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Signed: _____ Leyre _____

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Link to Repo

<https://github.com/Kornii-Kuvaldin/SD2-Game>

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Game Details

Summary of the Game

It's a 2D, 2-player game. Two players race each other on who can make the most money in a limited time. To gain the money the player will need to mine certain precious gems that they can find scattered through the underground while they mine.

Controls

Movement

Since this is a 2-player game, meaning that two players needed to be playing at the same time on the same computer, we needed to bind different keys to the different players. We decided on the basic WSDA and the Arrow Keys for the movement.¹ An interesting feature that we added is that since they are going to be digging down the player instead of coming down with gravity like in other games will go down when the down key is pressed. This is because the player might want to go up and down while they are digging.

Player 1

Jump: Up Arrow

Down: Not Yet Implemented

Left: Left Arrow

Right: Right Arrow

Player 2

Jump: W Key

Down: Not yet implemented

Left: A Key

Right: D Key

Challenges

A challenge that we found with the movement is that when two keys were pressed at the same time to move both characters the computer only registered one of the keys being pressed, so only one character moved at a time.

¹ To see where we got the key enums for binding them go to first link in the Bibliography

We managed to get an idea of how to solve this thanks to someone who asked the same question on Stackoverflow.com. Thanks to the answer from Michael Myers we managed to get an idea of how to solve this problem.

To do this we needed to create a HashSet that keeps track of what buttons are currently being pressed. And then used three different methods, one that added the key being pressed to the set, another that removed the key from the set once released, and another that decided which action to take depending on what key was being pressed.

Mechanics

Ore Value

There are 5 types of Ore that the Players can find while digging: Diamond, Ruby, Lapis Lazuli, Emerald, and Amethyst.

We wanted to make this as realistic as possible so we searched the Internet to see the value of these different ores. Since these are raw uncut precious rocks we took the price of what they sell on the internet and did an average to see what should be the cheapest and which one should be the most expensive. We ended up with these averages:

Amethyst: $(27.7 + 32.90 + 30.00 + 11.95)/4 = \text{€}25.64$ ²

Diamond: $(40.10 + 84.72 + 40.04 + 66.73)/4 = \text{€}57.90$ ³

Lapis Lazuli: $(18.00 + 16.00 + 23.90 + 50.49)/4 = \text{€}27.10$ ⁴

Ruby: $(24.91 + 27.41 + 24.32 + 29.70)/4 = \text{€}26.59$ ⁵

Emerald: $(27.53 + 27.44 + 27.20 + 35.53)/4 = \text{€}29.43$ ⁶

Based on these results the order from most valuable to least valuable would be:

1. Diamond
2. Emerald
3. Lapis Lazuli
4. Ruby
5. Amethyst

How much they are worth in in-game currency is yet to be discussed. Most likely it will be decided by the time of the next review. Another thing to keep in mind is that these ores are subject to change as we go through the project some may disappear and some might change.

