YardQuest: A Backyard Adventure

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ABSTRACT

Our game features and backyard quest with the idea of travelling through a child's imaginative environment to get back home to have dinner. This document outlines our process of making the game and any challenges we faced and our solutions.

Keywords

video game, imaginative, reality, distorted, home, adventure, design

1. PHASE I: IDEATION

1.1 Ideas and Inspiration

You are a kid who is playing in the backyard in his treehouse, and your mom (or parent/guardian) called yells to you to come in for dinner (to eat). The problem is that when you play in your treehouse and in your backyard, your imagination is greatly facilitated and it creates new spaces to explore. To get back to your house, you must navigate through the backyard and manage this while switching between your imaginative distorted state and reality. The goal is to get back home to eat dinner. You can only properly navigate back home when you have switch temporarily from your imaginative state to reality. And only when you have made it back, will you be completely out of your imaginative state and ready to eat dinner with your family in the real state.

We reflected on our individual Unity scene projects that had the theme of "home" and brainstormed ideas that reflected the same ideas. Reminiscing on our childhoods, we all recalled playing outside and in our backyards. Our imaginations wild and unbridled, we would dream up imaginary worlds that we would play in until we got called back inside our homes by our parents. Thus, we settled on creating a "backyard" environment for our game. We took inspiration from the children's TV show, Backyardigans, in which the play space is routinely augmented into a different setting, and popular Netflix series, Stranger Things, which depicts an alternate dimension. To create the sense of a game, we chose the goal to be home because that is where you are with familiar people and places.

1.2 Design and Aesthetics

We knew that we wanted the style of the game to be somewhat whimsical and cartoon-like, but we also wanted this type of aesthetic to be feasible and standardizable. We decided it would be best to create low poly models and scenes, since they are easy to create and gives an ode to more elementary cartoons and styles of drawing.

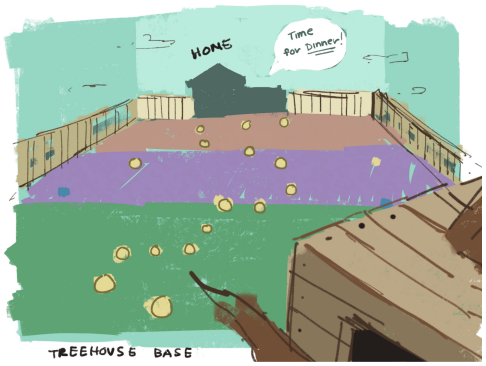

Figure 1. Initial sketch of the layout of the zones.

1.3 Gameplay

The playable area will be set up in three, mostly linear zones. The player starts at the treehouse, which is the farthest element away from the house, which is the destination. The player must navigate through the different elements of the reality backyard, which are each transformed into their respective imaginary worlds. The player will have to escape enemies, find token "trigger" objects that allow them to see glimpses of their backyard reality, and navigate through all three zones in order to make it home in time for dinner.

The player will begin inside the Treehouse, but once they step foot into the backyard, they will immediately enter the imaginary world of the Sandbox, which will be depicted as a desolate and expansive Desert.

The zones will be broken up into the following:

The Sandbox/Desert - The player will encounter desert objects such as tumbleweeds, cacti, and, of course, sand. Somewhere in the desert they will encounter a household object from their reality (sand shovel and bucket in a sandbox). They must avoid the pacing blocks. From there, they will be permitted to move on to the next conquest.

The Swimming Pool/Ocean - The player will now be floating in what seems like an empty ocean. They must avoid getting attacked by a shark nearby. They should look for a life preserver to trigger a glimpse of their reality. If they find this object, they will advance to the final zone.

The Herb Garden/Rainforest - The player is almost home, and they can basically smell dinner, but they must navigate through the large trees and seemingly endless paths throughout the forest.

They must find the rake and watering can. These items will bring them back to their herb garden reality and back home for good.

1.4 Challenges and Work Distribution

Before we began creating elements and scripting, we determined that we would likely encounter challenges in the following elements of our project: transitions between these "missions", triggers between imaginative state and "real" state, and the distortion effect (what it might look like and how to implement it).

