Battleship (also **Battleships** or **Sea Battle**[1]) is a guessing game for two players. It is played on ruled grids (paper or board) on which the players' fleets of ships (including battleships) are marked. The locations of the fleet are concealed from the other player. Players alternate turns calling "shots" at the other player's ships, and the objective of the game is to destroy the opposing player's fleet.

Battleship is known worldwide as a pencil and paper game which dates from World War I. It was published by various companies as a pad-and-pencil game in the 1930s, and was released as a plastic board game by Milton Bradley in 1967. The game has spawned electronic versions, video games, smart device apps and a film.

Description

The game is played on four grids, two for each player. The grids are typically square – usually 10×10 – and the individual squares in the grid are identified by letter and number.[7] On one grid the player arranges ships and records the shots by the opponent. On the other grid the player records their own shots.

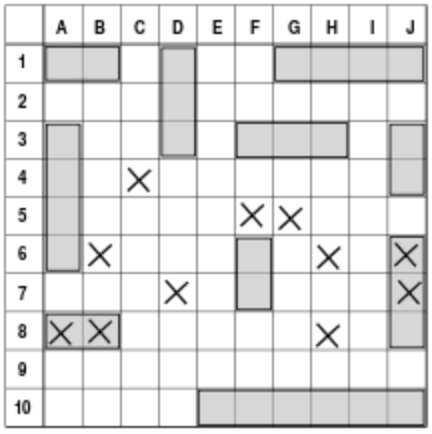
Before play begins, each player secretly arranges their ships on their primary grid. Each ship occupies a number of consecutive squares on the grid, arranged either horizontally or vertically. The number of squares for each ship is determined by the type of the ship. The ships cannot overlap (i.e., only one ship can occupy any given square in the grid). The types and numbers of ships allowed are the same for each player. These may vary depending on the rules.

The 1990 Milton Bradley version of the rules specify the following ships:[8]

#	Class of ship	Size
1	Carrier	5
2	Battleship	4
3	Cruiser	3
4	Submarine	3
5	Destroyer	2

After the ships have been positioned, the game proceeds in a series of rounds. In each round, each player takes a turn to announce a target square in the opponent's grid which is to be shot at. The opponent announces whether or not the square is occupied by a ship, and if it is a "miss", the opponent player marks their primary grid with a white peg; if a "hit" they mark this on their own primary grid with a red peg. The attacking player notes the hit or miss on their own "tracking" grid with the appropriate color peg (red for "hit", white for "miss"), in order to build up a picture of the opponent's fleet.

When all of the squares of a ship have been hit, the ship is sunk, and the ship's owner announces this (e.g. "You sank my battleship!"). If all of a player's ships have been sunk, the game is over and their opponent wins.



A map of one player's ships and the hits against them, from a game in progress. The grey boxes are the ships placed by the player, and the cross marks show the squares that their opponent has fired upon. The player would be tracking the success of their own shots in a separate grid.

Exercises

A - Create the Ship class

You have to create a Ship class. The internal implementation of the class is up to you. Nevertheless, the class should have at least one public constructor as defined in A.1.1, two public methods and a main...

1. Ship Constructor

Implement a public constructor:
public Ship(String startCoord, String endCoord);

2. isHit

Implement a method isHit that return true if the ship is hit by the missile:
public boolean isHit(String missileCoord)

3. isDestroyed

Implement a method isDestroyed that return true if the ship has sunk
public boolean isDestroyed()

4. main

Create a main class method that can be used to test your program

B - Create the other classes

You have to create some classes to that you have a full game.

C - Create Game Engine

// Should give position en you should say if it is .. or missed

Initialize the game

Create a Game Engine that create as many boat has defined in the BattleShip game.

B2.
B3.

D - Display Player Game Table

Score etc.

E - End Game

F - Improve your AI

G - Defensive programming

// try catch, etc.

H - Network AI