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CS 162 – Fall 2019

Final Project – Design and Reflection

Preliminary Design:

I plan to make a sort-of Oregon Trail-esque game. The plan is for the player to be able to move through the Space objects until they reach a final destination. The Space objects will be arranged as a "web" with branching paths to each node and each node will represent a type of "terrain" that the player must move through. Each of the different types of terrain will be derived from the Space abstract class and have virtual member functions that have unique effects to that terrain type, when the player enters or moves through them. The game will focus on balancing resources that can be exchanged between each other as the player moves through the node web. The goal of the game, other than to reach the end destination, will be to achieve a high score based on the speed that the player can arrive and how much "cargo" the player successfully delivers before a time cutoff.

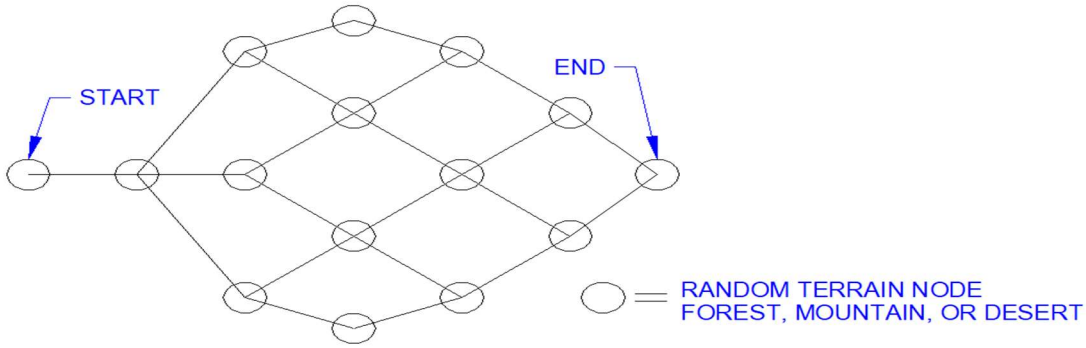
Player Class

The Player class will be a single object that contains all of the necessary member variables and functions to represent the items and location of the player. The item/resource types will be stamina, supplies, equipment, and cargo. Every day the player will need to expend stamina and resources to move around, depending on the current type of space the player is in. The player will have actions available to them that will allow them to exchange or gather more resources, depending on what they need at the time to complete the game. For example, the player can spend time and supplies to regain stamina by "resting" or spend equipment to "hunt and gather" and receive supplies back.

Space and Space-Derived Classes:

The space class will be abstract and have some inherited and some virtual functions. It will contain 5 pointers that correspond to one of the five potential adjacent nodes that the player can move to. Not all pointers will be available moves depending on node location. The derived classes will be Forests, Deserts, and Mountains.

The "web" of Space classes will be arranged like this, where each node is of a randomly generated type:



Reflection

The name of the game for this project, for me, was cut cut cut features. My preliminary plan is heavily cut down from what I originally wanted to make but was far too ambitious. Once I started planning, before coding, I had to almost immediately start cutting features in order to have a game that was do-able in the time allocated. In addition, I made the structure of this program too complicated. In the effort of trying to modularize, I think I over-modularized. The Player class was completely unnecessary, looking back. Having a Player class in addition to the Map/Game class forced me to circularly reference Space objects and Player objects, which both existed within the Map/Game class but had to interface with each other, which defeated the purpose of the original modularization intention. All of the member variables in Player should have been member variables of Map/Game and it would have made everything more straightforward.

Otherwise, I am actually fairly happy with the result. Despite cutting features like additional space class "town" nodes where the player would have been able to shop, I feel like the game still has actual gameplay and some strategy and is set up in a way that would allow additional features to be added if desired.