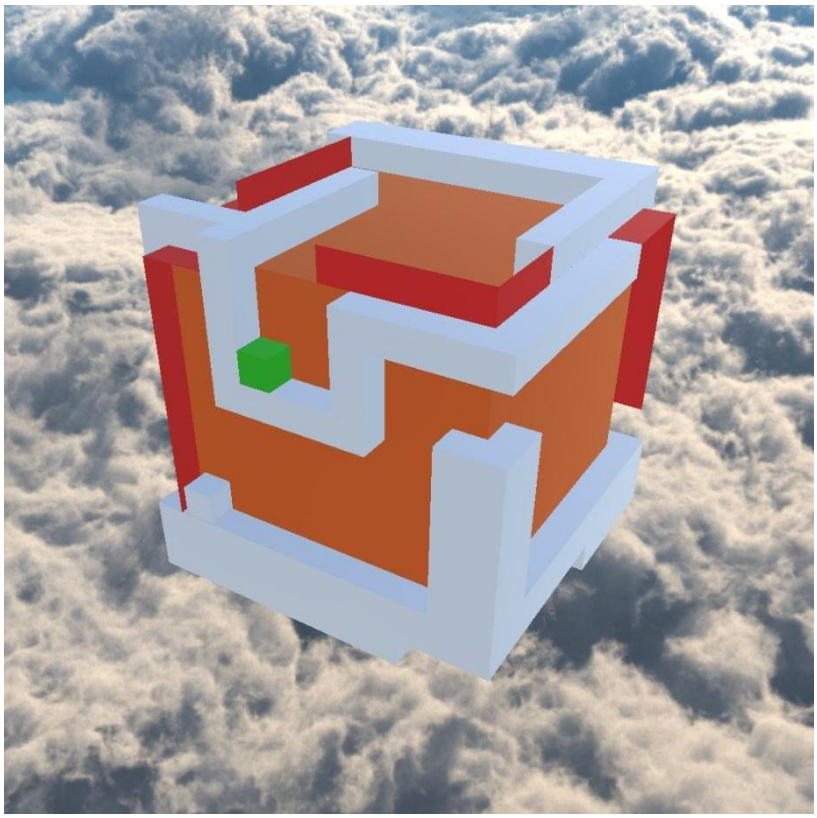
Maze Cube



Playtest Evaluation

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Introduction

In this document, playtesting sessions will be discussed both in details of how they were carried out and then a reflection upon how feedback from these sessions impacted the design process of the digital prototype that was created. To begin, the paper prototype play sessions will be discussed and then the digital protype play sessions, there will be a reflection summary at the end of this document. As a side note, these are limited in scope due to the ongoing situation with regards to the pandemic, this made paper prototypes play sessions difficult to carry out.

Paper prototype

For the paper prototype, the game itself was created in a few parts and there the playtesting was carried out on two members of my household. These parts will be briefly discussed in how they were created, then how the play session was carried out, and finally followed with feedback as well as a reflection on this feedback.

Creation of prototype

For the first part of the paper prototype (this will be called the tutorial), a simple grid of three by four boxes were printed out to be the “faces” of a cube and then had a few lines added to each individual panel creating obstacles for players to navigate. Further features were added onto each panel, such as coloured lines to indicate which edges of the panel may be crossed or not crossed and additional areas that may not be crossed (e.g., lasers), and coloured symbols to indicate were start positions would be (these would also be where the player would be sent back to if they wished to restart the level). In total there were eight of these panels that were created, each giving a simple mechanic at a time or combining two mechanics that were previously introduced to the player. There was also a little coloured square cut out created so that the player had a visual reminder of where they were within the scene.

The second part to the paper prototype (this will be called the cube), was made rather similarly to that of the first though the panels were limited to six and positioned in a cross-shape, which would then be rolled up into forming a cube. The details such as obstacles, start and finish locations, as well as which edges could and could not be crossed were added before this wrapping took place. The panels were then glued into position and the same square as mentioned before again acted as the players location reference.

