

FINAL BOSS

THE PROCESS
OF DESIGNING
HORI AND THE
CURRY' CHAPER.

FINAL

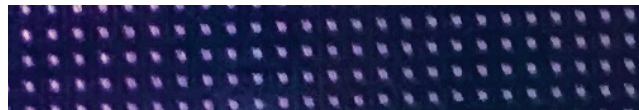
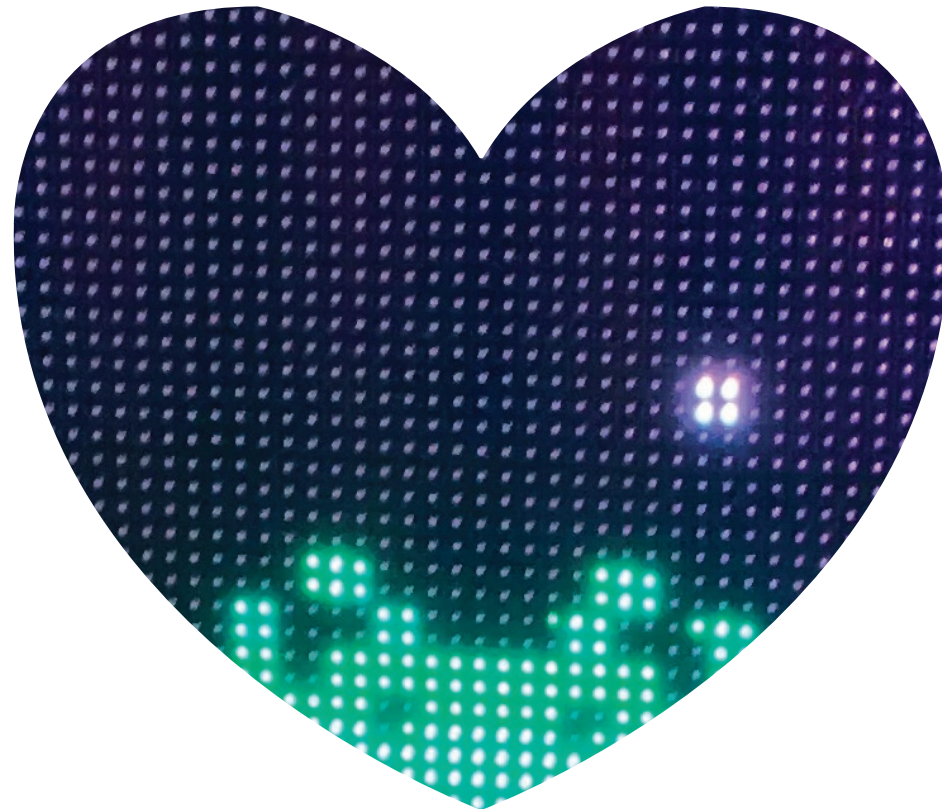
BOSS

by **JOSH COLDIRON**



This is dedicated to my wife who supported me on my return to
University, and my kids for enduring my reduced presence as I tried
to better myself.





I would also like to dedicate this to my enemies.
Success is sometimes the best revenge.

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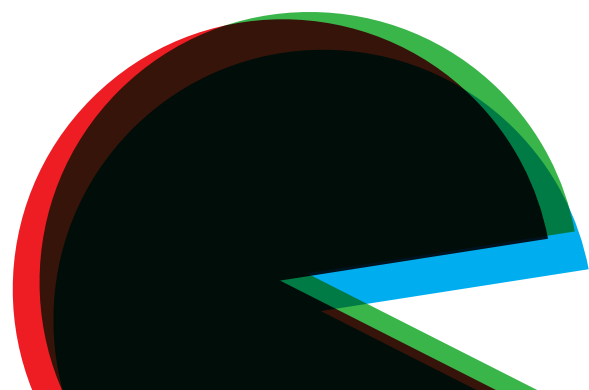


Introduction

Design is a broad term. Depending on what department you are in at

this school it can have different meanings. By definition it means to plan and organize. My goal with this project is to take my SIUE studies of Graphic Design and Computer Science and bring them together. I want to show the versatility of the concept of “design” and how it can be used in cross disciplinary studies.

Video games are one area that utilizes skill sets from different industries and serves as a way to explore various types of design from visual and audio to systems underlying the game’s functions. Taking on all the tasks required to make a game has allowed me to come to terms with what my professors have been saying all along, that I am indeed my own worst enemy, by often making my projects exceed the scope of what I actually need to do. While it has not made for an easy path, I feel it has given me a richer journey. The following is portions of that journey and my process of getting there.

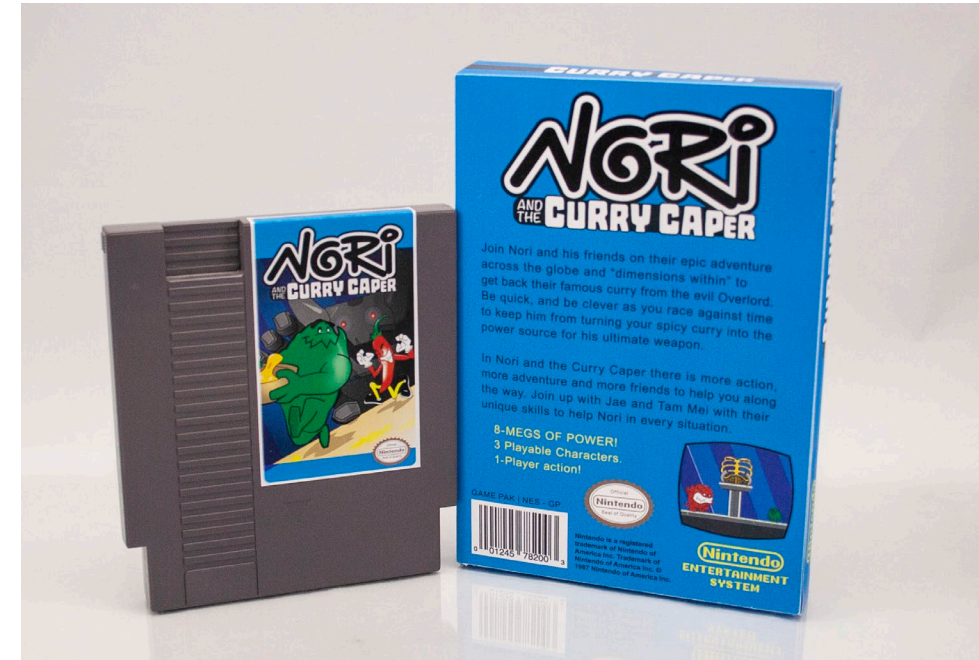


NORI

Nori started as a mascot for an online “Art Toy”

store and screen printing shop I used to have. In the process of naming the business, I had compiled a list of words that I liked the way they sounded. I went through the list for a week, and was still unsure. As I went through the list again with my now wife, I asked her what the word “Nori” means and her response was, “its Japanese for seaweed.” I immediately responded, “seaweed monster from Japan who fled here from Ninja Sushi chefs” and that became the root of Nori. As time went on, I decided to close shop and went on to start working in the video game industry. All this time the story of Nori and his adventures kept growing. He became the basis of projects I developed and experimented with and also sort of a beacon of hope for my career. While I have other concepts I have been working on for years, Nori was already out in the public eye. He became something I could use as means of getting some of my ideas out there and keep evolving him. Now he has become the center of my final project. For my goal to get into game design and interactive media, he serves as a means for me to learn how to make games on my own and begin publishing them.





So you might be wondering where the concept of Curry Caper originated from? It is actually only a small chapter from the story of Nori and I wanted something compact to act as my narrative for this project rather than going through the history of Nori or all his other adventures. I decided to push some of my upper class level projects into something to help forge its direction as a precursor.

I am a huge fan of curries from around the world that includes Indian curries, rendang from Malaysia and katsu curry from Japan.

In my typography course here at SIUE, I worked the character into a few assignments that sort of melded into the theme of this project. One of my assignment was to make up a restaurant and develop all the branding around it. I am a huge fan of curries from around the world that includes Indian curries, rendang from Malaysia and katsu curry from Japan. I played with the idea of gamification of a restaurant contest or challenges such as "Eat a giant meal and its free" for example. Since curry is often spicy and one of the few shows I make

time to watch is "Hot One's", I am combining the eating challenge and super spicy food for the theme of the restaurant. The restaurant has different levels of heat for the curries, but the main draw would be trying to take on their hottest "Level 10" curry.

I decided to utilize the final project for this typography course to announce my game project. I had been thinking about this project for my senior show for some time, and I felt this would be a great chance to develop the concept

and branding around it to put me one step closer to this giant project I was going to tackle for my final semester. The final project was to make a cartridge and case for an 80s Nintendo game that represent the concept of my senior project. I followed all Nintendo's guidelines and rules for cartridge design and licensing to give the look of an authentic product from the era. Both these projects from the typography class would be combined together to serve as the plot for my final game.



NO RI AND THE CURRY CAPER

When diving into any project, it is often a good idea to have a plan. With design we often have sketches, concepts, and research that goes into our work before we actually build the design. The same goes for software planning, the software design spec is a good practice that allows all the guidelines to be established to the development team. This help communicate all the goals of the design as well as primary functionality of the program. It also helps prevent the dreaded feature creep. Feature creep is when one keeps coming up with ideas for their program and continually inflating the project till infinity and in the end never finishes it. Adhering to the design doc helps prevent things like feature creep. Additional concepts can be added once the program reaches the finished state established in the doc. Once at the finished state, one can now end up changing the design doc as you go when hurdles are met or if something simply must be implemented in the program to make it a success. The following nine pages are the design spec I made before I started building this game.

Early in this semester we learned that there was a massive challenge ahead of me to actually finish this game by the deadline. With the limited time, the design specs were kept quite slim. You can also see features that changed from this and the final product as well as features that were added. The spec is fairly basic in its design principals, and strictly to communicate the goals.

