DATT 3700: Collaborative Project Development, *North Bear* (in development)

Design of Gameplay Mechanics #1

Block Mechanics

Live space implementation of a physical “ice block” that influences the state of the game. Players not playing within the game (Virtual Reality) can interact via live space by playing with the blocks by building specific block formations that changes the weather effects of the game.

Some ideas for the block formations:

> **Optimally built blocks**: the weather inside the game shows great management of the environment, and objects (ice sheets, icebergs, weather, etc.) in game will have longer lifespans, so players are less prone to having objects breaking and being more durable when playing with emphasis that the weather will be heavily snowing and cold.
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> **Mediocre built blocks:** the weather inside is a neutral state where there is some snowfall and objects have reasonable lifespan for players to play within. However, there will be less objects for the character to jump upon and obvious signs of climate change may be on the horizon.
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> **Poorly built blocks:** the weather inside the game shows a lack of concern for the environment; with the game space being heavily lighted (sunny) and objects in the game lacking as a result of the blocks being poorly built, and the environment poorly managed. Objects in the game space will have poor durability, breaking a lot more easily and the game significantly harder to win.

Comments:

- Unclear how the blocks are built and connect to the game space
    - 3D printed? Created by hand via Arduino? Sensors?
- What is an optimal block vs. a poorly built block?
- How many players can affect the game space outside the game? What if one player creates an optimal block but another creates a poorly built one?

Game Mechanics

Ice Sheet Durability: Depending on how many steps/jumps the player applies while atop an ice sheet, the ice sheet will lose some of its health and depending on the

current state of the ice's health, there will be animations to indicate cracks and change in the ice sheet.

Blocks: Depending on blocks built, skybox, objects, and particle systems (i.e. snow, weather, etc.) will change accordingly.

Ice Sheets: Ice sheets will be spawned randomly throughout the game and have a lifespan based on a time based on block states.

Fish: Fish spawns will be placed in fixed locations for the player to collect. Over a period of time the fish will "rot" or be lost in one's inventory if the objective to reach the end of the game is not reached within a certain time limit. One cannot proceed further in the game without first collecting the required number of fishes. Ideally we want to make getting these fish more of a challenge, so obstacles will be placed to in order to get them. Fishes will "rot" a lot faster under poor weather conditions.

Water/Ocean: Players are capable of going in water but their movement will be greatly slowed, so it is not recommended they go in the water. (Additional: depending on how well things go, we would like to add some buoyancy to the water making it seem more realistic to the game, however that could be a tricky mechanic)

Game Finality: If the player has not yet collected the required number of fishes within the certain period of time, they will lose. The player cannot proceed to the end without first collecting a certain amount of fish in that time frame. Once the player has collected all fish to reach the end, players will prompted to move to the next location where they will see a group of hungry cubs (of what may be their own) and have the option of sharing what they have collected over the game or not. Depending on how efficient the player was able to collect these fish, there will be enough fish for all cubs and the player. However, a poorly played game could result in no fish for anyone. If the player takes too long to decide to share their fish, then the latter will occur, ending the game.

Comments:

- Meet up with game design and programming groups to determine how lenient the ending is. If the player has not yet collected the required number of fishes within the certain period of time, the bear dies? Restart the game?
- Figuring out how to implement random ice sheet spawns. How does the implementation for spawning random ice sheets work? What if an ice sheet spawn inside an existing one?
- "Rot mechanic" potential problems. What if the player can no longer collect anymore because all fishes have rotted?