How the play session was conducted

Now for how these play sessions were carried out. For the tutorial part of the paper prototype, the player would be instructed on basic rules that would apply across all future panels (those being you can move left and right and that you may on cross an edge on the panel if the colour there was green), they were placed on the start position, and then asked to complete the task of crossing off the panel at the green edge. Players were also told that their player cube (the square) would have gravity act upon it and that this would always point down, so if any of the actions (that will be mentioned next) were to be used then gravity would point in the same direction. This could lead to the player falling off the game world or cause them to cross a red edge and this would require them to start over from the start point. The next two panels introduced them to jumping, which was then followed by a panel that introduced rotating the panel by 90° clockwise or anticlockwise steps (this was shown to the player by rotating the entire page by 90°), and then a combination of the two. The next panel gave the player the ability to flip the panel (the same as performing 180° clockwise or anticlockwise or the same as performing two 90° rotations, performed by turning the page 180°), the

laser obstacle was then introduced, and followed by a panel that combined the rotate and flip mechanics and laser obstacle.

And for the cube part, players were given the start point and to finish point and were instructed to traverse each side of the cube to reach the end point. The players could use all the mechanics from the previous section (move left or right, jump, rotate, and flip), then were also reminded how high the jump would reach, that they could only cross at green edges and that they had to walk to cross these edges (since if they used gravity, then they would fall off the cube and that would be game over).

Feedback with Reflection

Both participants thought that the game overall was enjoyable and was arguably one of the most important points of any feedback on an idea, which meant that design elements were pointing in the right direction. However, both did mention that the cube itself was less complex than that of the tutorials, which could likely be the case as more time was spend on developing these than on the cube, mostly in the effort so that the rules were fully clear to the player and the ways in which these rules might be combined. The idea of having players only find their way off one panel instead of a cube was considered at this stage, though it was decided to still aim for at least one cube in the digital prototype.

The first player did like how that the rules built up in stages (in the tutorial) rather than having everything being explained at the start, which is typical of many puzzle games to minimise complexity at the beginning of the game that slowly builds into more difficult puzzles to solve. This element was kept when the digital prototype was developed as this was believed to make the game more enjoyable. This player also would have liked to be reminded of the rules more often or even have a timer so that “score” may be gauged from this. These are both elements that belong within the UI, these would end up in the UI mock-up but due to keeping things simpler and that the player would have me to explain game elements to them, this was not included within the digital prototype but should be included in the fully developed game.

The second player felt that some tutorial level elements (such as the lasers) did not add to the challenge of the level and so some of these were omitted from the digital prototype, one possible way to improve upon lasers might be to have a similar level that had been completed before, but the lasers cause a player to have to solve that level differently. They also mentioned the order of tutorial levels being rearranged somewhat so that the “flow” worked better, which was considered when creating the levels in the digital prototype. They also suggested that an undo action or restart level be made possible, which for the paper prototype was easy enough, though for the digital the reset is simple to implement the undo would be a bit more technical and was as a result omitted to limit the scope of the digital prototype, though should be a feature of the full game. This player also mentioned other game elements that may be added to the game, like surfaces that block mechanics, jumping from the cube you are on to another cube, or even a look around the cube option. These are all ideas that were worth considering though they would take too much time to develop when considering that the prototype should be kept simple, these would be recommended additions that should be made to the fully developed game.

Digital prototype

For the digital prototype, these sessions were limited to my household with the same two participants as before. Again, how the creation of the prototype will be briefly discussed, along with how the play sessions were conducted, and then there will be a mention of feedback received from these sessions as well as a reflection on these topics.

Creation of the prototype

The game itself still has the tutorial section and the cube section mentioned within the paper's prototype section with much of the level layouts replicated with an extra level that was not previously in the paper version of the prototype. The scenes themselves were created by using Unity's built-in 3D objects mostly so that the mesh colliders were in the correct positions. Originally, the cube part was made in Maya then exported into Unity, there were issues with the mesh colliders and therefore the cube was replicated within Unity with the game objects used to build the tutorial part of the prototype (which is not an ideal way to proceed with development though since the cube was relatively simple this did not slow down process by much).

