

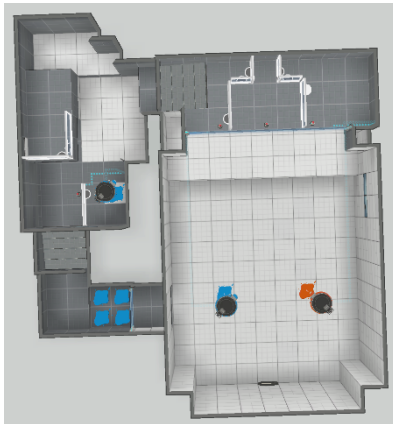
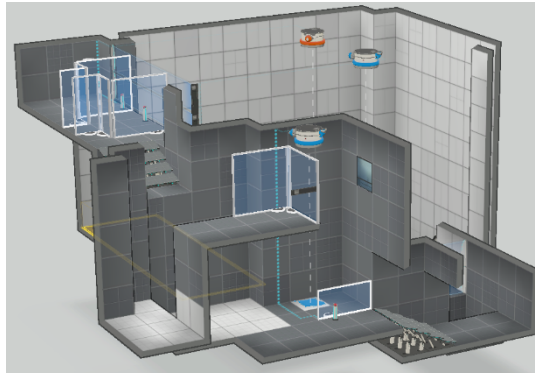
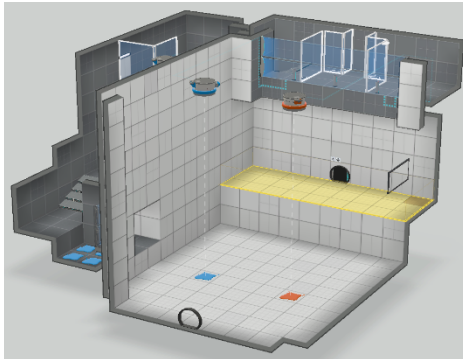
Portal 2 Custom Level Development Blog

Entry 1

For my CT6122 Personal Portfolio Assignment, I am developing a custom level for Valve's 2011 Portal 2. I have challenged myself to design and develop a level that teaches 3 separate mechanics to the player before integrating each into one individual puzzle that requires simultaneous the use of all 3 mechanics in order to solve it.

To build this level, I could either use the in game level editor or the hammer editor. Although hammer allows more for freedom and more precise design, it is also much slower and awkward to use, is known to be highly unstable and it hasn't been supported by Valve since 2012. Due to these factors and how the level I intend to develop will be within the test chamber format the most of the campaign puzzles and that the ingame editor supports, I have decided to use the in game level editor.

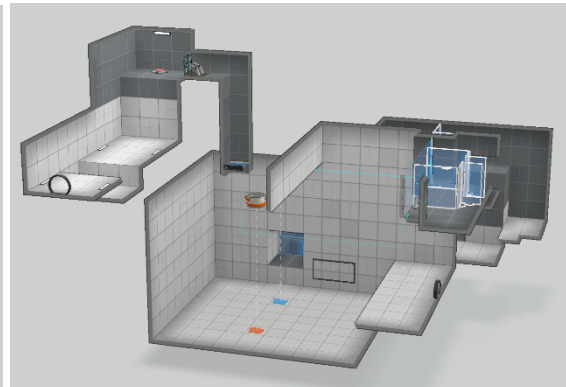
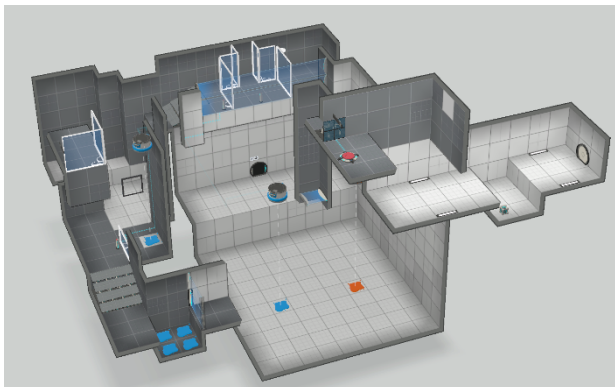
I first made a base for the main room, featuring the button platforms, where each mechanic room would lead to. After this I started work on the blue goo room. With this, I first forced players to fall onto the goo, showing players that it is bouncy and makes you jump once you fall onto it. Players would then have to spray goo onto the floor to climb up on a raised platform, showing that goo can move through portals and the blue goo is only bouncy once you jump on it. Players must then put goo on the raised platform to be able to shoot a portal up to another raised surface which once done will let player end the room by jumping onto the goo they first placed when entering the room, tying it all together. They would then be able to access the first button and activate the blue goo in the main room. Each room would stay isolated from the main puzzle with the fizzler gates, which destroy all none player objects that pass through as well as close as close all of the placed portals.



