

MEHMET TUGRUL SAVRAN
MIT 6.835 MINIPROJECT 3
BATTLESHIP
WRITEUP

Question 1:

Source code uploaded to Stellar and the live project is available at

<https://tugrul.scripts.mit.edu/battleship/>

Question 2:

For me, the biggest challenge was to get used to the provided codebase, because I found the rest of the project placing helper functions in correct spots.

- (a) I found this part to be the hardest one -probably also due to the learning curve.
Challenge was to tune parameters to help define “grabbing” each ship. I pretty much empirically tested parameter values for `hand.grabStrength` and `hand.pinchStrength` in a binary search fashion. I found the optimal values to be 0.4 for `grabStrength` and 0.75 for `pinchStrength`.
- (b) I found player’s turn to be the smoothest step. We pretty much only call the `registerPlayerShot` function whenever it is player’s turn and player says fire. I also found the `registerPlayerShot` to be rather straightforward, because it is easily broken down into different cases of game progression (i.e. if game is over, you have the computer generate a speech in that context).
- (c) For the CPU’s turn, I also didn’t run into many problems excluding the “learning” curve and getting familiarized with the given codebase.

A huge challenge for me was that `processSpeech` was often lagging, and trying the advice on Piazza did not work for me.

Question 3:

I added 3 features.

- 1) **Addition of speech variety:** Instead of simply saying “hit” or “miss”, the game now randomly chooses among a list of vibrant comments for each context. For example, if the player sinks one of CPU’s ships, then CPU chooses its response among ***"I never liked that ship anyways", "But you are still bound to lose", "My ship's soul will haunt you", "Farewell my beautiful ship"*** phrases. I repeated this process for every process that calls `generateSpeech`, so that there is more personality to the game.
- 2) **Counting of consecutive misses of the CPU:** If computer misses more than 4, it will start complaining about its abilities! It will choose its response among ***"What the hell, I have been missing for the past 3 decades!", "I have been missing my shots a lot. Maybe A.I. isn't that good afterall", "Missed again, again and again. I am so bad at this"***
- 3) **Detection of lying from the player:** Inside the `registerCpuShot` method, I checked whether the result was a hit, and if so checked whether the `playerResponse` was miss. In

that case, CPU berates the player by choosing its response among: ***"Lies lies lies. You had told me I missed!", "Why are you not being truthful to me?", "You are an insecure, lying loser", "Lying won't help your miserable fate."*** phrases!