

IGT Project Strategy Report

Team 6

Brief explanation of the strategies we have explored-

1. Delayed bidding: Here we estimate the length of the auction and wait until the very end of the auction to place our bid. By doing this we don't give any chance to the other player to react to our bid.

We try to estimate the total duration of the auction using the parameters of the distributions (exponential with mean 30 seconds and normal with mean 5 and std 2) mentioned in the game rules.

2. Immediate bidding: As the name suggests, we place a bid immediately and wait for the next turn, hoping that enough time is left for us to raise our bid.

We've explored multiple ways of raising our bids, for example raising our previous bid by 0.02 as long as it is greater than 1.125 times our previous bid, if not then submit $1.125 \times \text{previous bid}$ as our new bid.

The strategy which we have picked as our final submission is delayed strategies with probabilistic delay using the same probability distribution as the communication delay (*Normal with mean 5, std 2*). We raise the bid by either 0.01 more than the previous bid or 1.125 times the previous bid.

This strategy works well for auctions with slightly higher durations. It falls short in cases where the duration is very small but fares well around the average time duration.

We chose delayed bidding over immediate bidding because based on experiments, delayed bidding performed slightly better than immediate bidding.