Entry 2

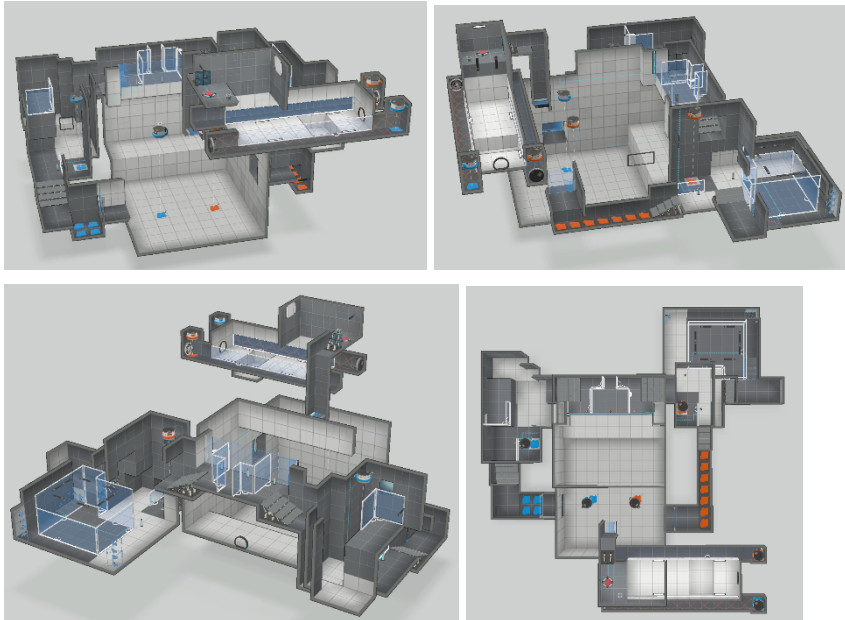
Next I chose to add a small starting room to the level. Due to the tutorialised nature of the level which was going onto a platform that anyone of any ability and knowledge could access, I thought it necessary to ensure that all players knew and could perform the basic actions of the game; these being: how to place portals, go through portals, use portals to conserve momentum and placing boxes onto buttons.

The player would fall down into the main puzzle, which was intended to initially overwhelm them, forcing them to latch onto what they could immediately understand; the three buttons at the top of the room, which would just so happen to match the 3 holes around the room, pushing them to enter one of the holes to reach the buttons.



Entry 3

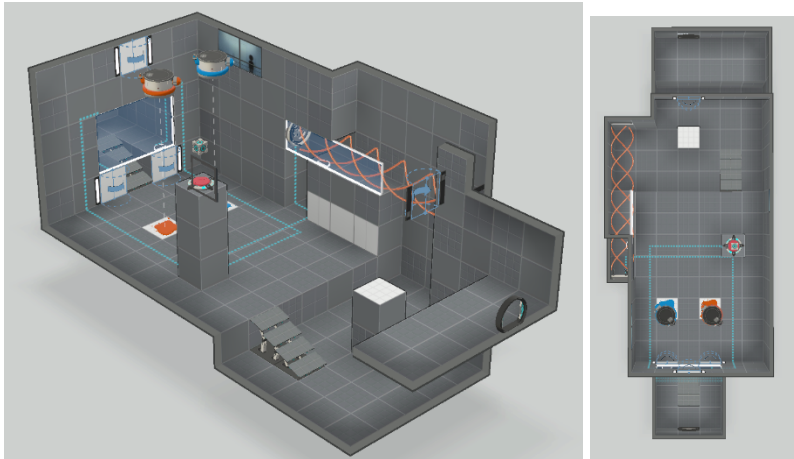
I then added on the orange goo room. This room would use similar techniques to the blue goo room to teach its mechanics. It did this by making players fall onto the orange goo, showing that it made players go fast. Players would then have to place the goo on the floor to let them race up a set of stairs to get to a ramp. Goo could be placed on this which would then allow players to gain speed and shoot out of the room to win. They could then activate the orange goo in the main puzzle room.



