# Programming Test: Battle ships

The purpose of this test is primarily to examine your problem solving skills.

**Please follow this spec carefully**!

You must write the game as a simple application with **web** and/or **console** user interfaces using **shared** game logic in the language requested. In the case of PHP developer should create a index.php file which loads (requires) the appropriate controller and logic. You can use whatever programming language you’d like as well as framework/s.

In addition to working code that follows this spec you are expected to make your code elegant / beautiful and the best you can do, i.e. separation of logic / object oriented abstraction. Comment your code as necessary.

### The Problem

Implement a simple game of battleships <http://en.wikipedia.org/wiki/Battleship_(game)>

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

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 and in .zip format not .rar, .7z, etc.**) and share a bitbucket/github repository. Git commits are also going to be reviewed.