After objects were created, C# scripts were created and then attached to objects to give them the sawt after behaviours that each object required. Most of these scripts were rather simple in scope and functionally (and will be discussed further in relevant sections of coursework).

How the play session was conducted

The play sessions were carried out within Unity's play feature which would not be a typical way for the player to play the game in a fully developed game, though here this was a sufficient way to allow play testers to see the game and provide feedback as they played. Each player was given the rules at the start (and reminded of these if they needed them), which mechanics were available to them within that scene (all were available though the player should not have been able to access these), and finally what they needed to do to complete the level. As they progressed through the scenes, additional rules and mechanics were then given to the player for them to use to help complete the current and future scenes within the prototype. Since there was a lack of UI, I was there to help fill in that gap with reminding the player what to do and which keys allowed them to perform the mechanics should they wish to perform them. The players then made their ways through the level and gave feedback through the session and at the end of the session.

Feedback with reflection

Both players again enjoyed the game, which suggested that the game should continue development further (though what features to include would need to be settled somewhat more). One problem that led to some initial frustrations with the game, were that since the player marker could only move left or right then when they became skewed, they could be blocked by another game object that would normally not block their path, move in the opposite direction that was intended, or even fall off the game world completely. This was all resolved by giving the player the option to return the rotation of their character back to the identity and invisible canvases were added to help stop their character from falling from the world. While both these solutions provided were what the play testers were looking for, the way in which they were implemented gave them an extra button to know about (which should be hidden within code so that the game itself could resolve this issue and not leave this to the player) and also added extra game objects that needed to be placed within the scene (there might also be a better solution for this though this approach did provide the desired result considering that scope of prototype needed to be kept simple).

The first player (the same first player as in the last section) mentioned about there being too many keys that needed to be remembered. This could be resolved with instead of mechanics being triggered with keys, they could be made as buttons within the UI (which should have a symbol making it clear as to what that button does, along with a menu tooltip to explain further) none of this was resolved due to the UI being left out completely though effort should be made to include this functionality within the UI.

The second player found that again the cube level was much simpler than that of the tutorial levels and that there could be more gameplay elements overall. Regarding these issues, they would require a much closer look at how the cubes are designed, both in what makes the tutorials more difficult and how these can be put into the cubes. However, these issues were not resolved mostly since they would need a large amount of time spent on how to increase difficulty. This is something which should scale up during a puzzle game though it is important for it not to exceed a point otherwise the player might find the game too difficult to bother to complete.

Reflection Summary

In this last section some reflection ideas will be made clearer in how they impact design concepts.

Typically, games that fit within the puzzle genre are best played as single player, where the player faces the game itself, though one participant mentioned that a timer may be introduced both to measure how well players have done against other players but also to add further challenge that the game may give the player. Another element that puzzle games should have is simplicity that layers into something that is more complex, with the rule set, and the mechanics. This allows the player to slowly learn the rules within the game world so that they do not feel overwhelmed both initially as well as further into the game when puzzles become more complex, and the game starts to become difficult. This all relates back to challenge vs ability. There is a fine line between balancing whether a game will cause frustration, if the game is too hard and the player does not know how to complete the puzzle, or cause boredom, if the game is simple and does not engage the player in the puzzle.

And picking up a little more on the point of simplicity, this should further be found within the artwork, music, UI, and how rules and mechanics are introduced. The player should be able to focus on the puzzle or at least be guided by the developer to reach that state, a possible moment of relaxation for individuals. In essence, a puzzle game should get a player to a state of zen or be a possible escapism from their day-to-day lives. This means that a player should not be left trying to remember how to engage a particular mechanic for example (e.g., the multiple key commands within the prototype) or need to correct a mistake that this action has caused (e.g., the need for the fixing rotation of the player character). The UI should also pack as much information as it can that the player may be interested in knowing onto the display (e.g., time, lives used, button icons that are clear as to what they do) but also hide as much of the information that a player might not immediately need (e.g., menu).

If the game were to be fully developed in the future the points that have been mentioned would be paramount priorities to make the game more successful or make the appeal greater to those that play puzzle games.