NO RI AND THE CURRY CAPER

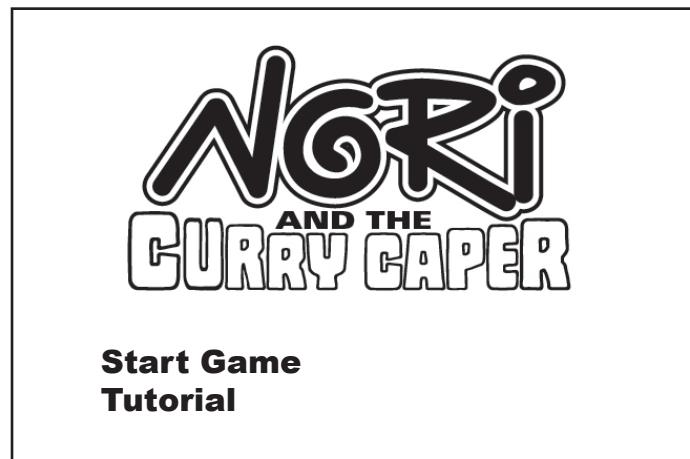
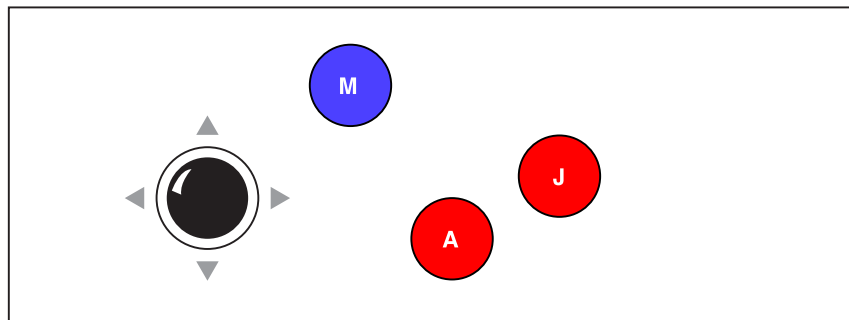
Software Design Document

Description:

Nori and the Curry Caper is a side scrolling action platformer by Josh Coldiron. This document will layout basic gameplay, player interactions and features to be included. If project is completed within the time frame then additional features will be considered. The images and text used in this document are just examples for illustrative purposes. Mock ups will be handled in their respective work flows.

Physical Interface:

The game will be running on a PC inside of a small arcade cabinet. The user controls will be a joy stick and at least 2 buttons for player controls, (A) action button, and (J) a jump button. A 3rd (M) button will act for menus. They are arranged in a way that relates to tradition controller layouts and to mimic that of a classic arcade machine.

**Load Screen:**

The player is greeted with the logos of the game engine, and developer logo as the game loads. This series of images is only shown when the game is first launched. Once the game is loaded the player is greeted with the main menu and logo splash screen. The splash screen is playing some vibrant music. The main menu will have the following options:

- Start game
- Tutorial (Optional)

Tutorial:

If the player clicks on tutorial they are shown a screen that explains the controls.

Start game:

If the player clicks on the "1 player" button, the game will begin. (See next page)

Optional:

If time allows an optional bonus menu item can be added for character and concept art as well as game credits. If time allows a possibly animation will play showing the game in action on a loop when the game is left idle for x amount of minutes.

Intro/ Story:

After the player has selected to start the game, the screen will go black and the narrative portion will begin. While the story is being read a music loop will continue to play. The game will begin showing the Curry house on the first level. The story will be told through a series of panels that show a static image of the character and text in its own panel to show the dialogue.

Initial story concept is as follows. Story begins with the 3 main characters the restaurant owner making food for customers and having minor conversation. A gang of angry mushrooms creatures will cross into the screen and enter the house. The story will convey that they were attacked by the mushrooms and two characters and the secret curry recipe are taken by the shrooms. The restaurant owner and Nori are left behind. The owner tells Nori that secret recipe is for a curry so hot that it will awaken a god of fire and destruction and he must hurry and get it back. The story ends and Nori exits the door of the restaurant to start the game. (Story may be condensed or elaborated on depending on time constrains and methods learned.)

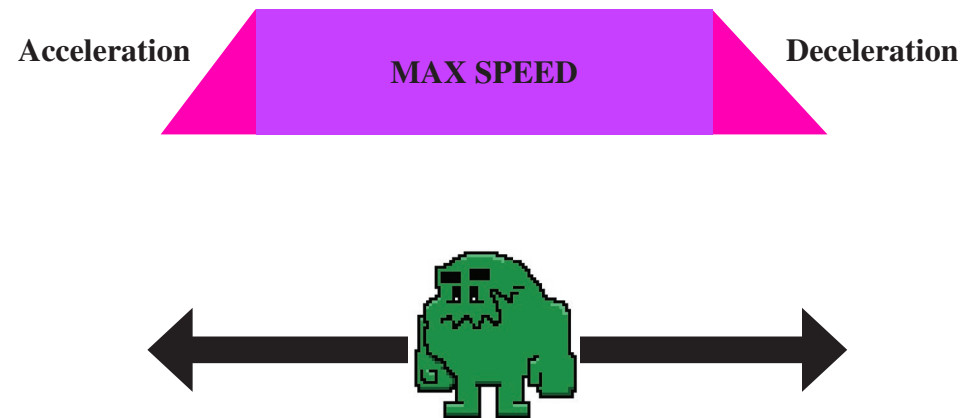
Interface:

Once the story is complete the controls become active and the stage music will begin. If the player pressed the menu button the game will pause and lunch a menu. The menu will allow for exiting the game to the main screen and possibly the addition of some settings if time allows. The joy stick will allow navigation of the menu and the action button will select the option. Pressing the menu button again closes the menu and un-pauses the game.

Note: Interface is only a consideration if game is formatted in a console design. If done in an arcade presentation interface will be minimal to mimic that of a classic arcade machine.

Controls:

The **joy stick** allows the player to move left or right. The joy stick also moves up and down, but unless more functionality is added those inputs will have no action. The character ramp speed has yet to be determined. This is the rate of acceleration to max speed and how long the character takes to slow down once input ends.



Pressing the **jump button** allows Nori to jump straight up. Height will be determined during level design. Pressing jump and a direction at the same time allows Nori to jump in that direction. Distance will be dictated by level design.



The **action button** will work in different scenarios. If Nori is next to a NPC (non-player character) A symbol or text will appear above the NPC to inform the player they can interact with them. When they player presses the button dialogue text will appear in a box on screen and the text can be scrolled through faster by pressing the action button.

The **action button** works differently with enemies. This will have 2 attack modes. If there is no NPC present, pushing the action button causes Nori to use a melee attack. If Nori has a power up (see combat section) different attacks are accomplished.

Power Ups:

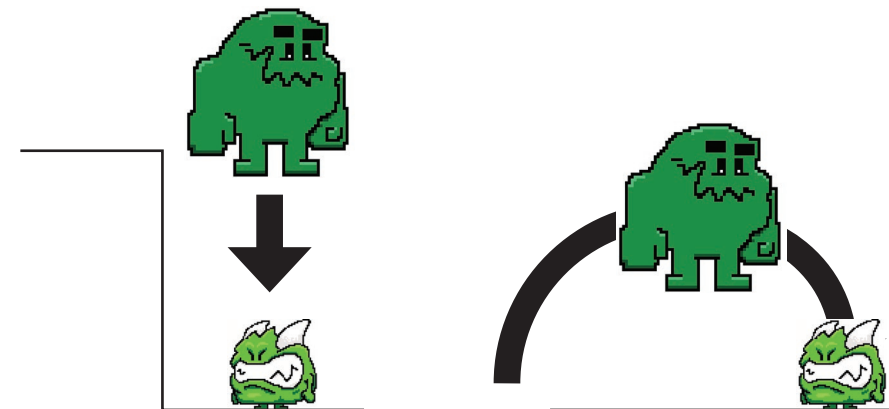
Power ups give the user special rewards for collecting them and change elements of the game. Current power ups concepts are as follows:

- Ramen bowl: Gives the player extra times they can get hit in game .
- Small Chili Pepper: Gives Nori the ability to launch a fire ball from his mouth.
- Large Chili Pepper: Makes Nori invincible by being on fire and allows him to move faster.

Combat:

Nori is granted multiple ways of fighting enemies. Some are through puzzles, and some are by using his physical self. Nori can get hit by default two times before getting a "game over".

- If the player sees and enemy they can jump of fall on the top of small enemies to defeat them. Due to the likely short game length, the game will be set to a higher challenging level.



- If Nori touches the small chili pepper power up he gains the ability to spit fire balls. This gives him a range across the screen. This will last until he either touches water or the meter runs out. Meter parameters have yet to be set. May be time based, or count based.



- If Nori touches the large chili pepper power up he gains the ability of invincibility. He will glow red, and change color. His speed will also increase and maybe jumping height. Any enemy he touches will die in one hit except for bosses.



- Boss combat occurs at the end of level or part of a story event. Boss combat is currently the same as normal combat, but the boss will require more hits. The boss will also have more attack options than the small enemies. In this case puzzle elements may be employed for helping defeat the boss. Having an invincibility pepper will not hurt the boss, but it will prevent you from being hurt if you touch a boss. AI will be simple and rely on the concept of a state machine.



