Qifang Cai ID: qcai 15-112 Term Project

What I have designed in this project is a traditional snake game in a 3D setting. The snake goes on 6 surfaces of a cube. The user has a little map to show the reference, plus the location of the food. The game is inspired from some YouTube videos that have done a similar job. I feel that my game is a simpler version of them.

Four items are available for the snake to eat: drug, clock, apple and heart. Drug increases the speed, clock slows down. Heart increases HP and apple has no special effect. All of the items will increase the total score by 10. The highest historical score will be recorded and the user has three HP (by default) to lose to eat as much items as possible.

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Core code:

I have several major problems when creating the game.

First, I have to create a 3D ground in gray color. The lines have to face a focus point to create 3D feeling. It takes me a long time to find the right algorithm that line up the squares. On the gray square I have to display the eatable items and the tail of the snake. Everything has to be in the right location. Debugging the location mistake is a great pain.

Second, I have to include a mini-map that can greatly help the user find their orientation. I find the mini-map to be challenging as well. To do that, I draw the frames and color the frames separately. Each oval on the frames has to be calculated and to be placed on the right place. Otherwise, the map is useless. I spent a long time to debug the map.

In terms of the algorithm of snake game, I borrow the idea from the Snake homework, but I rewrite the program totally from scratch by myself. As a result, the algorithm is separated into different classes that interact with each other. I think my algorithm is clearer.

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User interface:

The game includes a welcome menu that shows couple options for the user. Users can adjust the game speed from the option menu. There are instructions for adjusting game speed and how to play in the game. Basically the users can adjust the clock speed of the game. Everything will change accordingly. Users have “back” option in the other menus and game. To exit the game, users can also click on the “quit” from welcome screen. Finally, the game has the feature to store the highest score. The file “score.txt” in “Media” is responsible to handle the job.

Hope you all enjoy this game!