**Spike:** 5.P

**Title:** GridWorld Spike Report

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**Goals / deliverables:**

The goal of this project was to create a game called GridWorld. This game had to present the knowledge and use of a Game Loop. The game needed to have a Player, a Map, Movement and a game loop. The objective of this game was for the player to traverse around a grid, avoiding traps and reach the treasure, the win/lose conditions is either the player reaching the treasure (which counts as a win), or the player hitting a death zone which will result in a game over. Also we needed to include a UML diagram of the core game loop.

**Technologies, Tools, and Resources used:**

For this task I used my own programming knowledge to create the foundations such as the movement class, map class, player class and everything is being executed in Main. I also used draw.io to map out the UML diagram of the game loop.

**Tasks undertaken:**

For this task I first created a program using Jetbrains Rider and Visual Studios (both IDE’s), and this project I created a couple of classes that perform their selected tasks, these were:

* Map: Generated the Players level, I manually placed the death areas, Players Start and the Treasure and performed the logic for resetting the grid sections when the player traversed the world and the game loops break conditions.
* Player: The Player class is simple, it simply holds the players position in the Game World, this is changed in the Map Class when the Player moves throughout the game world.
* Movement: This class handles the movement of the player using the N, S, E, W keys indication North, South, East, West and this class controls the players movements in the world.

**What we found out:**

I learned more about 2D arrays and how to traverse from one section of the array to another. This really helped me understand 2D arrays and how a player would traverse a grid world, especially moving up and down. I also learned about loops and breaking up code to perform their specific tasks, trying to make it more modular and have each task act independently. Some tasks may require knowledge of data from another class (like the map needing to know the players position).

**Open issues/risks** [Optional – **remove** heading/section if not used!]**:**

For the Player Movement, there is an issue when the directions for the Player to take is semi in-correct. When the Player is heading East, it doesn’t show the correct directions.

A screenshot of a computer

Description automatically generated

Another issue I had was when moving east on more, instead of appearing back in the original position, he players position would be drawn as blank instead, however if the player moved North or West they would re-appear.

A screenshot of a computer

Description automatically generated

**Recommendations** [Optional – **remove** heading/section if not used!]**:**

I would draw another Grid that would remove the Death zones so the player would need to guess where to go instead of seeing it. For the errors, I would re-structure the order of the code as the issue was due to the player’s previous position not matching the Generated grids current I and j in the loop.