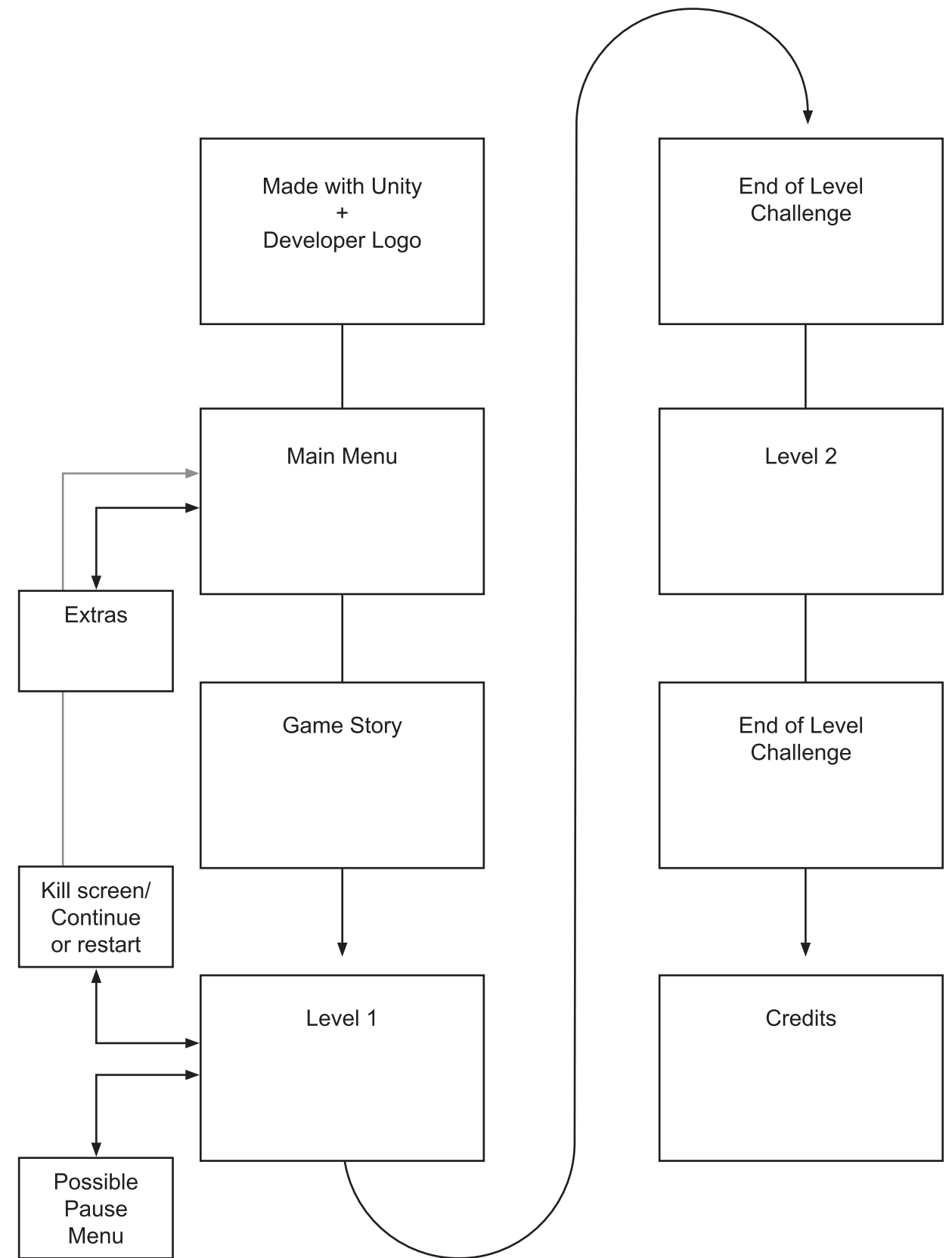
Platforming/ Puzzles:

In addition to the combat the player will be required to navigate the terrain with the bump button. This will be designed in a way to produce some platforming and possible puzzle elements. This will include jumping over obstacles and possibly moving platforms that will require timing.

Commercial:

Once the player has reached the end of the first level/boss, the demo will launch. This will include information of upcoming features, including showing other playable characters as well as some of the other bosses. Once the demo is done, the game will relaunch to the start screen.

Game Scene Flow Chart





The logo has its roots as the mark for my old toy store. Here you can see the initial design and the refined version I reworked over the years (top left). The idea of this mark was to be bold and playful. The “O” acted as a sushi roll to reference back to Nori. The revised version (top right) was cleaned up a lot more with all the jagged edges refined as were the weights for a cleaner and less dense feel.



When I reworked the logo to be utilized for my game title, I did some minor tweaks to “Nori” on the top. I experimented with a lot of revisions for “and the Curry Caper.” I wanted contrast, but also to include the illusion of land or island where an adventure was taking place.



On the facing page is the fully realized logo. I added color and texture. I wanted to reference the colors of seaweed in “Nori” and invoke the idea of the spicy in the “Curry Caper”.

NOIR

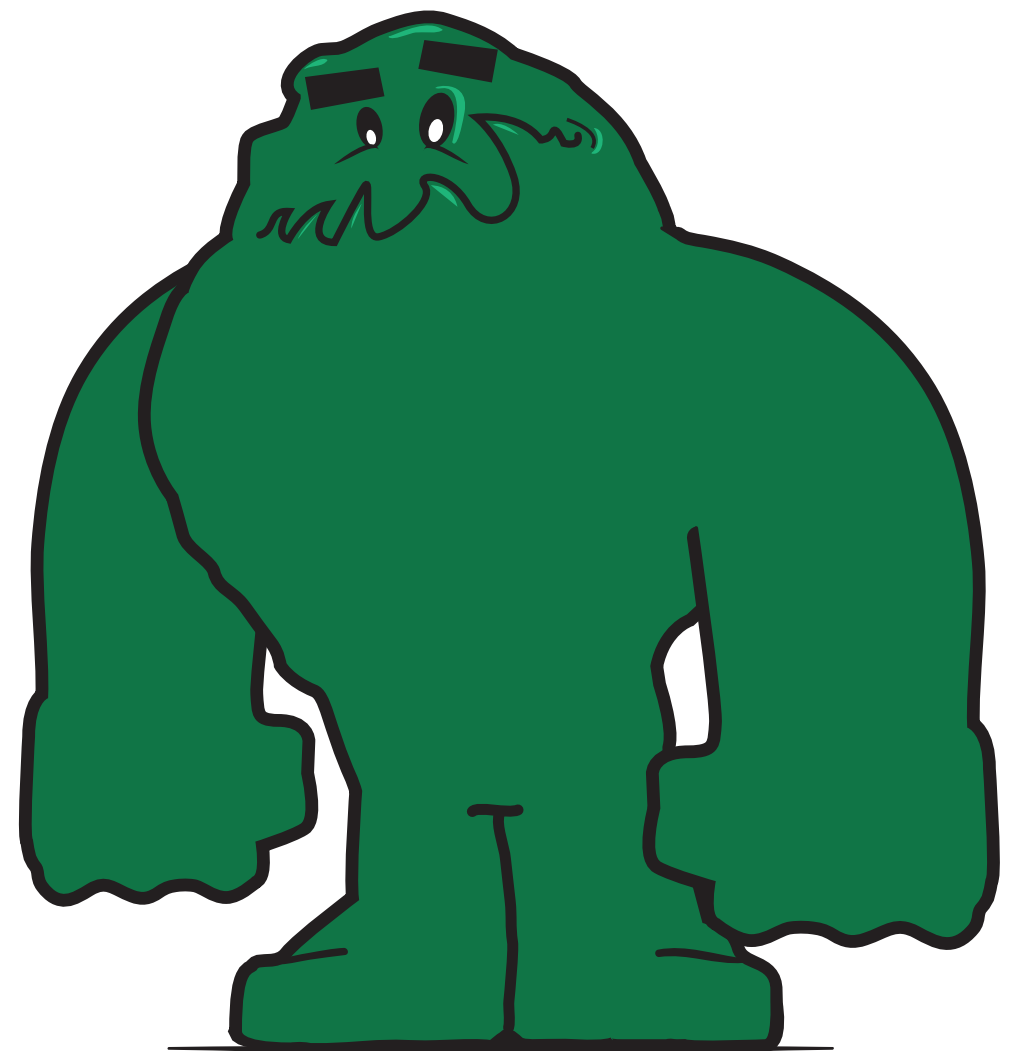
**AND THE
CURRY CAPPER**

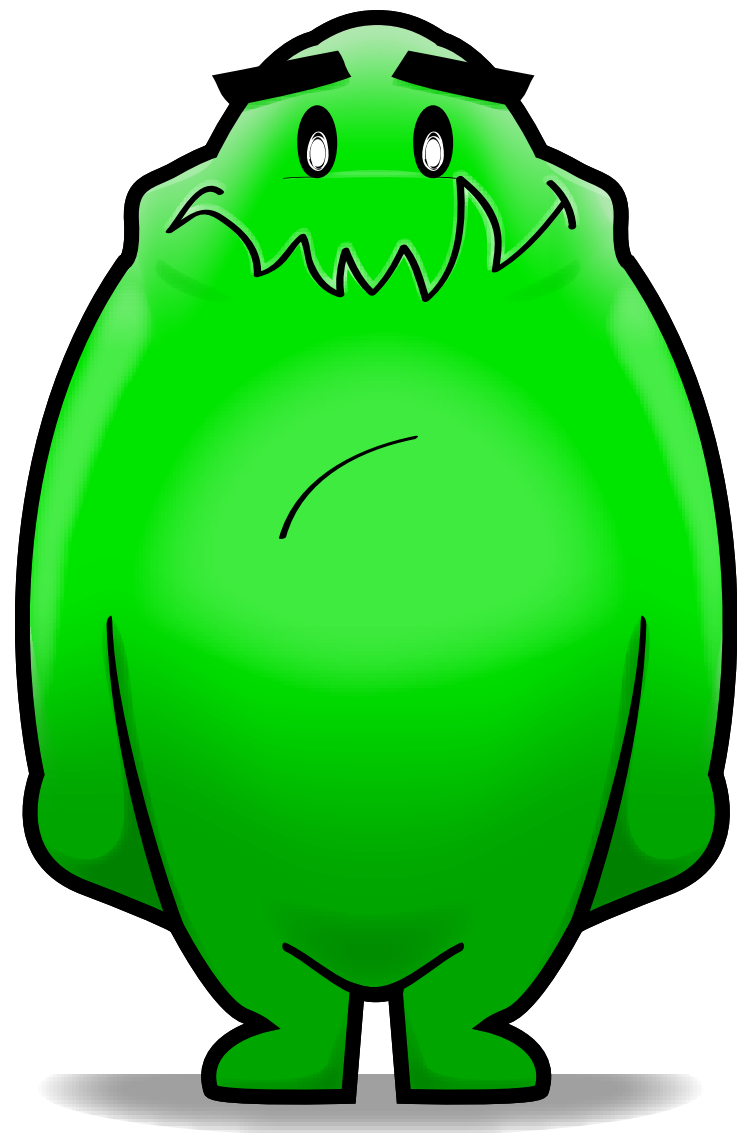
CHARACTER

To better prepare me for the character design,

I decided to use my time in my 441 “Research in Drawing” course as a means to better understand representation in media. I opened up an online survey, interviewed various members of the community and read many articles on the subject. I looked back to how cultures have been misrepresented and parodied in various western media. While this project did not lend itself to drawing people as much as I might have planned in the beginning, I feel it gave me the ground work to better represent various peoples in media I create. I also felt this is something important to the world I create as I continue to grow and develop Nori’s and his friends’ stories.

