Hues in the Air

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1 Concept

The idea of our game is to create a multiplayer Geometry Dash-like 2D platformer with some unique physics. Our game will be based on the Nintendo Switch game "Super One More Jump". The basis for the multiplayer is that each player can choose one of 2 to 5 colors, depending on how many players join in. Each player can control the game figure exactly when they are on a tile of their own color. All 2-5 players control the same figure. It is therefore a cooperative platformer where players must work together to complete a level.

The game is controlled by players pressing the space bar. When a player taps the key, the character jumps in exactly the same way every time. The character automatically moves forward, so the player's task is to avoid obstacles by timing the jumps correctly. Levels become more complex as the game progresses, making them more difficult. Players must create more and more difficult jumps while predicting the directional changes of gravity, forcing them to time the jumps more and more precisely. If the need for more variety in gameplay arises, additional elements can be added to the game, such as moving platforms or an element that randomly changes all the colors in the level, forcing all players to relearn the entire level.

Important, but not obvious, is that the character can only move on colored blocks: While in Geometry Dash you die if you crash into a wall, gravity works a bit differently in our game; thus, death is brought about exclusively by contact with a white block. If this is the case, the players have to start the level from the beginning.

2 Functional requirements

- Physical properties: the gravitational force acting on the block can change while playing: The block should be able to rotate around corners as in the figure 1, as well as jump on walls.
- Multiplayer aspect: only the player whose color matches the block under the figure should be able to interact (jump) with the figure.
- Levels: The objective of the game is to go through one level after another together and collect a coin at the end to complete the level. The levels must therefore be loaded from text files and displayed on the screen at the desired times (when opening the game and

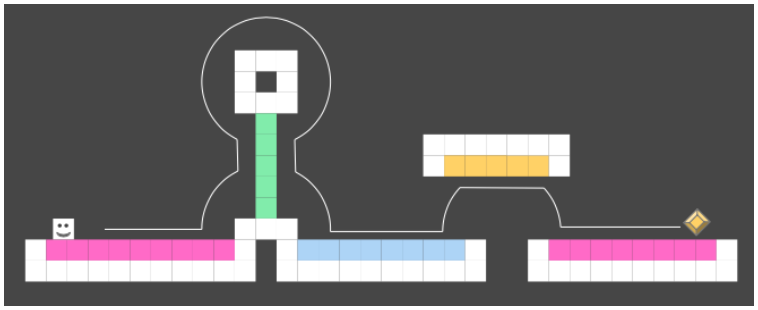

Figure 1: Example level

after completing the previous level). At this stage, it is difficult to say how the levels will be selected and how their difficulty will evolve as the game progresses. However, it is likely that the following model will be followed: Players choose a difficulty level (easy, medium, hard) and then have to complete a number n of levels to "win" the game; they only have a certain number of lives each. The more difficult the selected mode is, the more difficult the levels are and the more levels must be completed. The difficulty of the levels will be determined by these characteristics, but also by the reaction times expected from the players and the difficulty of finding the coin at the end of the level.

- The character: its movement in the game must have realistic characteristics: if it jumps, it will rotate accordingly; if it is possible, some particles flying behind it would contribute to the aesthetics of the game.

- Menu: The game should have a menu where players can create/join a lobby, chat with their fellow players, choose their game color and start a new game.