Entry 4

Realising that I had no real plan for what the main puzzle would entail, I made a second level which would just feature the main room, allowing myself to come up with a design and test it independently of the rest of the level. I decided that in order to beat the level players must alter the flow of the tractor beam to pick up and transport goo into the correct places and then use the path made to complete the level. I decided to use a button for this to make the player combine 3 mechanics in order to reach it and be able to invert the tractor beam flow. I made it so that players could make a path of orange goo with blue at the end to let them build up speed before bouncing up on to a platform. The player would then use the tractor beam to move themselves up and then over to the button so that they could control the flow.

This wasn't the finished version of puzzle as it was still unfinishable at this stage. It has become very apparent over the course of development so far, how much testing of each individual change is required to ensure that one small correction won't entirely break another part of the puzzle. Fortunately, both the gameplay and level development are still enjoyable to me so it wasn't too much of a pain, it just took a while to get it all right and working.



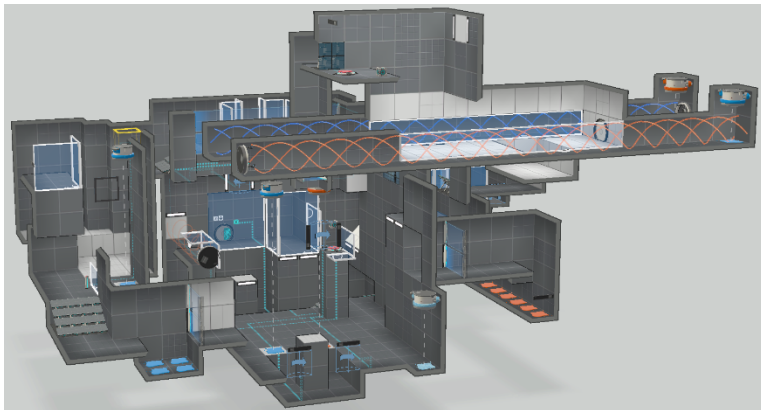
Entry 5

Finishing the main puzzle room was tough to while making sure the rest of it still worked but I got there in time. I made it so that players had to use the tractor beam to place goo to use to reach an area where they could use the tractor beam to exit. I also used a clear goo to clean off the cube if it were to get goo on it and used plenty of lights to draw the players attention to where they needed to go next.



Entry 6

I rebuilt the main puzzle room in the original level file. It was a bit of a pain rearranging everything to fit around the new main room but I managed in time.



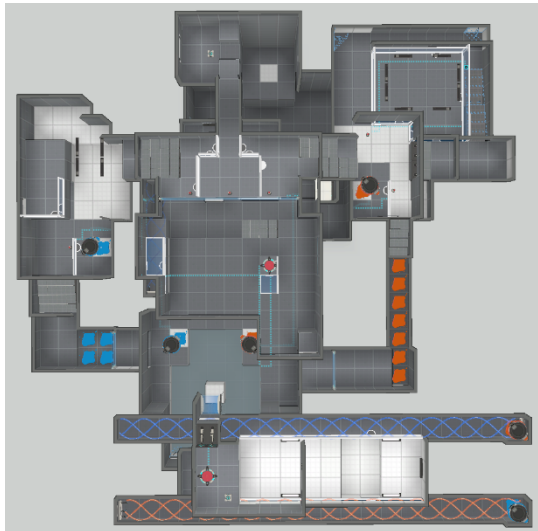
Entry 7

Added the tractor beam room to the level, I was awkward fitting it all within the space limit but with some compromises, I managed. Players would have to use the blue and orange goo to reach it and then entered a tractor beam to get to a small room with a button which reversed the flow, letting them enter the tractor beam room proper.

Players would then have to use the tractor beam to make a both to a box to place on a button to flip the flow again to escape and unlock the mechanic in the main puzzle room, allowing them to solve it and win.

Many edits were also made through the rest of the map, including many tweaks and adding grated water over to prevent player placing goo where it isn't meant to go.