Nori’s first design was quite simple. He had a solid color, which was a darker green that was based on the actual color of seaweed. Outside his black outline, there were some simple highlights. To make him stand out, he had a signature mouth that I developed and a single sharp tooth that stuck out compared to the rest of his toothy grin. I wanted to show that he was a strong character, but also happy and kind. My original thoughts of him being from Japan was to take inspiration from the concept of Kaiju, which is genre of monster in Japan.





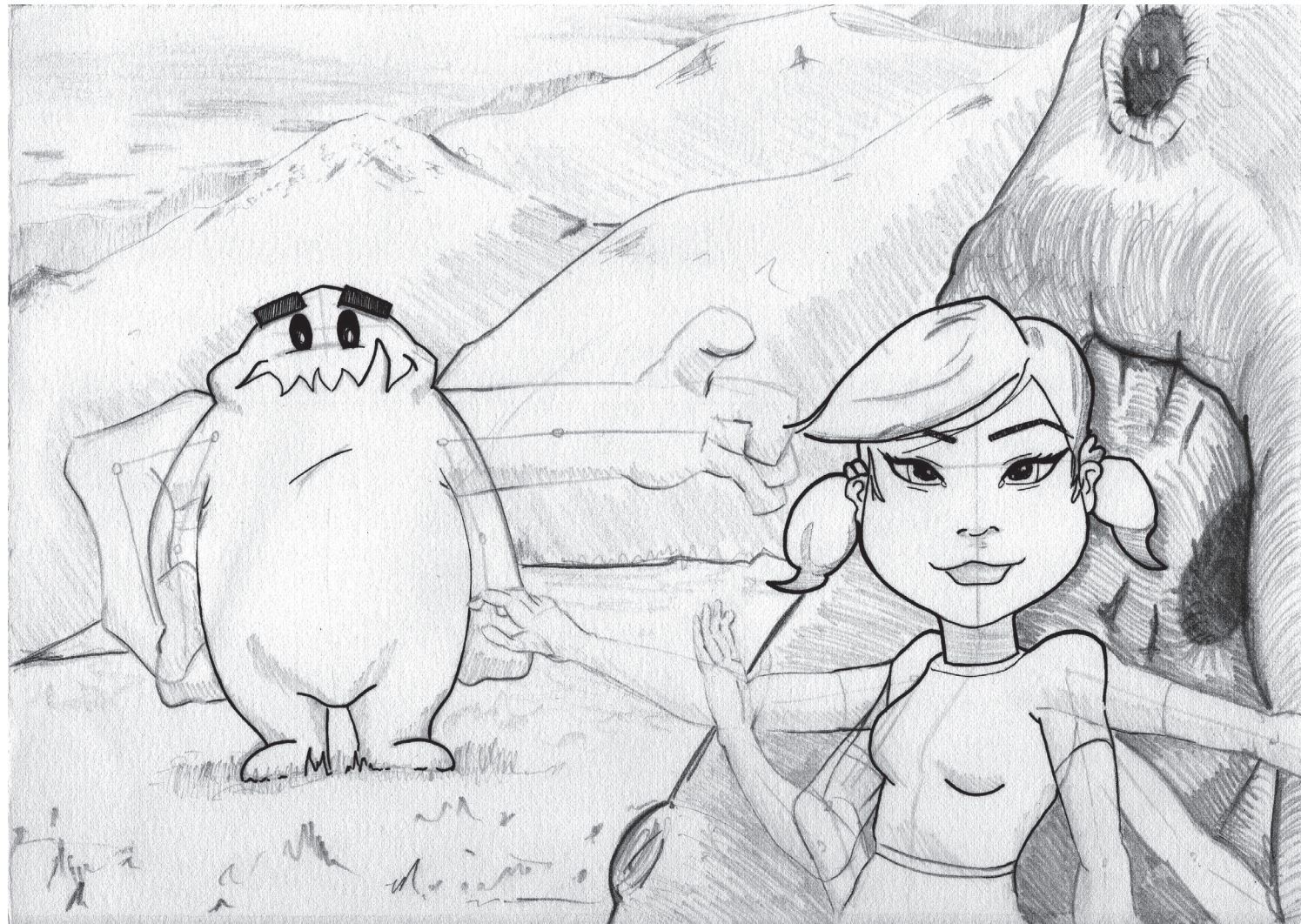
After I decided to redesign the character and do more projects with Nori, I wanted to give him a much more friendly look. I made him a bit more doughy in his build, but still wanted to give somewhat of a presence of strength. I also gave him a lighter green and brought shading in. I was happy with this Nori and felt that I had really reached what I wanted for his design.

All that changed when I tried to animate him. I began developing a profile and poses for him and found they just did not read right. It was hard to keep his look consistent which lead me to this new look. I began developing just his body to sort out run and body shape in dynamic situations. Once I was happy with how I could get the parts to move, I reworked his arms. I felt I was able to make him even more friendly, while giving him the anatomy for him to have actionable abilities.



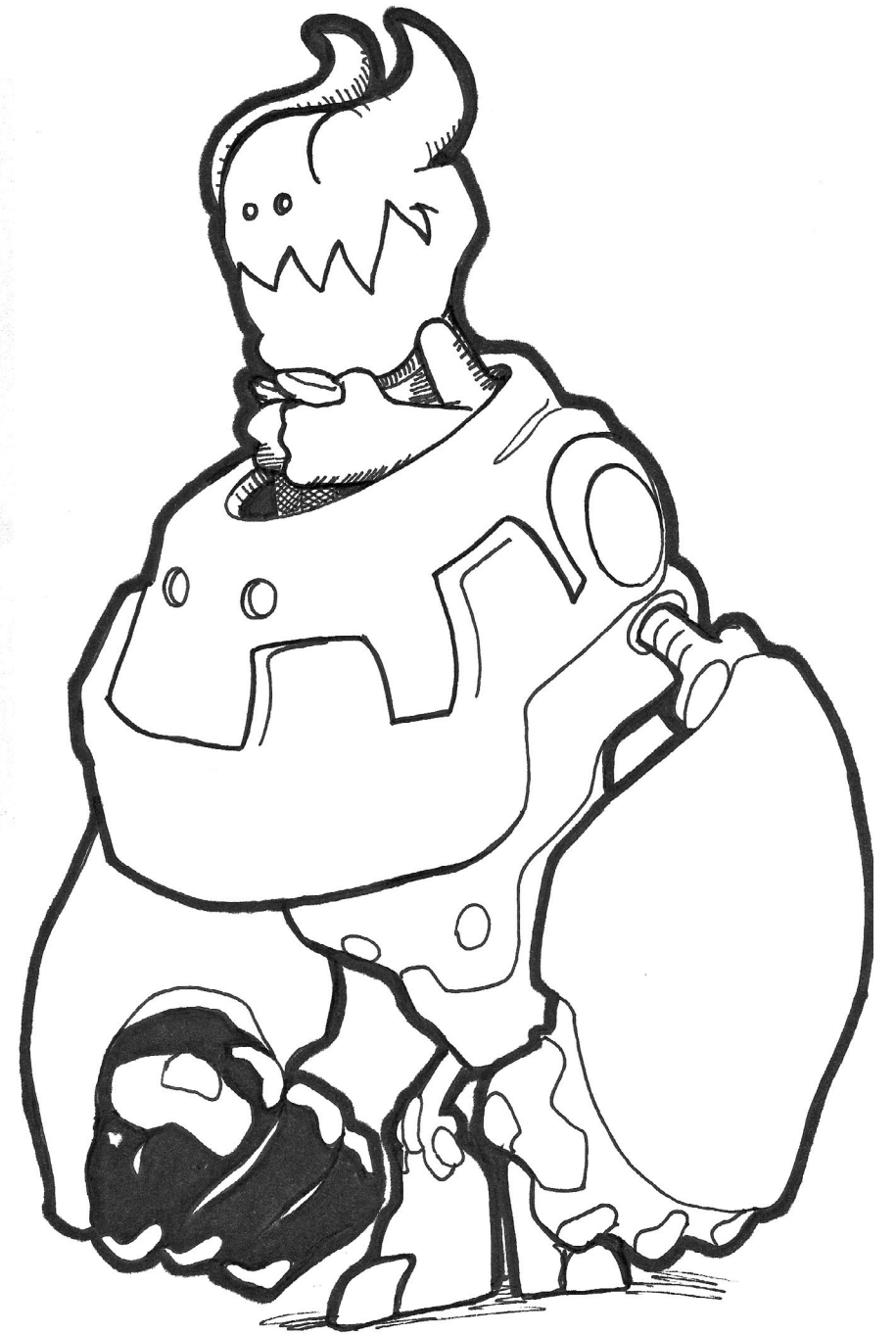
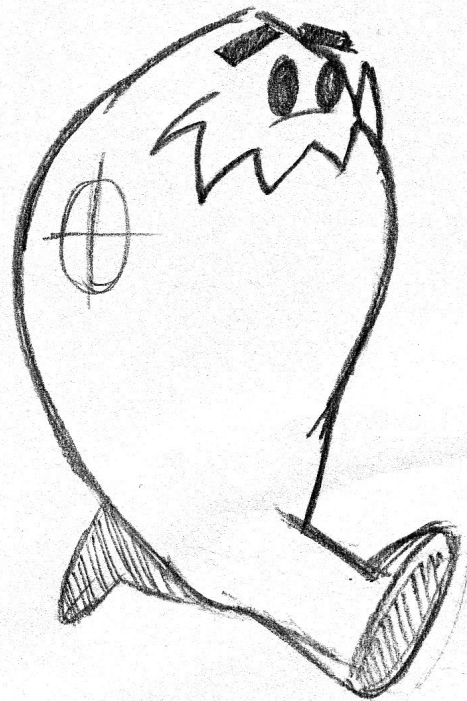
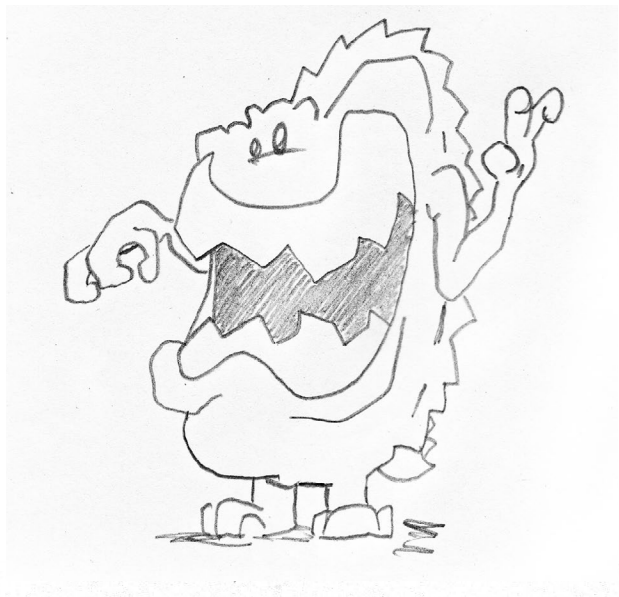


