

# Title

Battleboats

## Problem Description

Create a 10x10 array of integers, initialized to 0. A ship will be placed somewhere in the array, either by hand (the easy way) or by the computer (the hard way). In a loop, have the user fire at the boat as in the board game Battleship, by choosing a row and column to attack. Indicate to the user whether it was a hit or a miss. End the game when the user sinks the ship. You may choose whichever method you'd like to represent the ship and the score.

## Additional details

You are free to choose any size of ship you'd like. You may also place the ship by hand (that is, you can hard code where it is in the game board), but that would make it boring to re-play the game. The following code snippet shows you how to generate a random integer between 1 and 10. Doing so may be helpful if you want to randomly place a ship in the array...

//code snippet source: <http://www.cplusplus.com/reference/cstdlib/rand/>

```
/* rand example*/
#include <stdlib.h>      /* srand, rand */
#include <time.h>        /* time */

int main ()
{
    int iSecret, iGuess;

    /* initialize random seed: */
    srand (time(NULL));

    /* generate secret number between 1 and 10: */
    iSecret = rand() % 10 + 1;
}
```

## Testing

Place a ship by hand, and try to hit it. The game should not record any false hits or misses, and should exit when the ship is destroyed.

## Variations

You may decide to expand the game as much as you want. For example, instead of randomly placing ships, write a program to place them where you want, save that to a file, and have a friend open it and try to sink your ships. You may also want to display the array to screen. Unfortunately there is no \*simple\* way to clear the screen each time, so you'll just have to keep outputting to the console on new lines (or learn how to do it, it's a quick google away!)

## Time Target (easy mode: place the ship yourself)

\*\*\* less than 20 minutes

- \*\* 20-35 minutes
- \* greater than 35 minutes

For hard mode, where the computer randomly places ships: add 10 minutes to each time.

## Section

2D Arrays