Culminating Project Reflection – Sherry Yuan

The accumulative progress I have made in 6 weeks have come together and become the largest and greatest project I’ve ever done. I felt very proud of the functional logic of the game, the graphics and fancy images in the game, and the creative improvements I’ve made upon the existing game rules, lastly, I’m proud of the customized property of the game, where players are able to choose the right game grid dimension for themselves.

The challenges I met during the process was traversing and merging grids diagonally, I overcame this by finding patterns in how the node move from one to another, then come up with a generic code that can traverse through 2D array diagonally at any size. Secondly, when I was making pseudocode for the logic of 2048 game, I met many difficulties in how it works and how to achieve it by looping through the 2D array. For example, when [2, 2, 0, 2] is merged to left, the resulting array should be [4, 2, 0, 0], but not [6, 0, 0, 0]. I spent 2 weeks figuring out the ways to achieve this type of merging generically, which I have described it in the proposal.

During the process, I’ve received critiques from Julia and Mert, Mert has found a bug on score increment. For instance, the score shouldn’t be updating when user’s action didn’t make any changes on the grid. I fixed this bug by using another 2D array (lastGrid) to store the user’s last move, and compare it with the current move, if they are equal, then score would not increase. Julia’s advice was to make animations when the grid is merging, I couldn’t achieve the animation, because all the merging was done in a loop at once, the tracking of which grid moves and makes animation base on that is nearly impossible to be done in 6 weeks.

Even though the game is pretty good, several improvements could still be made to this game, firstly, the sound effect for each user action. Secondly, the button animations when the mouse enters button.

In the process of making the game, I’ve learned many Java concepts, first thing was the copying of array. For example, when assigning array1 = array2; Whatever changes made to array2 will also be made to array1. I have also learned Java graphics and became gradually familiar with how paintComponent and actionEvents work in the process of making the game. Moreover, I’ve learned about traversing array in any diagonal directions.

In this 6 weeks’ time interval, I’ve encountered many problems, some of them were easy, and some of them were hard to figure out. Even though this has brought me frustrations, but making the game 2048 is a great practice for logic and problem-solving skills, I enjoy this project.