² To see where the prices come from see Bibliography link 2 to 5

³ To see where the prices come from see Bibliography link 6 to 10

⁴ To see where the prices come from see Bibliography link 11 to 14

⁵ To see where the prices come from see Bibliography link 15 to 18

⁶ To see where the prices come from see Bibliography link 19 to 22

Challenges

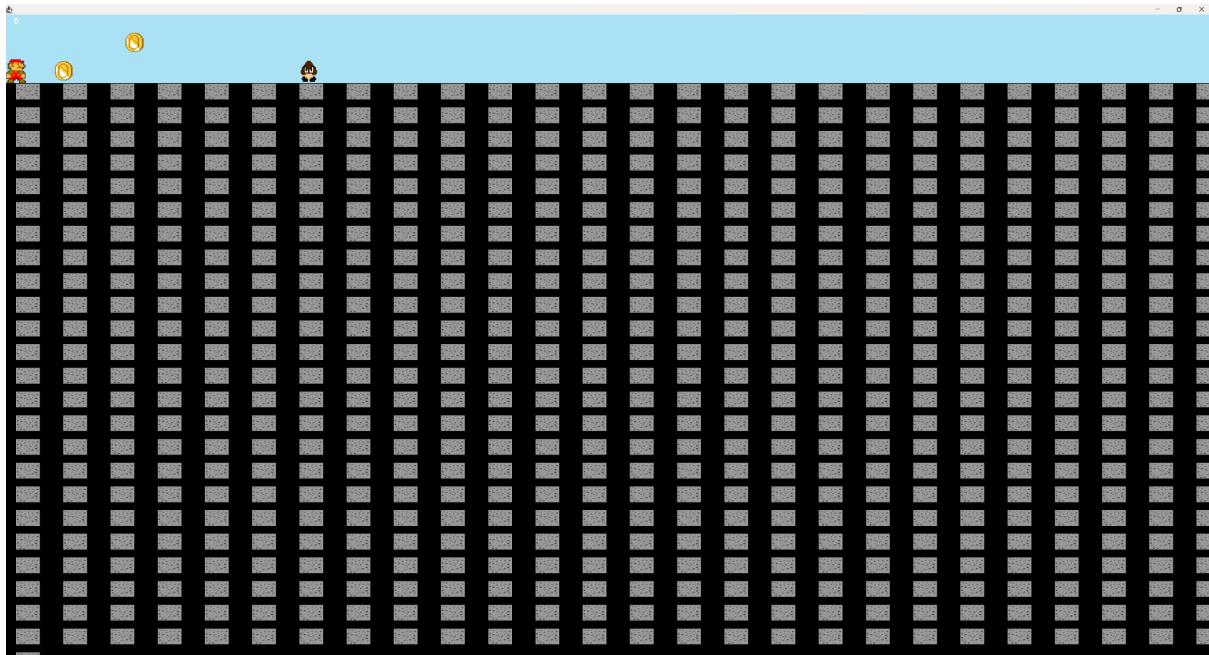
One of the challenges in calculating this average was that the prices of these gems varied a lot since it is not just putting a price to it and every single one of them has a similar price. No, these gems depend a lot on their composition, weight, clarity, composition, and a lot of other stuff. So every gem people find is not the same so the prices that were shown above might not be an accurate evaluation of how much they are worth, but it is the closest thing we could do.

Ground Generation

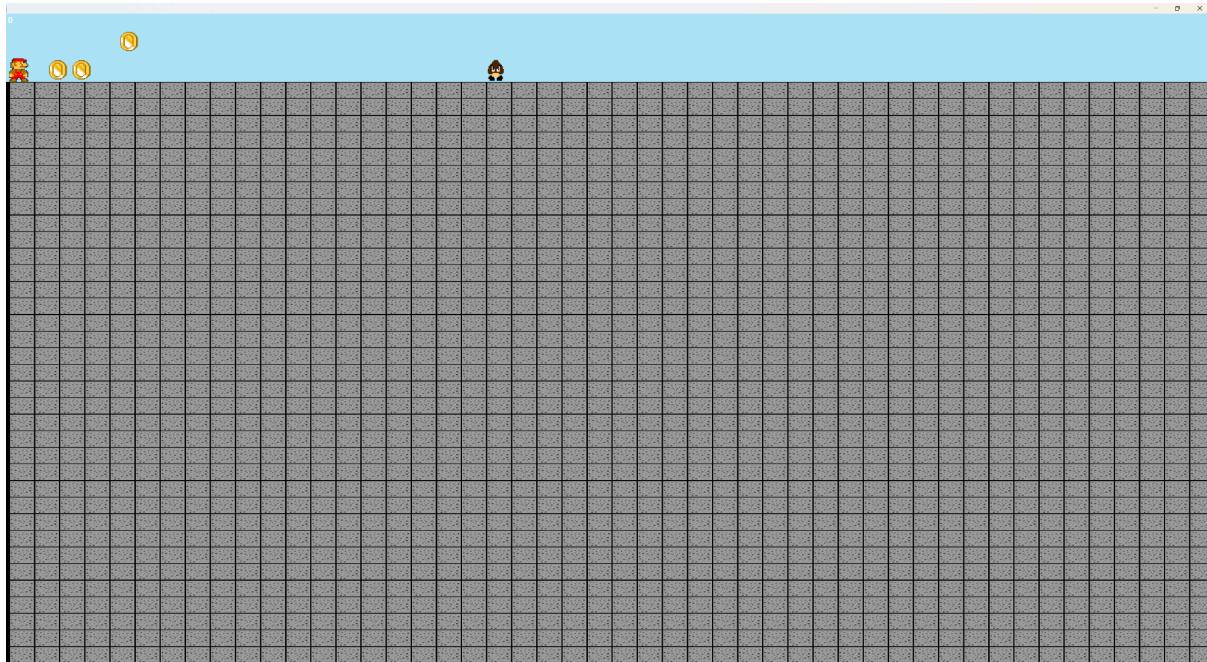
Since the ground the player is standing on cannot be the background. It needs to be generated as a sprite.

