

# Sea Battle

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# Advanced programming B202

**My GitHub Repository:** [annatestova.github.io](https://annatestova.github.io)

## **Project Choice:**

I've chosen Sea Battle, because I really like this game. Me and my friends used to play it in our school days. So, I wanted to give the player/user of my game similar experience. The person has to draw a field on the piece of paper and place 10 ships on it. And then play against Computer, like we, as kids, were playing with each other. However, I've decided to make the gaming process a bit easier for a player, by showing the "gameComputerField", basically an empty field at first, that players draw in the beginning to count where they already "shot". So, a person won't have to continually count their "shots", which makes the game more fair.

## **Competitor Analysis:**

The main competitor for me is the game/app Sea Battle. They have a lot of unique interesting features that might diversify the game. On the other hand, those features and complicated, improved algorithm of "predicting" the person's ship placement, during game Person vs Computer, make a vast number of players feel, like the computer is "cheating".

## **Demonstration of OOP skills:**

### *1.Encapsulation:*

I wrote a code in one class Main. So, the Encapsulation method is poor in my project, which leaves room for the future improvement. However, some methods and fields are grouped, for example, "placeShip" and "countHits".

### *2.Abstraction:*

I've used "Countdown" to abstract the Countdown/10seconds, for the Person to draw their field. Method "InitializeField" abstracting a process of field preparation.

### *3.Inheritance:*

I don't have subclasses in my code, so the code doesn't use inheritance.

### *4.Polymorphism:*

Polymorphism is also not implemented in my code.

## **Technology Stack:**

I've used Scanner to input the users values, for example, the beginning the code is asking for a player's name or during the game time user should input the coordinates of the "shot". Also, I've used random, to generate random variables, for example, it is used during ship placing process. In Addition, I've added Thread method to create a Countdown.

**Industry relevance:**

Sea Battle is a game, so it belongs to the gaming industry. Games tend to relieve people's stress and to create positive emotions, which also brings back childhood memories. It is also a logical game, so people can improve some of their skills, playing it.

**Project Reflection and Conclusion:**

The biggest challenge in this project was creating ship placing process, I've spent on this part the most amount of time. Also, during the first starting points of this project, as an inspiration for a code, I've used article on habr.com "Sea battle" on Java for beginners from EgorYakovlevAcc. My project has a lot of things that might/should be improved. For example, the logical process of choosing the next "shot" after the ship is "hit", but I don't know how to correctly implement it right now. So, after the first "hit" the Computer is just checking free spaces and "shot" on a random coordinate. I faced a lot of obstacles during programming. I wasn't able to download any programs for Java on my Laptop. That is why, I had to use Online Compilers, that are not able to process the whole code.