Game Design: 2D Platformer
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Description:

Vision Statement: Our goal is to create a game with more relaxed game play that requires thoughtful action and skillful decision making. We want to create a game centered on solving different puzzles.

Target Audience: Our target audience is achievers and explorers. Correctly solving and completing a puzzle to get to the next level makes our game highly achievement based. However, the puzzle solving experience is exploration based. The core of the game is understanding the possible solution space and subsequently correctly navigating through it.

Core Experience: The core experience is low stress, low competition, and a relatively slow game pace. Instead, it focuses on thoughtful, intentional pattern recognition and execution. The mechanics of the game get more complicated as the player progresses; however, player experience primarily aids pattern recognition and spatial planning capabilities.

Analysis:

The objective of our game is to obtain the goal number and move through the goal door to the next, more complicated level. This is a single-player game and the primary challenge in this game is identifying the best possible pattern path through the game. If you make irreversible decisions your only choice is to reset the level and start again. There is no defined procedure for completing a level, it is the development of your own procedure that makes the game interesting and enjoyable to play. The resources available are the operators and the numbers. The operators change your state, and allow you to interact with the other collectible objects--the numbers--in a different way. The player cannot move outside of the specified game board and once a number disappears because the player has collected it, it cannot come back. There is no distinct story associated with the game. However, the chalkboard visual design fits with the mathematics base and puzzle of the game. This is a Ludus game designed for strategic, intentional, creative movements and pattern recognition.

Reflection:

When our group first formed, we all knew that we wanted to construct a game where the core attraction and challenge lied in solving puzzles. While the route we traveled to complete this goal was constantly evolving, we believe that we managed to accomplish what we first envisioned. We believe our gameplay promotes a feeling of relaxation without overloading stress onto the player. Through our decisions to exclude a timer, enact no punishment for dying, and implement a restart button with unlimited use, we promote this core value. During our playtesting sessions, we noticed that some players would stay put on the starting platform attempting to solve the math puzzle before exploring the level. We questioned whether or not this was a bad trait of our game, but concluded that this behavior was something we were trying to induce. Players did not seem to feel any external pressure to solve the level by collecting numbers and operators blindly (though some did). Rather, they approached the challenge in whatever fashion they felt most comfortable with, which is exactly what we wanted. In our levels following the initial training levels, we feel that we accomplished our goal of creating stimulating, challenging puzzles that could be completed in around a minute's time or less. We tackled this challenge by taking a patient critical approach to our level design – sketching out drafts on paper, reviewing with our group members, and ensuring that the challenges made sense within our game mechanics.

We feel that we did a solid job reaching our target audience, which was achievers and explorers of all mathematical skill levels beyond elementary. Our game definitely aligns with the traits of achievers, as completing and advancing levels is the core goal of the game. There is no consolation prize aside from completing the current level and advancing. Some players' behavior of staying put at the starting platform and attempting to solve the puzzle in their head, as mentioned above, suggested that we might have missed the mark a bit with our appeal to explorers. Some players certainly explored the levels, and seemed happy doing so, but the atmosphere of our game does not clearly cater to this behavior.

Our playtesting sessions left us feeling quite proud of the product we created, as players not only seemed engaged, but passerby also stopped to watch and even requested a turn to try it out. Perhaps this is because we were only able to playtest with college-aged students who are more keen to seek out and solve puzzles, but it was encouraging nonetheless. Indeed, people with these traits were our target audience, and these people seemed engaged. No players expressed a desire to quit, as at no point did any of the puzzles feel unsolvable. We feel we ensured this trait of our game by keeping all of the numbers less than ten and constructing the whole puzzle within one screen-view. More so, players visibly and audibly demonstrated a desire to complete the level as quickly as possible even with the absence of a timer. We did not necessarily expect this result, but were pleased that players could craft their own expectations of their performance.

Much of our reflection above covers what we feel our game does well. In summary, we feel that our game offers a simple, puzzle-solving experience with enough variance in mechanics to keep the player engaged. Of course, there are areas we feel we could have done better as well. First and foremost, our game lacks an option to view the controls. Through the design of our opening levels, we felt that the player would learn the mechanics of the game and what each collectable or obstacle does. We designed it this way intentionally, as falling off a platform or messing up the order of operations should not feel like a big deal. Yet, in retrospect, we wish that we included an option in the menu to view the basic controls and a short paragraph stating the premise of the game. Additionally, we wish that we implemented brief markers in the opening levels noting where the player's counter and goal were located in the user interface. Lastly, we struggled to navigate a Unity bug that occurred when falling off of a platform and out of a level in which new game scenes were created over each other. The issue occurs in our OnBecameInivisible() function in the player class. We kept this code commented out during our creation process to avoid issues, but once we reincluded it during the WebGL build, issues persisted. Unfortunately, we were not able to solve this, but we hope that players will press the restart button after

falling off platforms and are confident that with a bit more time we may be able to resolve it. Working on this project was a great experience for all of us. We each had the chance to enhance our skills in a variety of fields, ranging from Unity programming to level design to project management, and are eager to take on the challenge of constructing a 3D game soon!