Project Deliverable G

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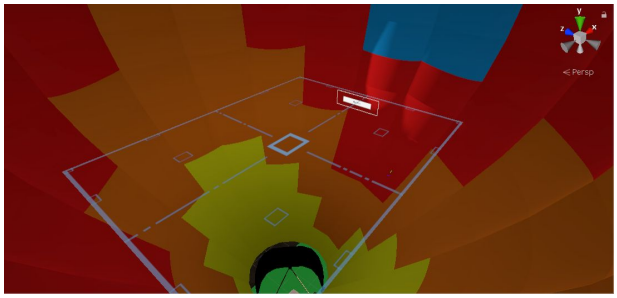
Introduction

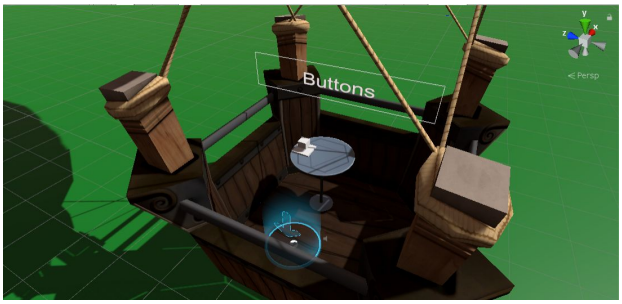
For this prototype we built off of the previous prototype, and made progress toward the final product. We ran into a few problems, and we were able to overcome them to complete a suitable second prototype that continues to communicate our concept clearly. We then tested our prototype on users, who will be mainly university students, to ensure that the aspects focused on for this prototype worked properly, and were up to our quality of work. Lastly, we have also planned ahead for our third prototype, which will be our final product.

Prototype Test Plan Outline

Hot Air Balloon scene:

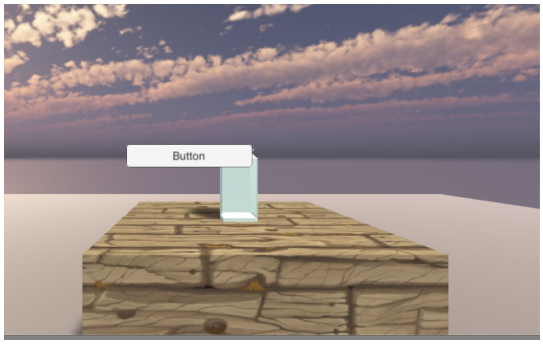
For the hot air balloon scene, we were able to make it so that the player can easily travel between the microscopic world and the macroscopic world. This transition works well. Now the environment for this scene has been completed, and the next step for the hot air balloon scene is to add the molecules and make them interactable. Once the molecules have been added, then the hot air balloon scene will be complete and the last part that will have to be done will be to incorporate the scene with the rest of the prototypes, and make a final product.

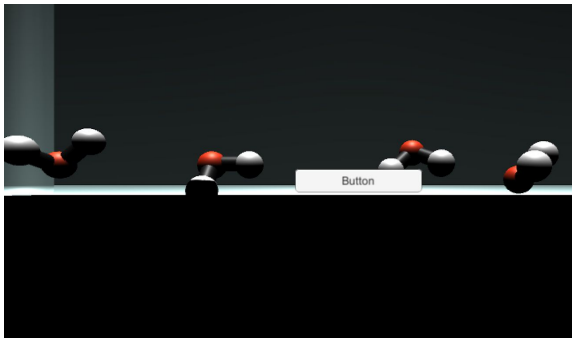




State change scene:

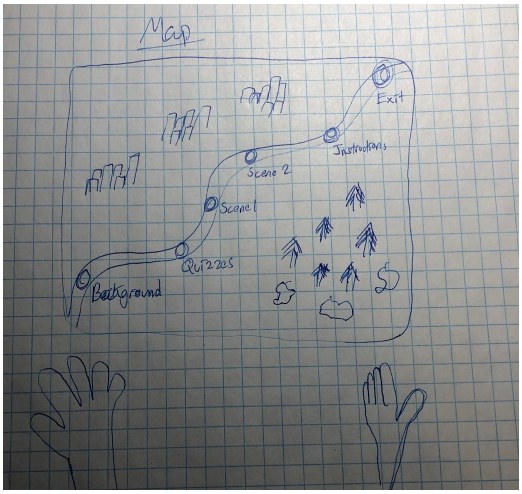
For the state change scene, we worked on traveling back from the micro to the macro, as the reverse transition was worked on in the previous prototype, but the main goal with this section of the prototype was creating dynamic molecules that collide with the container walls and each other. C# script was added to four molecules which acted as a test of the different types of motion. The molecules were made to move back and forth and rotate 15 degrees every delta t (defined portion of time). These motions were not random, but will act as a base for setting up entirely dynamic molecules to fulfill the client's main needs. In the next prototype, the molecules will be entirely dynamic and interactable. The scenes for the objectives will be laid out and expressed in both macro and micro scenes. The game will be made clearer and brighter. The user will also be able to teleport in the micro, as they are already able to teleport in the macro.