Challenges

This is how the game looked when we were trying to code the ground generation.



This was not due to a coding error on our part but it was because we did not take into account the image we uploaded to the image folder. This image is not only the block in itself, but also a lot of blank space, so when we coded it so that it moved to the next row according to the image width and to the next column according to the image height it will also draw those blank spaces even though we were not able to see them.



We managed to solve this by indicating how much space we wanted between blocks manually. The small spaces between the blocks that you can see in the image above are done on purpose for us and the player to be able to see how many blocks there are

Half-Done

Mining

This game is all about mining to collect the ore hidden underground, so mining is one essential feature this game needs. How this code works for now is that when the player collides with a block it will delete in a set amount of time depending on the hardness level that we put into the block.

Challenges

This is a half-done mechanic of the game because we have yet to implement the methods that allow us to set the time it takes to mine a block and the method that says what happens when the block is broken.

Leaving for the Next Code Review

Mechanics

Ore Generation

For this mechanic, since the players need to interact with the block we cannot make it the background so we can not just make it one single image. Therefore we need to create a code that places every block itself.

In addition, we also need to decide how many blocks we want in total how many of them we want to be ore, and how many of each ore the game will generate.

Anticipated Challenge

The first challenge that occurred to us when we were thinking about this was that we needed to find a way for others not to superimpose each other (One block on the same as the other). This part of the project is yet to be coded so we have yet

Time

This is a game where you are racing the players race against each other to see who can get the most money in a set amount of time. This means that we need to set a certain amount of time for them to be playing. At first, we thought that 5 minutes would be okay, but after some thinking, we thought that would be too much and we are debating between 1 minute and 30 seconds and 2 minutes and 30 seconds.

But this like the Ore Blocks is subjected to change. This is because it all depends a lot on how many blocks we want to put on the game and how many of each ore is the maximum we will allow the game to generate.

Let me explain it is basically like a ratio let us say that there are a total of 10 blocks 5 of which are Ore. That means that it would not take a lot of time to mine it since there is little to mine. Therefore little to do.

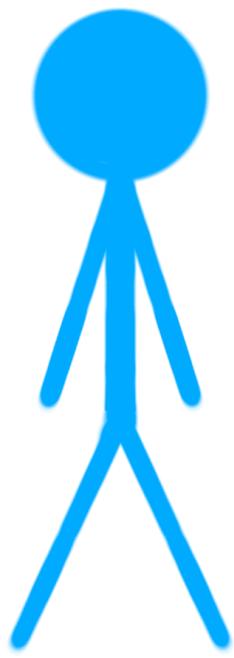
All in all, the time will most likely be constantly changing until we decide on how many blocks there will be in the game.