Many sketches and projects went into coming up with characters for this game. One thing I had learned in my travels around the world is that food is very important to culture and kinship. In these upper images I produced works with these characters to see if the designs of their forms arose naturally. To call back to Nori's roots of screen printing, I had made prints where I had drawn into the screen and pulled a loose form of Nori for a base layer. I then sketched the form of the environment and painted food in a more realistic manner. I then tried to bring the characters into it and see how their relationship with food might introduce ideas into their family culture.



Other attempts were approached by experimenting with environment and considering the potential movement of the characters.

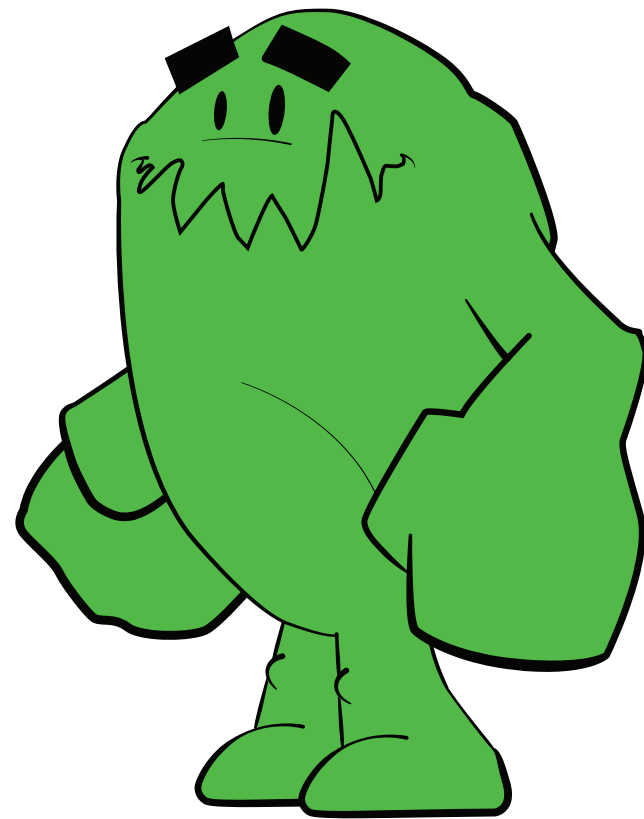
On the opposite page I played with a lot of quick character sketches to flesh out Nori as well as come up with a variety of basis to build the enemy characters from.

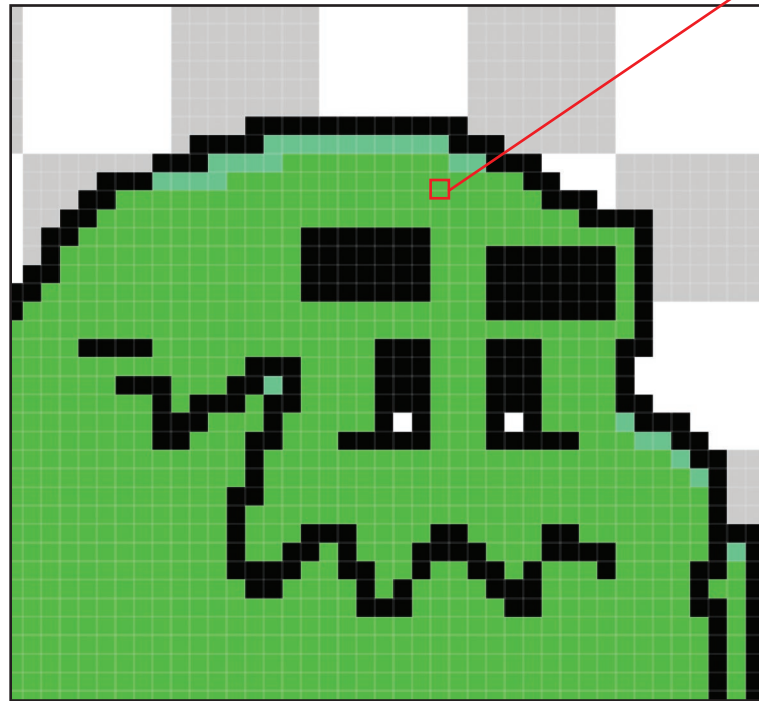


Sprite Atlas

The first part of this semester, I had to research

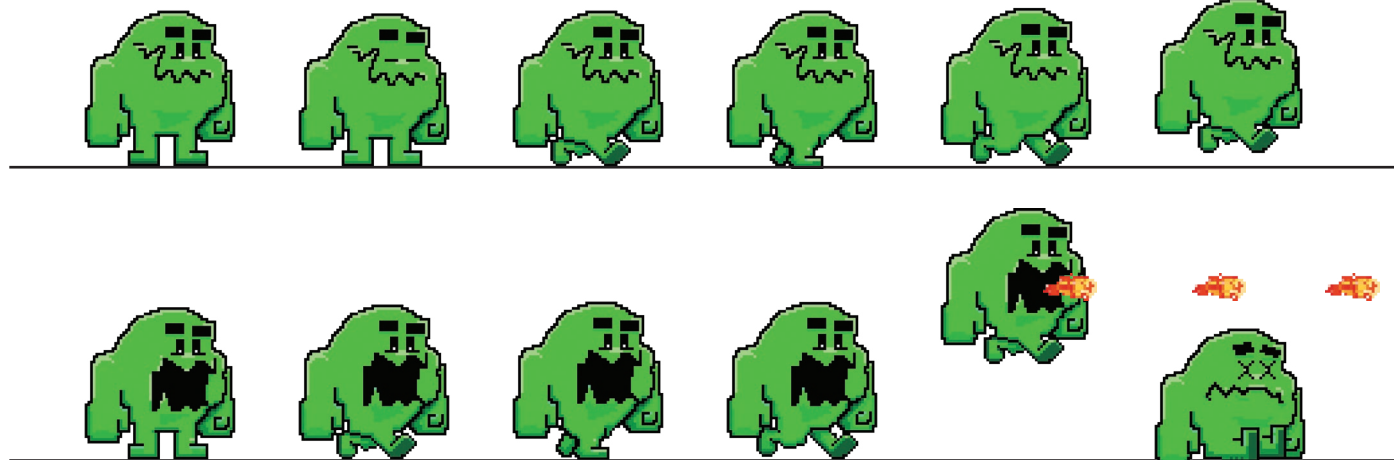
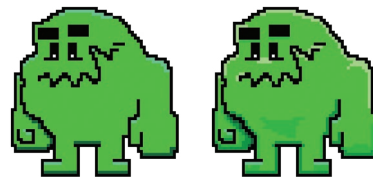
into various technology to determine which technique I would use produce the game. I wanted to have a more hand drawn style originally. I spent some time learning some programs like Dragon Bones which lets you build armatures to animate and deform characters. While this was a useful tool, I found that it was too time intensive to try and produce a whole game this way. I had already designed a pixel art version of Nori for the design doc that called back to the 8-bit generation. I decided to perform one last test of animation styles of a pixel art sprite that was in between the vector and the 8-bit versions. Through this I decided the scope of the game I would be better suited to do the 8-bit style.





1 pixel

Pixel art is the computer illustration method that relies on the artist to work pixel by pixel. Modern screens have many pixels now but in early video games there were much less pixel to work with. You can see how many pixels there is in this blown up face of Nori. This shows what I have to work with to try and make a unique expressive character. Nori is made within a 64 x 64 frame and his facial features are 28 pixel wide. Once I had figured out my design and animations, I then came back and added subtle shadings and highlights to Nori to give him more depth.