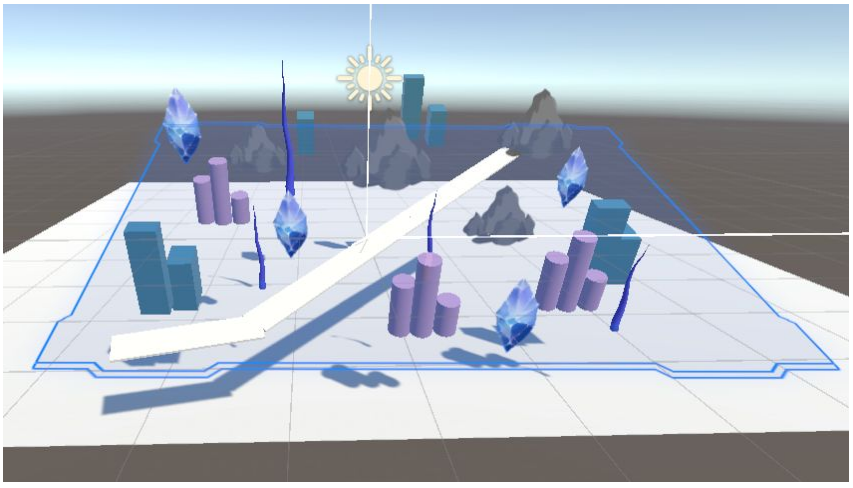


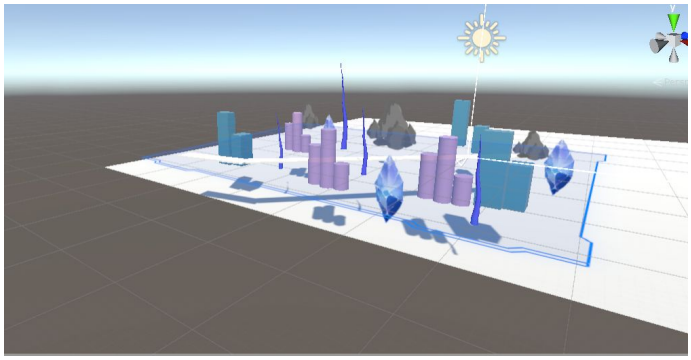
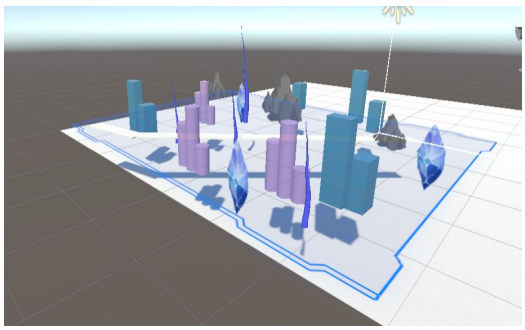


Map:

For this prototype we tried creating a map outline from scratch, using cubes and cylinders to represent building structures, trees, and mountains to create an outdoor environment where the main map shows up. We have decided to implement a design where the map pops up following a chosen option straight from the menu. The map itself will have a holographic appearance and include 3d details popping up for an aesthetic appearance. It will have a curved diagonal road going through the map containing buttons of different options which teleport you to different parts of the game. For example, clicking on a button named level 1 will take you to scene 1 with the melting ice cube. So far, we have tested to make sure the look and initial position of the map is correct. We have yet to work on the actual teleporting ability in the buttons and plan on working on it during our final prototype. The map will also contain buttons for instructions, quizzes, and all scenes. The map does not need to be followed in order of the buttons, they are just there to be selected whenever the user needs, and can be done in any specific order.





Analysis

Through testing, we once again verified that our team is on a good path to accomplishing our goals. We have been able to successfully transition from the macroscopic world to the microscopic world, which is one of the main learning outcomes the user is to take away from the game. We have been attempting to model molecules, and how they interact with each other in a scientifically accurate way. The molecules have been reflected in the correct colour scheme given to the team by the client. We have also tested the aesthetics of our map, and so far it seems to work well, but requires more components such as the buttons and teleportation between scenes. Right now, our map is not aesthetically pleasing, it is more focused on the initial implementation of our concepts and bringing to life most components of our sketches.

Feedback

Hot Air Balloon:

The user pointed out that the teleportation within the microscopic world after teleporting from the macroscopic world to themicroscopis world doesn't work very well. So time has been put aside, and our team is looking into this problem in order to come up with a viable solution.

State change scene:

The user had trouble understanding the view of the micro scene. This scene takes place inside the jar of water in the macro scene, this created a dark lighting from the shadows of the glass. The molecules sometimes escaped the proper barrier set up from the glass jar. Each time the user came back out of the micro, and then returned, the micro scene resets and the molecules are where they first started. This means the micro does not mimic real life, which can be disillusioning.

Map:

The users worked on the orientation of the map with a 3D hologram template. Orientation needs seemed to be specific to the user based on height, angle, etc. The users mentioned it would look better if all the buildings and trees were holographic as well.

Results

Hot Air Balloon:

Overall the prototype was a success, but before this scene can enter the third stage of prototyping, the teleporting issue must be fixed first. The team's efforts are going towards fixing this problem for, and then towards the rest of the aspects. The next prototype for this scene will contain molecules that rotate and translate, and they should be interactive. Once these goals are met, then the scene will be complete, and it can be combined with the other aspects to make a full product.

State change scene:

The tests with the state change scene were insightful. User friendliness and the movement of the molecules were the specifications tested. User friendliness was lower in this prototype, as the visuals were harder to see and understand. Whereas the movement of the molecules have increased greatly, from stationary to 2 degrees of movement. The priority moving forward should be to create as accurate of a game as possible, well still making the game clear to the user.

Map:

So far we were successful in getting the outline of the map noted. In the next prototypes we will focus on making it better visually as well, add transportation elements on to the map.

Conclusion

In conclusion, by creating this second prototype, we have gained insight into the user experience. We created three parts to the prototype, each its own subsection of the final product. Each subsection was tested differently and feedback was given. After creating the three subsections and testing them, we made our plan for the next prototype, and will now begin building our third prototype. We plan to have this prototype be very close to the final product to be presented on Design day.