Anticipated Challenge

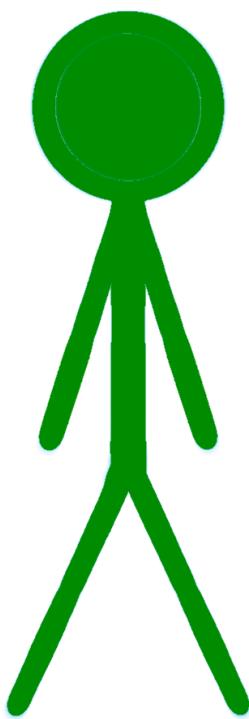
The challenge of this part is figuring out what is too little time and what is too much time. We do not want the players to feel like they have been playing for eternity with

Basic Graphics

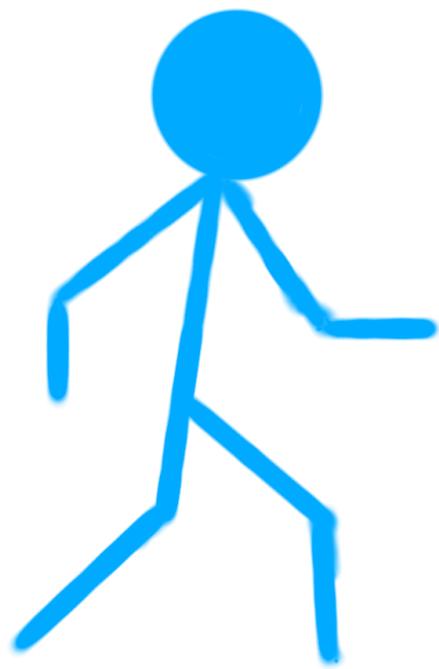
Player 1 (Not Moving)



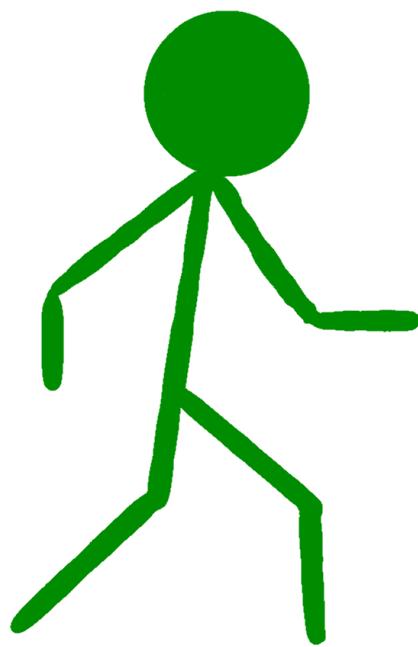
Player 2 (Not Moving)



Player 1 Moving (Option 1)



Player 2 Moving (Option 1)



Player 1 Moving (Option 2)



Player 2 Moving (Option 2)



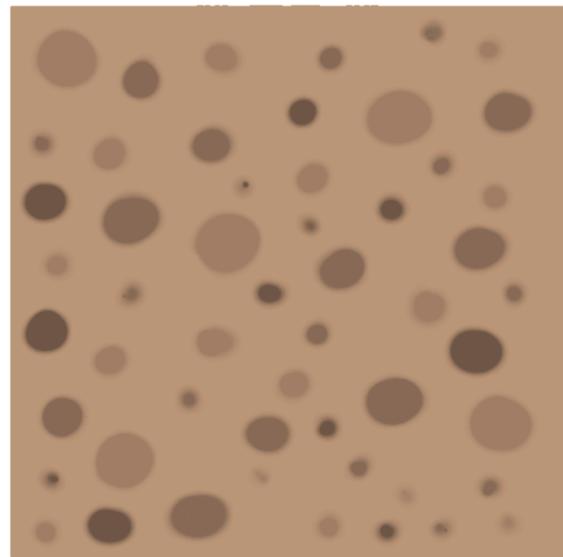
Player 1 (Jumping)