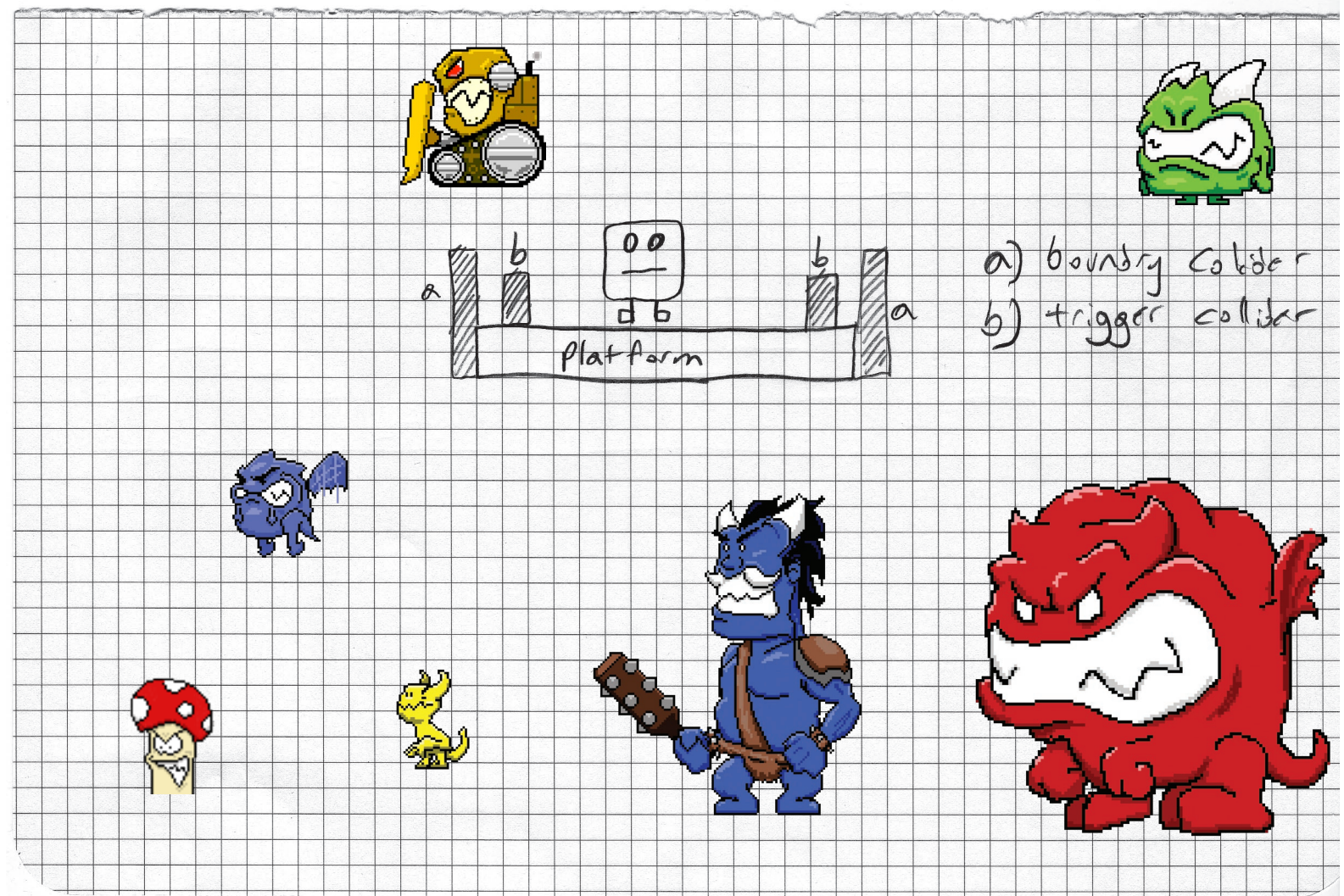
Once the characters were made, animations were needed to be done to show the characters different actions. This is some examples of the animations needed for Nori. Standing, idling, running, jumping, spitting fire, and death covered most of the interactions. Each sprite needed a certain level of animations depending on all their actions.





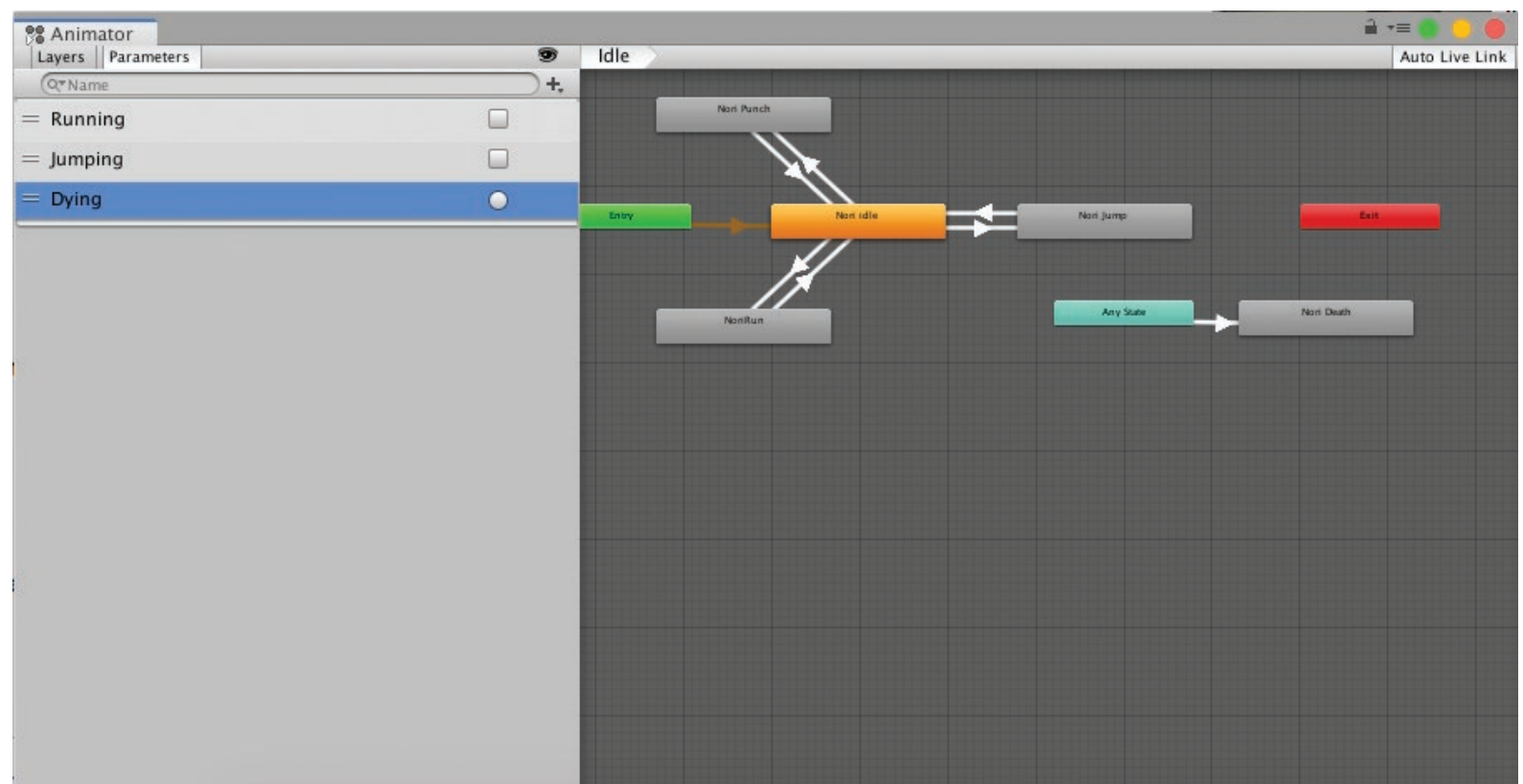
While the characters were already drawn in a simple style, I further reduced them down to work in the pixel art style. Sometimes I find it good to sketch with pixel rather than on paper to see what just making a few simple blocks could result in as far as reading it as a character.

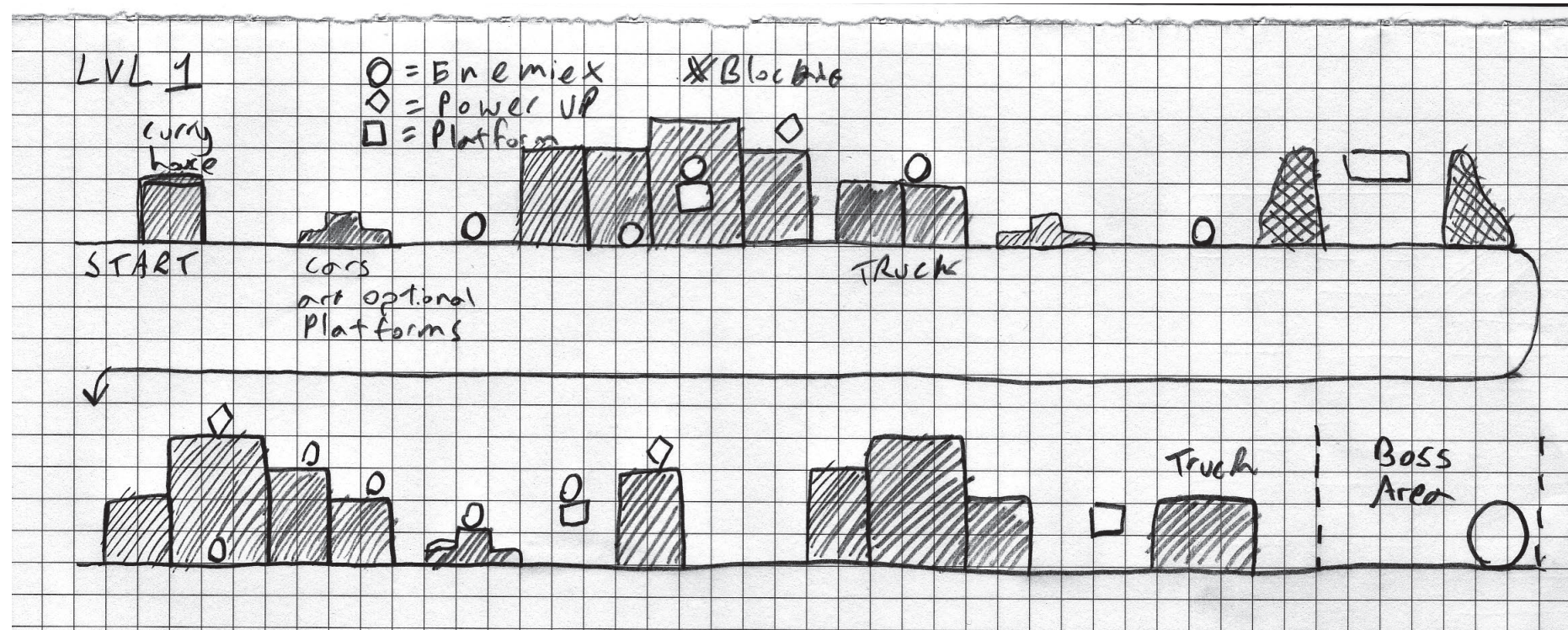
For their designs, I took a bit of what already comes from my mind and mixed it with creatures from Japanese lore like Oni, Kaiju, and Yo Kai.



