

Making Your Bids, CS 4500, Fall 2021

GROUP NAME: Paperweights

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TEAM LEADER: John Linck

DATE BID SUBMITTED: 10/01/2021

Using the form below, please list the three possible projects your group wants to build. List your FAVORITE project first, your next favorite project second, and the third favorite third.

1. Our favorite project is based in this video: Flaming Arrows Game

Inspired by that video, we plan to develop software that will do this:

The software will allow two players to play the Flaming Arrows Game as described in the video. The software will only allow valid moves and will allow various board sizes and starting configurations to be chosen from to start a game. The game will be played by dragging and dropping pieces on the board and clicking squares to shoot the flaming arrows. We will also allow a single player to play against various levels of an AI, such as Easy and Hard.

Our group would do a good job on this project because:

Some members have experience creating games that are meant to be played on a single computer and have some experience creating GUI for such games. Also, we are all interested in exploring the Flaming Arrows Game in such a way to write an AI that would be fun and interesting to play against. Our group would be determined to make this game a joy to play against others as well as against the computer.

## 2. Our next project is based in this video: The Dollar Game

Inspired by that video, we plan to develop software that will do this:

We would develop software where the user can attempt to find solutions to the Dollar Game using various configurations. We would give the user two modes in which to play the game. First, we would offer a story mode where the user is given a series of levels in which each is harder to solve than the last. Then we would have a "Set your own difficulty level" mode where the user can specify configuration such as the number of nodes and edges to create a puzzle to solve. The game would be played in a GUI where the user can click on nodes to donate money to neighbors until it is solved.

Our group would do a good job on this project because:

Our group believes that a Dollar Game program would be an interesting game to play and explore. The possibility to create a polished application that can be used by ourselves and others to learn about the game is a good motivation to make a good project.

3. Our next project is based in this video: The Birthday Paradox

Inspired by that video, we plan to develop software that will do this:

Our software would allow a user to explore the unintuitive answer of the birthday paradox. The user can run simulations using various configuration options such as the number of people to check and the number of birthdays to match. After the simulations, we will output the results in a pleasing manner to be reviewed.

In conjunction with the initiative math of the birthday paradox, we will have software that allows a user to explore the Monty Hall Problem ([https://en.wikipedia.org/wiki/Monty\\_Hall\\_problem](https://en.wikipedia.org/wiki/Monty_Hall_problem)). We will allow a user to play the game many times and allow them to make decisions. We will track their stats such as how often they won and how often they switched doors. Finally, we will let them run simulations of the game where they always switch or always stay, and show the user the results so that they can be compared.

Our group would do a good job on this project because:

Our group finds the two problems fascinating to explore and will want to make great software that will make the problems fun to explore for others. We have some experience creating GUIs and will do a good job creating a visually appealing program to view results of the simulations.