Column:
4
Name of person sitting here:
abc

=====
SEATS
=====

  1 2 3 4 5
  -----
1 | 0 0 0 0 0
2 | 0 0 0 0 0
3 | 0 0 0 x 0
4 | 0 0 0 0 0
5 | 0 0 0 0 0
```

```
=====
SEATS
=====

  1 2 3 4 5
  -----
1 | 0 0 0 0 x
2 | x x 0 0 0
3 | 0 0 0 x x
4 | 0 x 0 0 0
5 | 0 0 x 0 0

Are you finished reserving seats? (Y/N)
n

Which seat do you want to reserve?
Row:
2
Column:
2
Name of person sitting here:
xyz

-- SEAT ALREADY RESERVED --
```

Your console doesn't have to look exactly like the examples above, but should still display the seat grid and ask the user to pick a seat.

## Extensions:

- Be able to list the names of the people in a reserved seat
- Delete a person's seat reservation

- Store the seat reservations in a file, that way the same seat information is there even if the program is restarted
- Allow someone to move their seat to another (as long as that seat is still available)
- Use Java Swing to build a window-based applications
  - <https://www.guru99.com/java-swing-gui.html>
- Have a movie theater with multiple theater
- Add Show times
- Add Dates to reserve seats in advanced
- Add theaters of different sizes
- Add the ability to select a group size and time range
  - Give the user back the movies that are available and have enough seat for the group
    - Extra expansion on above, seats but all be next to each other

### Submission:

Turn in a zip or a github link of your project to the following email:

[jumpspartans@cognixia.com](mailto:jumpspartans@cognixia.com). Make sure the subject of your email is **Seat Reservation Mini Project**. Make sure the project is **turned in by the End of class on Friday**.