Animation comes in parts when making it for a 2D game like this. You have multiple sprites that will change between each other like any other animation, and then you have an animation controller. It is a component that works with characters' programmings to select animation for the right situation.

Lastly the characters all have an AI. It is not so much an AI as it is a state machine. It produces the illusion of a character making choices, but instead it is a series of invisible switches and conditions that makes them follow a certain path and react on a pattern.





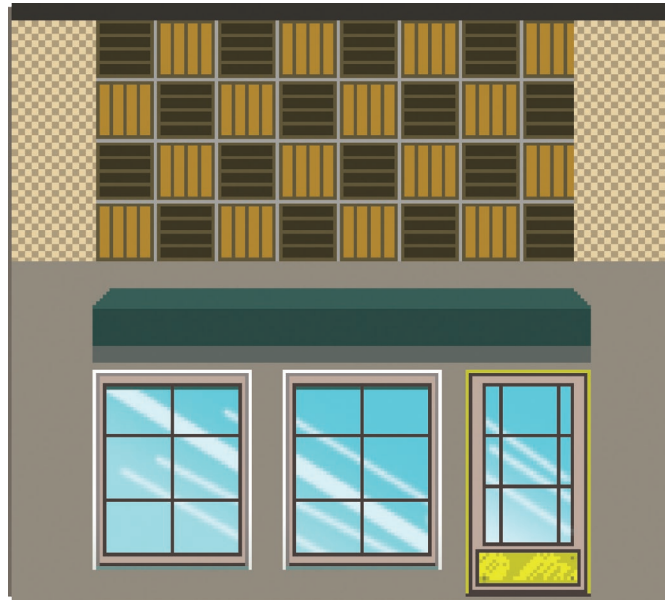
Much of the story I wrote was around my hometown of Knoxville, TN. I had a connection with nature there. The mountains had a magical sense about them and it allowed me to build characters from the lore of the forests. Not only the mountains, but the city of Knoxville has some unique architectural elements. Since I was unable to travel 500

Not only the mountains, but the city of Knoxville has some unique architectural elements.

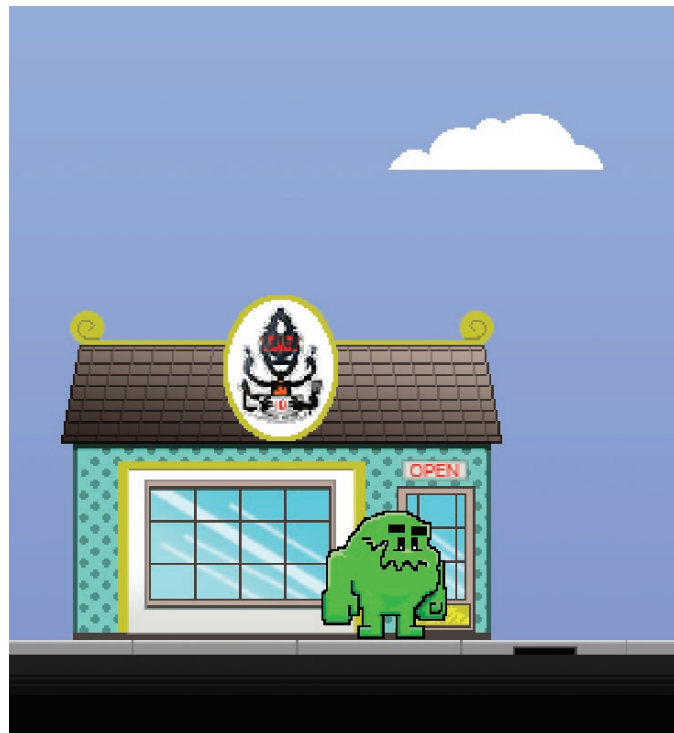
miles to go look at the buildings I decided to go to google maps and turn on street view to take a virtual walk down Gay Street which is in the heart of Downtown. From here I began looking at key elements of buildings there. Rather than trying to copy the

city, I took inspiration from design elements of the windows and textures used. One thing that always bothered me about old games was seeing the same assets used over and over again. I understand the resources are not there to have a lot of variety built, but I felt I could come up with a compromise to vary my elements. To do this, I build modular elements. From the tiles for the ground and walls, to the buildings, I made a system that allows me to create a larger array of elements so that the design does not feel repetitive. I had made over 50 different buildings just for that one element of graphical assets in a single level.

I had come up with three must have scenes for my game. First would be the city of Knoxville, starting at the curry shop. Next would be a pursuit through the forest, then up the mountain and lastly into the mountain. Of course this being where the god of spice resides, the caves would be filled with lava.



