Project Overview

**Outline.**

This game project will be a barebones colony sim/management title, it will be a 2D top-down game. This will involve the player spawning with a randomly generated map and a small selection of colonists; their goal will be to keep the colonists alive. The player will be able to build structures on the map by assigning build tasks for the colonists but each task will require a number of in-game resources which they will have to collect from around the map, for example, if the player wants to build a wooden house then they will need to cut down a tree to get the raw wood. I aim to go into depth with the map generation similar to titles like dwarf fortress I aim to create a multi-level map (a map with multiple layers on top of each other). Starting with the ground level (Level 0), I would like to have layers ranging from (+3 -> -3) this will allow for the player to have more options within the game.

**Aims.**

I aim to work on a game with a randomly generated elements, for example, the map, it will consist of different tiles overlayed on a grid. Each grid square will be a specific terrain object, e.g. a tile of dirt and so on.

I also aim to test out a number of different pathfinding algorithms using the map’s grid system attempting to determine which pathfinding algorithm is most effective. Comparing the shortest path and shortest time; with the careful consideration about optimisation.

**Implementation Strategy.**

I plan to implement this game using C++ and SFML. I am familiar with C++ and have developed a few items using this combination and am more than confident in my abilities to program with this setup. SFML is a library which allows for the easy implementation of 2D games with useful features ranging from window management to sound implementation both useful items to speed up development.

I plan on using the agile methodology for the game implementation; wherein each week will be a sprint so, on Monday I will plan and design my tasks, Tuesday to Friday will be dedicated to the building of the game and Saturday and Sunday will be for testing and reviewing the implementation as well as, fixing any issues which have arose.

**Main Gameplay Mechanics.**

* Random Map - At the beginning of the game a random map will be generated for the player.
* Colonists - These (also randomly generated to a degree) will allow for the player to manipulate the map.
* Harvest Resources - Resources will be spawned on the map and the player can use their colonists to collect these.
* Base Building - The player will be able to create custom structures and fill them with furniture to keep the colonists safe and happy.
* Random Events - There will be some random events which may occur during gameplay, mixing things up a little bit and keeping the game interesting.

**Similar Titles**

Dwarf Fortress - <http://www.bay12games.com/dwarves/>

Rimworld - <https://rimworldgame.com/>

Prison Architect - <https://www.introversion.co.uk/prisonarchitect/>