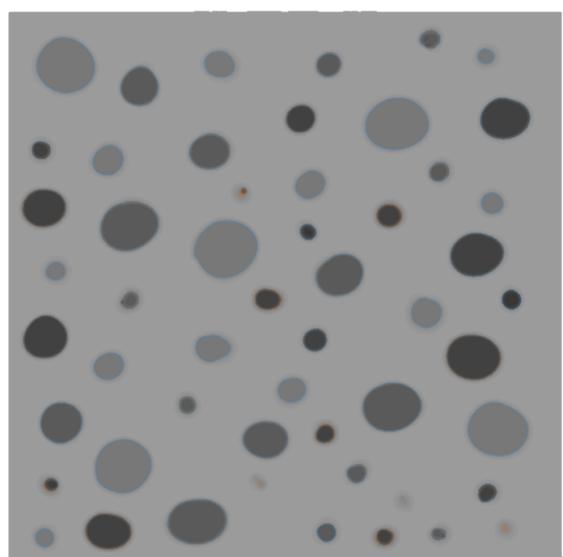
Player 2 (Jumping)



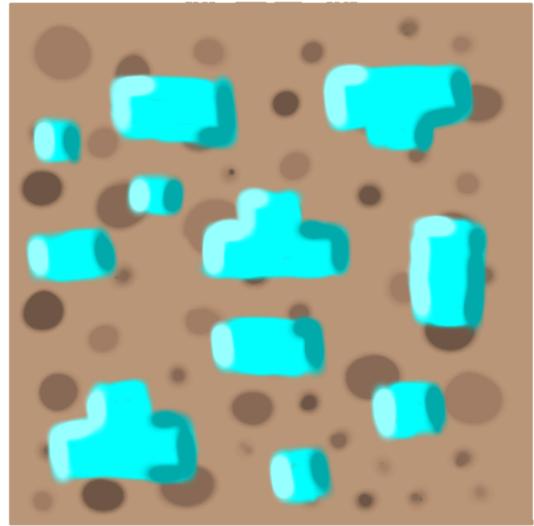
Normal Block (Option 1)



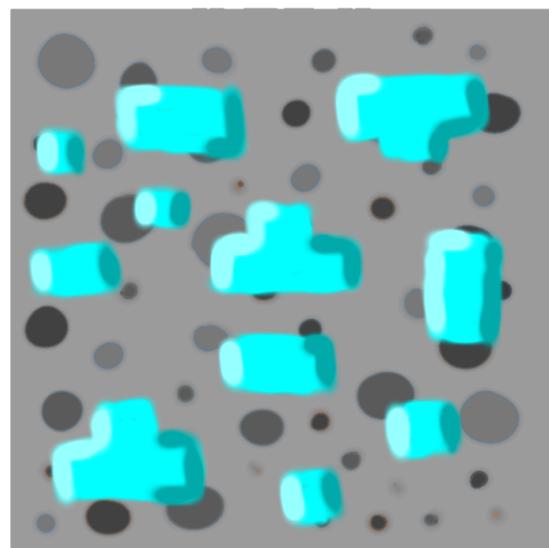
Normal Block (Option 2)



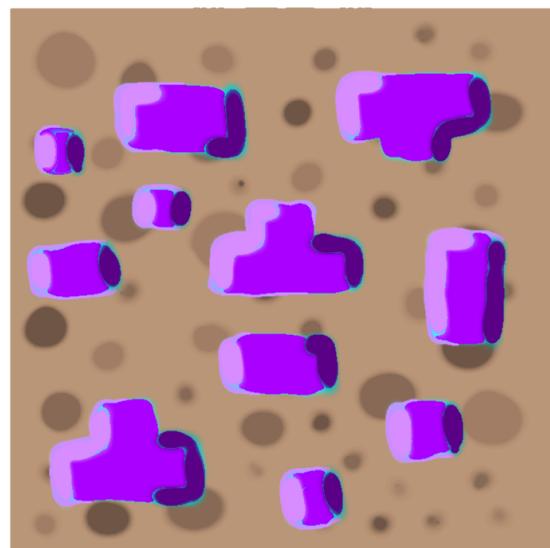
Diamond Block (Option 1)