While tasks may be shared among all team members, we have appointed the following main elements of the project to a respective team member:

Video and game audio - Camille

Art/design and documentation- Parinia

Game implementation - Josh

Website and documentation - Beatrice

2. PHASE IIa: PROTOTYPING ZONE 1

2.1 Work Done

For our first in-class prototype, we decided to create only the first zone, the Sandbox. Testing out elements in the scene and triggers between scenes is necessary to solve bugs before implementing the other zones which will be built similarly. For scene elements, Parinia made the treehouse and multiple cacti variations; Beatrice made the animated snake and tumbleweed; Camille made the shovel, bucket, sand, and sandbox. Josh worked on the zone changes and reality glimpse triggers. Beatrice made an HTML/CSS skeleton for the website.

2.2 Challenges

Personal computer issues made it difficult to work in Maya and Unity for some people. Regardless, we were able to finish the Maya elements in a timely manner by sharing the responsibility to those were able to do certain tasks. Beatrice encountered issues when trying to animate the snake in Maya because of its slithering nature and low-poly shape. She also questioned how to get the animations to convert in Unity. Josh had trouble allowing the player to end up back in the same location they started with after the reality glimpse is over. Professor said it could be possible to have two cameras for both the reality and imaginative state. The website needed some additions such as a comparison slider and navigation sections.

3. PHASE IIb: PROTOTYPING ZONE 2

3.1 Work Done

For the Maya elements, Parinia worked on the life preserver and Camille worked on the video and audio. She recorded us, as the creators of the game, talking about our inspirations, work, and challenges throughout the process of making the game. She also created audio of the mom saying different things to the player during the game. Beatrice worked on a new website design and placed existing progress images and descriptions of the zones.

3.2 Challenges

Main challenges in Unity were due to layout of the zone and the mechanics. There is a boat that the character moves to reach the life preservers, and having scenes of getting in the boat and out of the boat would be interesting. Once the player has done everything, they would get out of the boat, but there was trouble coding the GetOut() functionally, so the player would be stuck in the zone. The fix was to change it so that it would work in a similar way to the other zone with triggers to the next scene.

Since we all had very similar inspirations for the game that we also mentioned in our video interviews by Camille, she had to edit out some repetitive parts for the sake of time in the video. This will make the final product more cohesive and interesting.

After switching to a new HTML/CSS design template, Beatrice had to tweak many of the HTML structure and CSS that was pre-defined in the template in order to properly fit all of the content relevant to YardQuest. This was a challenge as she had not worked with an extensive HTML/CSS template before.

4. PHASE IIc: PROTOTYPING ZONE 3

4.1 Work Done

Maya elements such as the rake, back of house, and watering can were made by Parinia. To save some time, low-poly forest and environment packs were found on the Unity asset store. The gameplay was modified so that the player would collect two objects before the could enter the reality zone; this is when the player can transition to the next zone. Beatrice worked on transferring content over from the previous website design to the new design, which fit the overall aesthetic and objective of the game as a whole. She inserted more sample media screenshots of the project progress and uploaded the design documents to the website.

4.2 Challenges

In the Unity scenes, the cameras worked properly but getting the sequencing correct was tough. Animations and audio needed to have the same timing, otherwise one would loop until the other finished. Animations needed to be made directly in Unity rather than Maya and they needed to be synchronized precisely so that they wouldn't mess with anything else in the game.

A big challenge with the website was updating all of the content, including descriptions, progress images, and documentation, as goals and requirements changed on the implementation side of the project.

5. FINAL PRODUCT

Our group presented the game and its relations to the course curriculum on the last instructional day of class. We talked about our inspirations of the imaginative space and escaping it to go home. To show the progress of our game, we displayed the original sketches versus the current game screenshots.

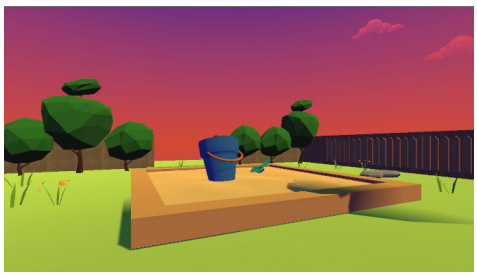

Figure 2. Screenshot of the Desert zone from the final game.