The first iteration of the level is now ready to go and will be uploaded to the steam workshop. <https://steamcommunity.com/sharedfiles/filedetails/?id=2655085127>



Entry 8

A questionnaire was made <https://forms.gle/utWc6Npvh55G2CZW7> and feedback has been received

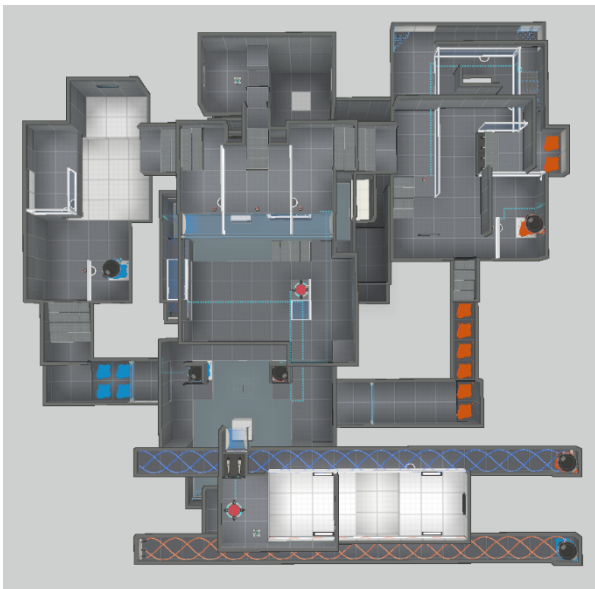
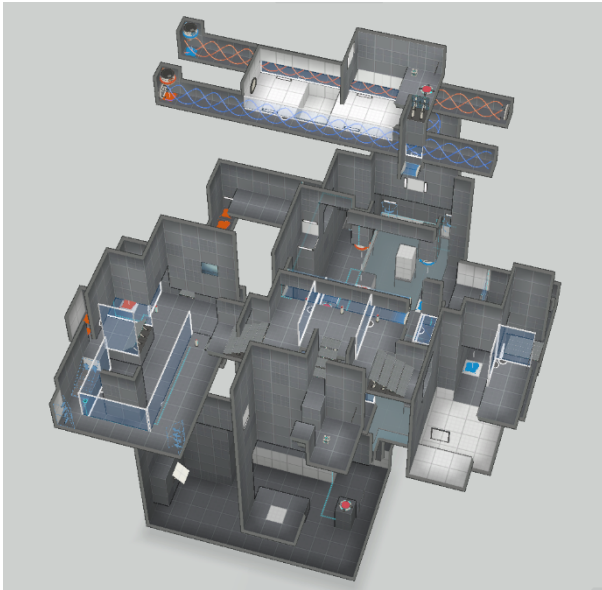
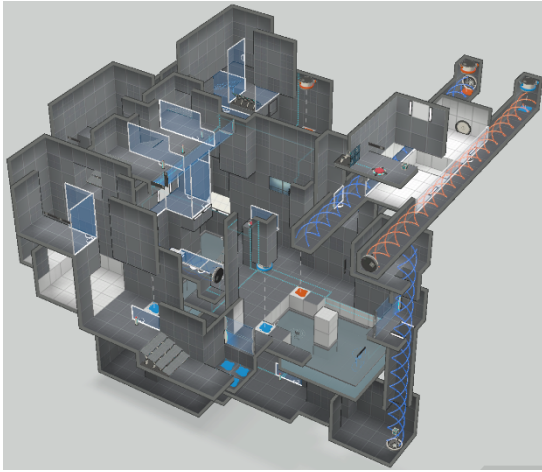
<https://docs.google.com/spreadsheets/d/1TutLALdL25YzYEZLHrrWii9B1PPo6DwnuRf-YEjHhhU/edit?usp=sharing>.

I also received a few videos as feedback:

1. <https://www.youtube.com/watch?v=K6qlqK25DFE>
2. <https://www.youtube.com/watch?v=vf17xT46hvA>
3. <https://www.youtube.com/watch?v=e9q4cVF65Zc>

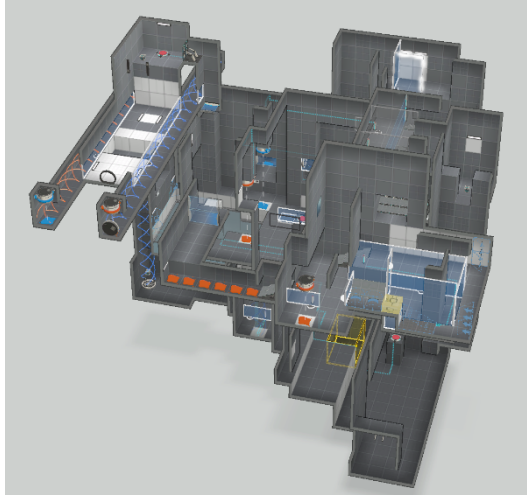
With this feedback I improved the level and used a mod called BEEMod to do this. It would give me access to many more objects, level styles and options without requiring anyone playing the level to have the mod downloaded themselves.