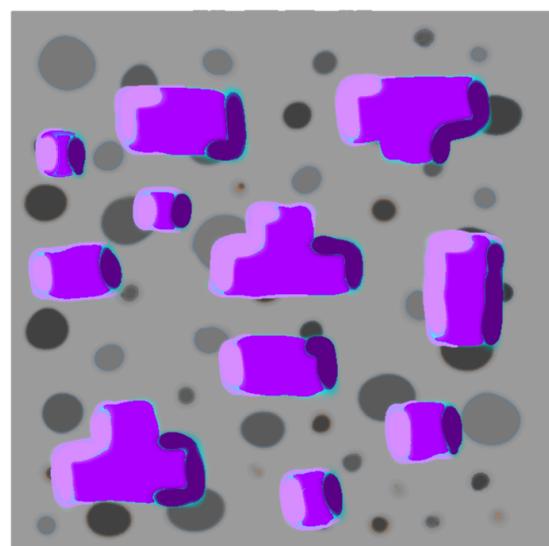
Diamond Block (Option 2)



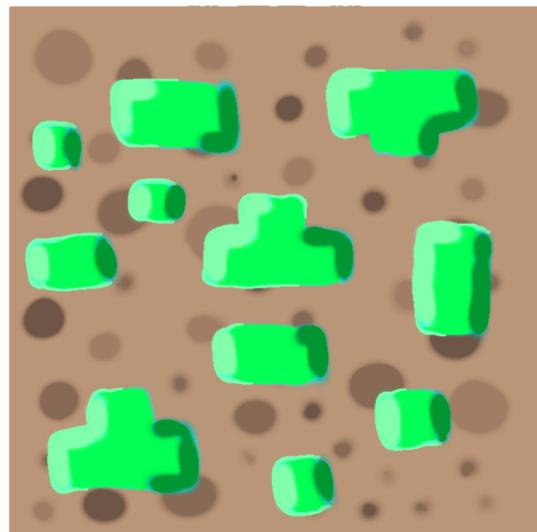
Amethyst Block (Option 1)



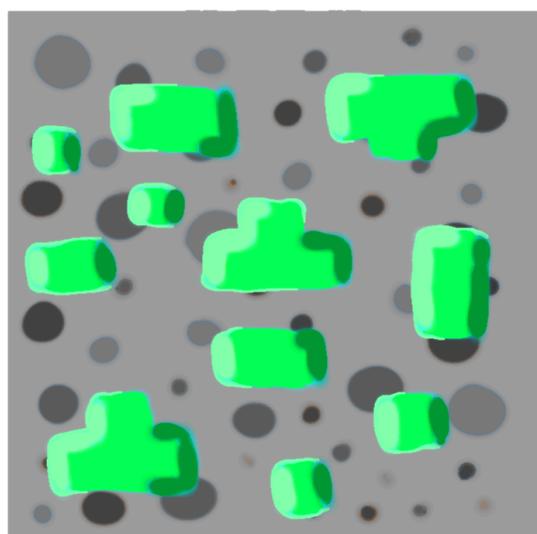
Amethyst Block (Option 2)



