Thank you Durva,

I would like to give you all a quick walkthrough of this game.

Battleship is a strategy type guessing game for two players. It is played on 8 by 8 grid on which each player's fleet of warships are marked. Each player has to place their ships on the primary grid. Each ship occupies a number of consecutive squares on the 8 by 8 grid. It can be arranged horizontally or vertically. The number of blocks each ship will take is determined by the type of ship and ships cannot be overlapped.

The five types of ships are:

1. Carrier which takes 5 blocks
2. Battleship which takes 4 blocks
3. Submarine which takes 3 blocks
4. Cruiser which takes 3 blocks
5. Destroyer which takes 2 blocks

The game is played in 2 phases Deploy mode and attack mode:

In deploy mode, players have to place 5 ships on their own grid.

In attack mode, players need to guess the position of enemy ships on the enemy grid. Whoever guesses all the enemy ships positions first , wins the game.

Now I would like to request jinav to explain the python implementation of the game.

We applied PCA which resulted in reducing the number of columns from 64 to 42​ components. 42 components explains 95.1% of the variability in the original data.​

80% of data is used to train the model and 20% of the model is used to test the model.We have used few classifier models and from that we can see random forest is giving us better results with higher accuracy score. For our current dataset, we have 118 datapoints and we got this result. If our datapoints are increased, then our results may vary.

Conclusion:

If we are using this game as a captcha, some people may find it interesting but at the same time it can be time consuming alternative to the captchas that we use.

As compared to other classifying models, we were able to conclude that random forest is giving us the better results. If data points are increased, random forest may or may not be better for our dataset.