"The ability to figure out your opponent's hand based on his betting pattern is a crucial skill." - Daniel Negreanu

For this year's project we chose something quite simple. It is a zero-sum game, with just a little bit of imperfect information. You probably know it - it's called poker. Okay, maybe it is not that simple, but don't worry, we will simplify it a lot. However, we think it will still be pretty challenging to master...

We will just play heads-up – the game of 2 players. Instead of cards, we will use regular dice. Each player rolls a die and gets a number 1-6. If a showdown happens, the player with higher number rolled wins. In case of a tie, the pot is split between the two players (nobody is winning or losing anything).

The betting actions are also very simplified. Player 1 is on the small blind (SB) and player 2 is on the big blind (BB). The worth of SB is 1, the worth of BB is 2. In every hand (round of the game), there is a fixed parameter B (distributed randomly between 3 and 18 and known to both players), which indicates the value of the bet.

Player 1 is first to perform an action. He may either FOLD or BET. If he folds, he loses his SB (outcome -1), player 2 wins it (outcome 1) and the hand ends without the players knowing what their opponent rolled. If player 1 bets, the player 2 is to decide. She can either FOLD or CALL. If she folds, she loses her BB (outcome -2), player 1 wins the BB (outcome 2) and once again the hand ends without revealing to your opponent what you rolled. If she calls, both players are informed what the other one rolled and then the player who rolled the higher number wins the bet (outcome B), while the other one loses it (outcome -B). If they both rolled the same number, the game ends with both players getting a 0.

The tournament will consist of (roughly) millions of hands against each opponent from both SB and BB. Your task is to program a function that decides how to behave depending on whether you are on SB or on BB, what you rolled, what is the value of bet B and who is your opponent. You are therefore encouraged to study your opponents' behavior and try to abuse their mistakes. Don't worry though, even a program that ignores the opponent entirely can earn you a lot of points. Speaking of points – as this is a tournament after all, you will obtain points based on the outcome of your program.

May the odds be ever in your favor!