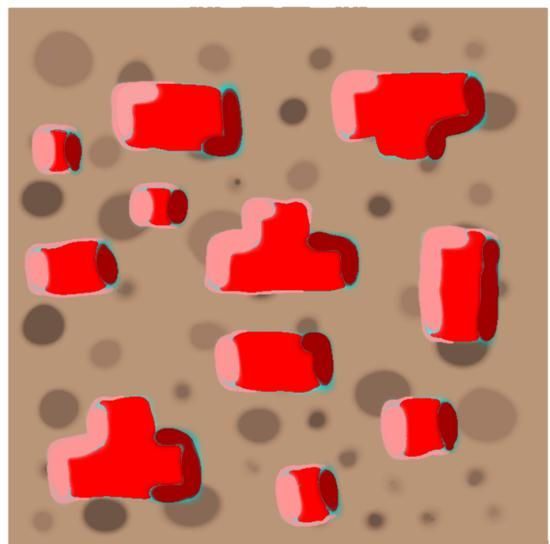
Emerald Block (Option 1)



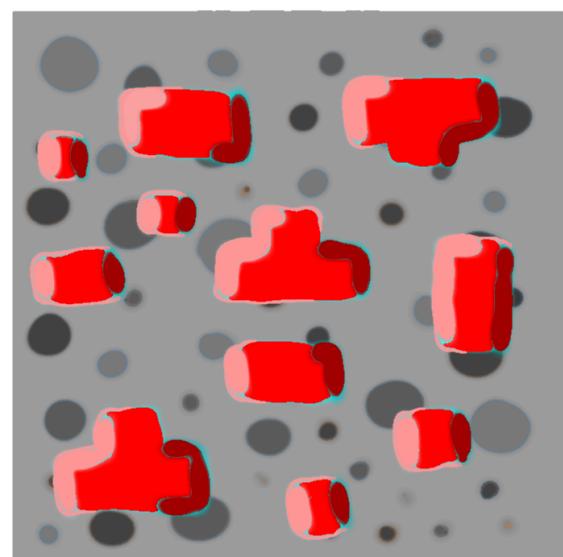
Emerald Block (Option 2)



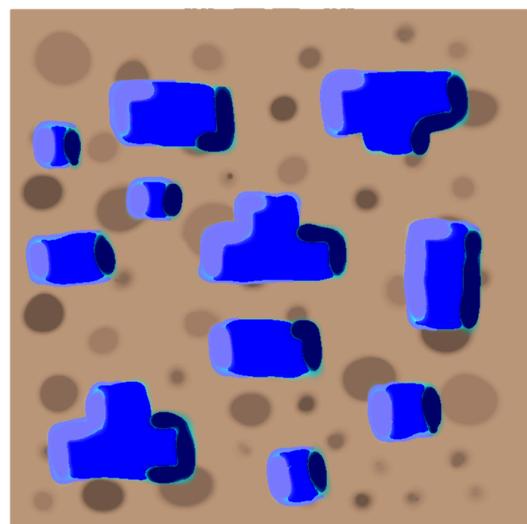
Ruby Block (Option 1)



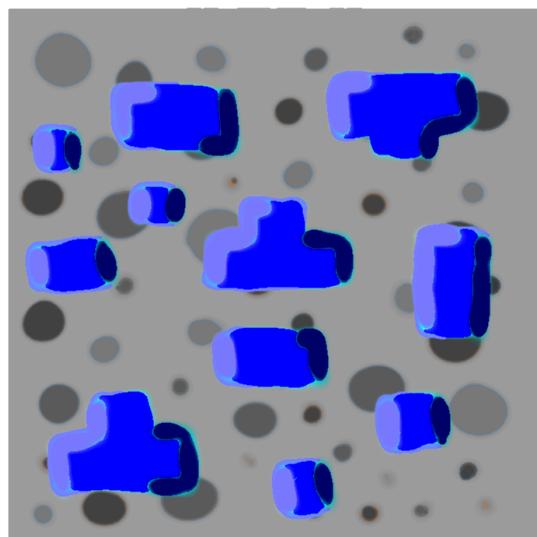
Ruby Block (Option 2)



Lapis Lazuli Block (Option 1)



Lapis Lazuli Block (Option 2)



Additional Things to Add if There Is Time:

Obscured Surroundings:

One thing that we wanted to add was that the player can only see one block around them and the rest of the blocks cannot be seen

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