

Programming Test: Battleships

Please follow the instructions carefully!

Please only use the language and version you have been instructed to use.

Do not store state in database or filesystem.

Do not use a framework.

The game logic and presentation must be separated.

Quality/readability of code is important and use OOP

Use auto loader

Should work with PHP 7.2

There is no need to store data in DB or FileSystem

In addition to working code that follows this spec and example closely you are expected to make your code elegant, easy to follow and the best you can do, i.e. separation of logic / object-oriented abstraction. But don't go object oriented crazy and create 20+ classes.

The Problem

You must write a simple web application to allow a single human player to play a one-sided game of battleships against the computer.

	1	2	3	4	5	6	7	8	9	10
A
B
C
D
E
F
G
H
I
J

Enter coordinates (row, col), e.g. A5

The program should create a 10x10 grid, and place a number of ships on the grid at random with the following sizes:

- 1 x Battleship (5 squares)
- 2 x Destroyers (4 squares)

Ships can touch but they must not overlap.

The application should accept input from the user in the format "A5" to signify a square to target, and feedback to the user whether the shot was success, miss, and additionally report on the sinking of any vessels.

. = no shot
- = miss
X = hit

Example output

*** Miss ***

```
  1 2 3 4 5 6 7 8 9 10
A - . . . . . . . . .
B . . . . . . . . .
C . . . . . . . . .
D . . . . . . . . .
E . . . . . . . . .
F . . . . . . . . .
G . . . . . . . . .
H . . . . . . . . .
I . . . . . . . . .
J . . . . . . . . .
```

Enter coordinates (row, col), e.g. A5 =

You should implement a **show** command to aid debugging and backdoor cheat.

Example output after entering **show**

```
  1 2 3 4 5 6 7 8 9 10
A      X
B      X
C    X    X
D    X    X
E    X    X
F    X
G
H
I      X X X X
J
```

Enter coordinates (row, col), e.g. A5 =

Please report the number of shots taken once game complete, e.g.

*** Sunk ***

```
  1 2 3 4 5 6 7 8 9 10
A . . . . . X . . .
B . . . . . X . . .
C . . X . . X . . .
D . . X . . X . . .
E . . X . . X . . .
F . . X . . . . . .
G . . . . . . . . .
H . . . . . . . . .
I . . . . . - X X X X
J . . . . . . . . .
```

Well done! You completed the game in 14 shots

Please email your finished solution zipped up without binaries.