CS 172 Final Project proposal

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The problem we will be trying to solve is creating our own version of the game 2048. The game consists of a board that is 4 tiles wide and 4 tiles tall. The game starts with two tiles on the board, each with a “2” on it. The user must press the arrow keys to shift all of the tiles to the respective side of the board. Each time this happens a new “2” tile will be added. When the the tiles shift, if two tiles that have the same number are pushed into one another, they will combine to create their respective multiple of two. The goal of the game is to get one tile up to the number 2048.

We will begin to solve this problem by writing an algorithm to move and combine the tiles in one direction, we will then modify the algorithm to work for all four directions. Our design is not fully completed but we will certainly be using a two dimensional array to represent the board. We may also use a tile class for each number tile. We will have an ascii interface that is displayed in the console, we will use various symbols to represent the board. The console will be cleared each time the board is updated so it appears as if only the tiles move. We will also implement a system to save the user's progress and the high score to a file. This means that if the console is closed in the middle of a game, it can be opened up again and the same board will be displayed as when it was closed. It will also save the highest score, so after several games have been played it will remember the username and score of the best game.

Challenges we anticipate primarily relate to the possibility of biting off more than we can chew. We do have a tendency to be ambitious; you remember last semester... However we believe that this semester's project will be manageable and not too complex. We don't plan on requiring the creation of any PhD level artificial intelligence algorithms… Realistically I see most of our problems being related to getting the board to output and display correctly as well as the saving mechanics not working right.