Assignment 5 Proposal

For the assignment 5 I will design a mining game. The game has three parts: the miner, the map, and the mining camp. The basic layout of the map will be a grid of squares of different colors. Each color corresponds to a different depth of resource material. The basic premise is that the player will move a game piece (“the miner”) with the keyboard to position the “miner” close enough to resource material so that it can mine. At the beginning of the game the miner will be positioned at the mining camp’s drop off point. This start location will consist of a building which is static and a drop off point which is positioned on a grid square near the camp.

The game will be a race to mine out all the resource material using mouseover events and keyboard commands to move the miner into position. When the miner is close to a given area of resource material, the user can toggle mining with mouse click. When the mouse enters the area with resource material it will mine one unit of the resource material. It will only mine an additional unit of resource material once the user moves the mouse out of that square and into another one. Every time that a unit of resource material is removed from a grid square the cargo of the miner is incremented. The miner will have a maximum cargo capacity and once it reaches that capacity it will be unable to mine anymore until it goes back to the drop off point.

The view screen will be 900x900, in terms of organization I will produce the grid lines using a loop and equidistant lines similar to the Cat & Mouse program. Then I’ll create the vertices of the squares by using the existing grid lines. I will also a create color array to determine which color to make each of the squares. In addition I will create a 30x30 array to keep track of what resource level all the squares are on. By using the event.screenX and event.screenY I will pick the square corresponding to the clicked location and then modify the resource value and the color of the square that was under the mouse cursor. I will have a Boolean value isSameSquare to determine if the square that the mouse is on is the same as it was previously or a different one.

I will also have to check each time that the miner moves to determine if the square it is trying to move into is at a resource level of zero. To do this I will need two variables to keep track of the miner’s posX and posY and check the square adjacent to it. Because the canvas is square I should be able to determine the corresponding grid square to check the square’s resource level.

The mining camp will be a rectangle located in the bottom corner of the map pointing diagonally toward the center of the map. Some of the grid squares near the mining camp and drop off point will start without resources in them so that the miner can move around as soon as the program starts. The squares will be color coded to show how many resource material are at that location. Blue will be the highest(5) then Green(4) then Yellow(3) then Red(2) then Brown(1) and Empty will be Black(0).

When the miner’s cargo is full the player cannot mine any more squares and must move the miner back to the drop-off area. When the player moves the miner into the drop-off area the cargo is reduced back to 0 and the miner can resume mining. I will on make an alert when the map is mined out to notify the player that the game is concluded.