I made some changes including how the goo can be placed in mechanic rooms and the placement of the grated water.



Entry 9

I continued making edits to the level, improving readability with dice signs to show the player where they are supposed to go and when. I also removed some of the skips that were present in the first iteration, making sure players would actually have to engage with all parts of the level to succeed.

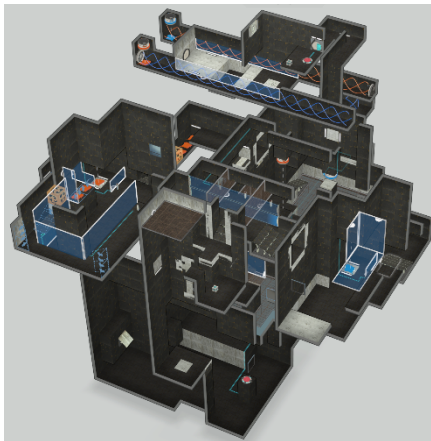


Entry 10

I finished up the second iteration of the level by making more edits to the original by improving the layout and removing more skips that I had found through rigorous testing.

I also added the Overgrown style to the level to help it stand out more and be more visually interesting to the player. The level was uploaded to the steam marketplace.

<https://steamcommunity.com/sharedfiles/filedetails/?id=2713729547>

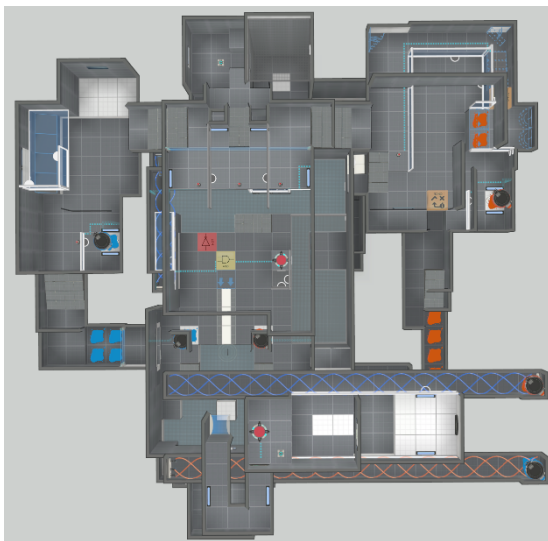
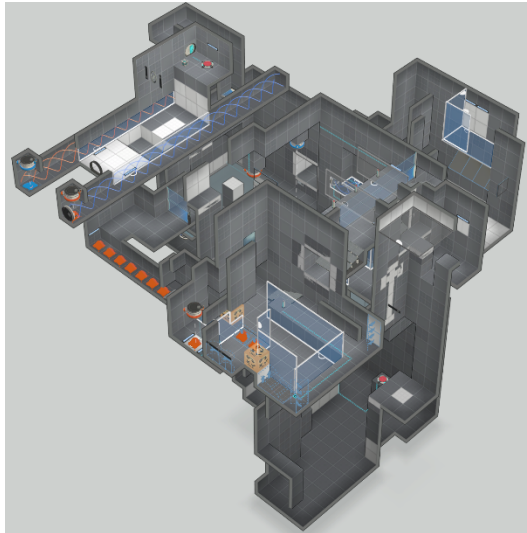


Entry 11

Again I made a questionnaire <https://forms.gle/LW5J67MdSRhaPfK8A> and feedback has been received

<https://docs.google.com/spreadsheets/d/19gdhQZzzWo5IJMOxGI39jVULa9asQ0JaGvVC4WWzCVY/edit?usp=sharing>.

There weren't any video responses but I still made sure to make the required changes and edits. I also added blue lighting to the area to help boost the atmosphere and make the level feel cold and unwelcoming, similar to how many campaign levels feel. Changes were also made to remove skips that I had previously missed.



Entry 12

I made a more changes to the level and finalised it for the final iteration. I am 99.9% sure there are no more possible skips and that the level has beaten the challenge that I had set for myself. The final iteration is playable here.

<https://steamcommunity.com/sharedfiles/filedetails/?id=2739675152>

