

Battleship

Due today (2/23/21) by midnight

Write a Battleship game that uses a 5 row by 10 column 2 dimensional String array to hold a game grid. Make each location equal to a tilda "~" to start, then place a capital "S" in a random location to represent the ship. Then ask the user repeatedly to guess the row and column of the ship. If they get it right, say "You sunk my battleship!" and end. If they get it wrong tell them it they missed and put an X in that location. Print the board before each turn. If the user enters values out of range, tell them instead of crashing and let them re-enter values.

Write and use a method to print your String array.

Don't make any part of the program hard-coded to the size of your grid except for the line where you declare the String array. In other words, use grid.length and grid[0].length everywhere you need to refer to the size of the array, not 5 and 10. Obviously in a real Battleship game you wouldn't print an S where the ship was, but we don't want to spend hours testing this, so we're printing the S.

Please test your program by firing some intentional misses. Does an X appear for each one? What happens if you enter a value that is out of range for either the row or column? Then, actually hit the ship to make sure everything is working before you think you are done.

Name your project Day61 Battleship and turn in a share link on the Google Classroom when you are done.

See sample output below.

```
Welcome to Battleship!

~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ S ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~

Enter a row:
3
Enter a column:
3
Miss!

~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ S ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ X ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~

Enter a row:
20
Enter a column:
-4
One or more entries is out of range.
Please try again.

~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ @ X ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ X ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
```

Optional Extra credit: add a "laser" feature which Xs out an entire row, and/or add a nuclear option which Xs out a 3 by 3 square all at once. Use -2, -2 as the row and column to activate the laser option and -1, -1 to activate the nuclear option. See sample run on next page.

Sample run with extra features:

```
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ S
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Enter a row:
-2
Enter a column:
-2
You have activated the laser. Enter the row:
0
X X X X X X X X X X
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ S
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Seriously, even with a laser you missed?
X X X X X X X X X X
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ S
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Enter a row:
-1
Enter a column:
-1
You have chosen the nuclear option.
Enter a row:
3
Enter a column:
8
X X X X X X X X X X
~ ~ ~ ~ ~ ~ ~ ~ ~ ~
~ ~ ~ ~ ~ ~ ~ ~ X X X
~ ~ ~ ~ ~ ~ ~ ~ X X X
~ ~ ~ ~ ~ ~ ~ ~ X X X
BOOOMMM! Got it!
```