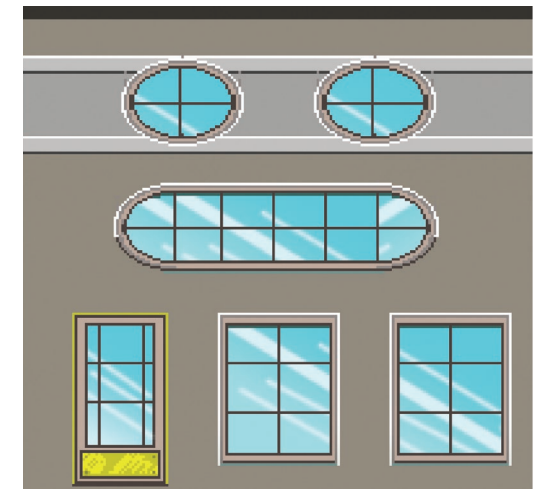
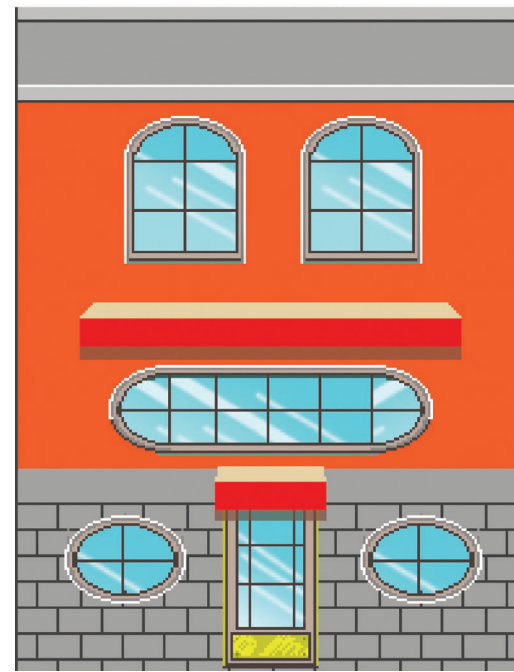
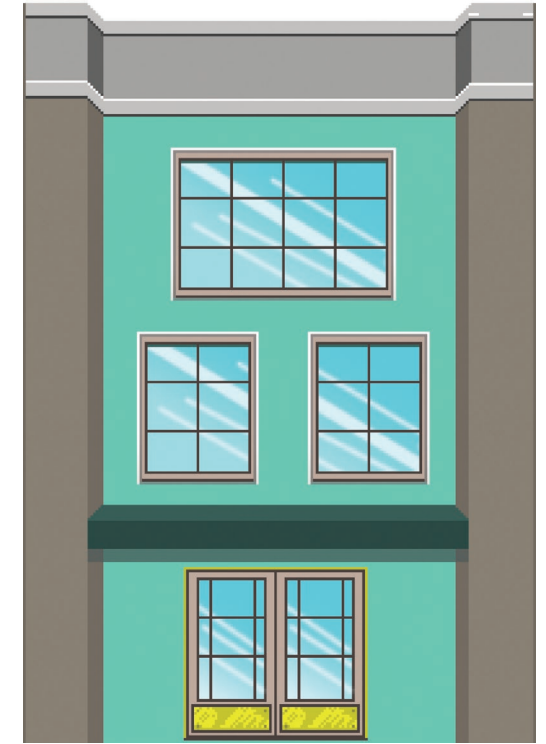
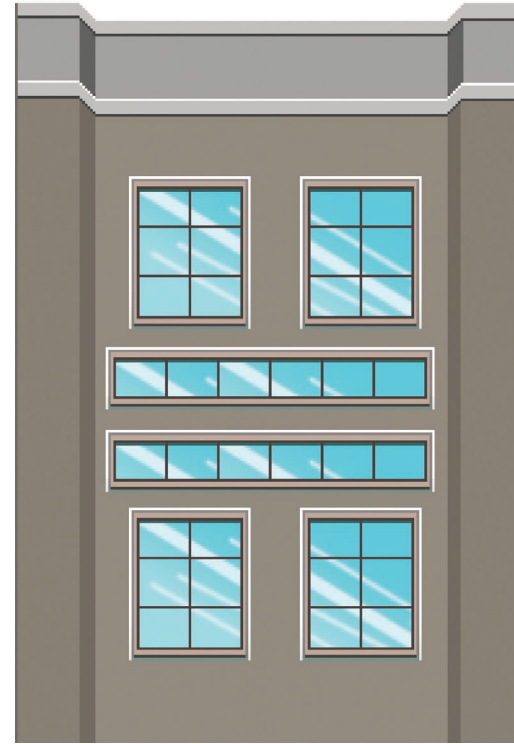
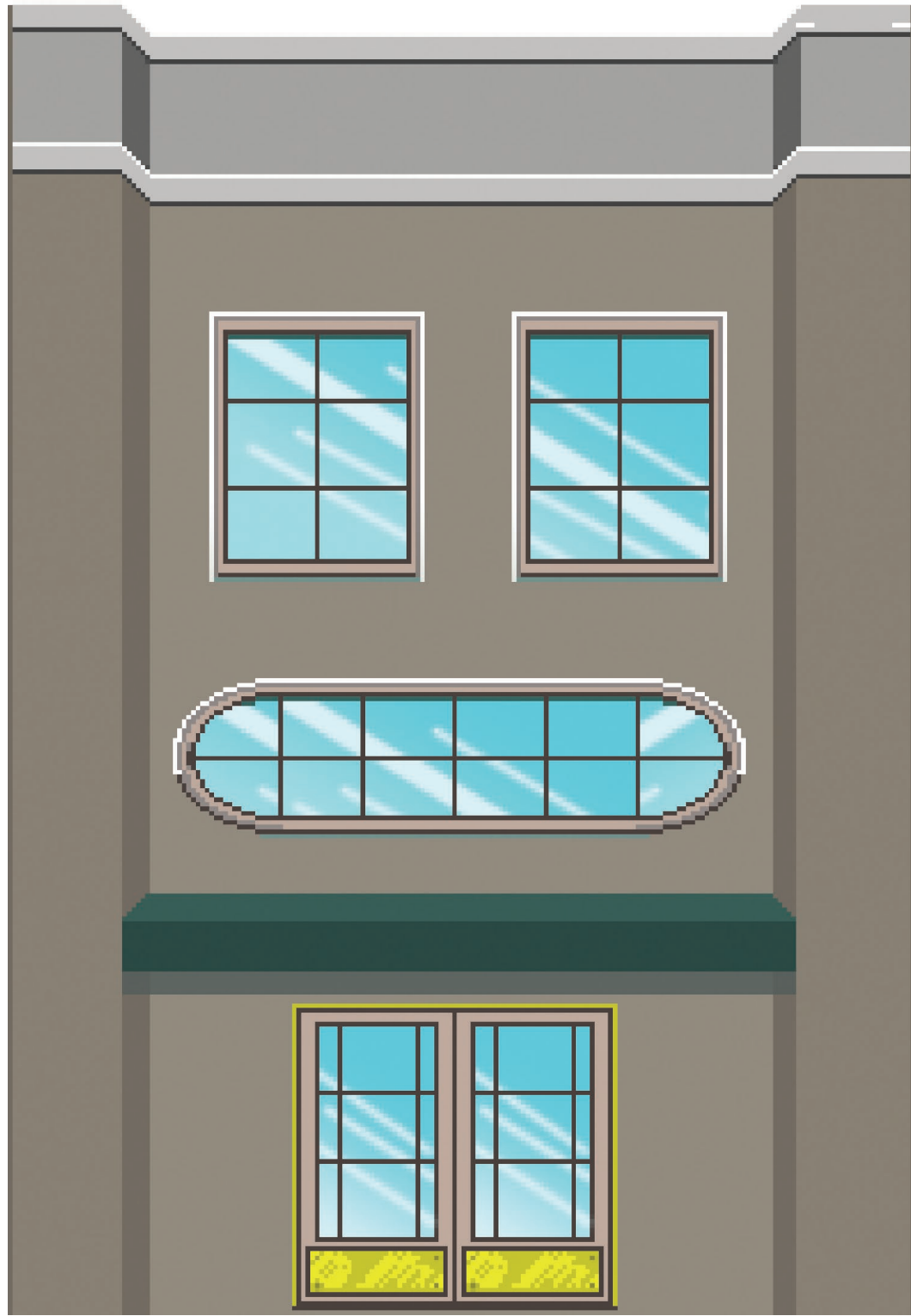
Small elements and motifs were inspired by actual buildings in Knoxville. The downtown does not have as many buildings as I needed for the first level so rather than recreating them, I used elements to make many buildings to call back to the K-Town architecture.



The Level 10 Curry House took inspiration from one of our favorite restaurants back home. Plum tree is a Chinese/Malaysian dining establishment that has special dishes not on the menu. If I walk in, the owner already knows what I am going to order, so they don't even ask anymore.

A walk down Gay street: Here is a sample of some of the buildings as I used google maps street view to check out the buildings for inspiration.





Working in a modular way allowed me to produce more variety in buildings in a shorter time to try and give the works some interesting background rather than repeat the same ones over and over. By making other elements like street lamps and other city decoration, I could also use the object locations to add to that variety.

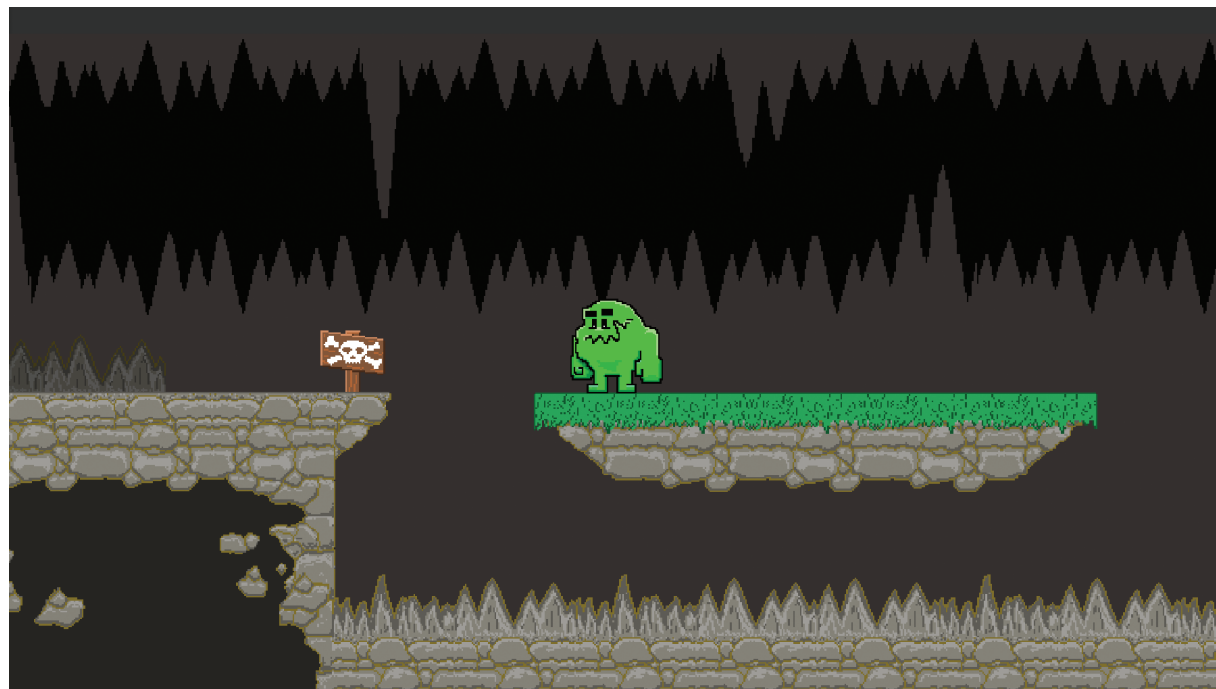




Level 1: Inspired by Knoxville TN. Nori starts in the city with parallaxing mountains in the background. As they get closer to the end the city gets more sparse as they enter the next world.



Level 2: This part of Tennessee is famous for dogwood trees. I incorporated those and progressively made the mountains larger as Nori ascends the level.



Level 3a: When I was a kid I used to explore caves in the area and I wanted to create a cave that allows the player to transition from the natural known world into a more mystical environment.



Level 3b: This takes us to the final part of our challenge. Nori is seeking the key that is going to summon the spice gods, so I felt taking the player underground into a lava filled environment will help drive that narrative with the world building.



As we have explored so far, design takes on many forms.

Obviously we begin with graphic design principals in handling of all visual elements. Graphic design is very much about research as well. It is not just instinctual arrangements, but organizations as a result of studies of ethnography and psychology. Knowing cultures, history and common

a tactile component as well. From buttons, sounds, and voice controls, UI can branch out to many components. For this project, all UI is handled through the joy stick and buttons. Starting the game, moving the player, jumping, and etc., All are a result of button input which come built in with their own mechanical form of feedback. Other elements in the

Knowing cultures, history and common responses to colors and forms associated with those are key to reaching a deeper level of communication outside of simple aesthetics.

responses to colors and forms associated with those are key to reaching a deeper level of communication outside of simple aesthetics. While graphic design is built on research, it is not as data driven in most cases as UX.

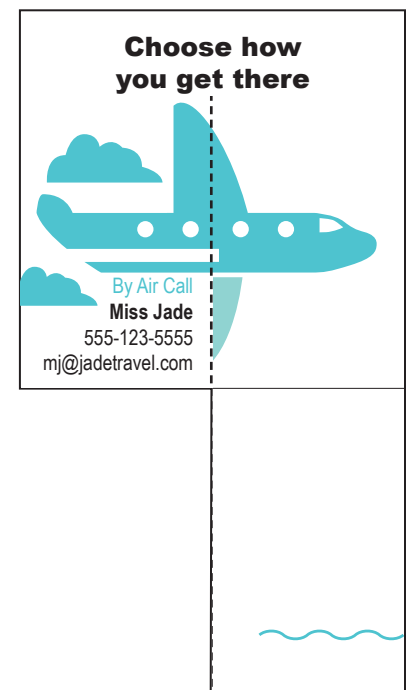
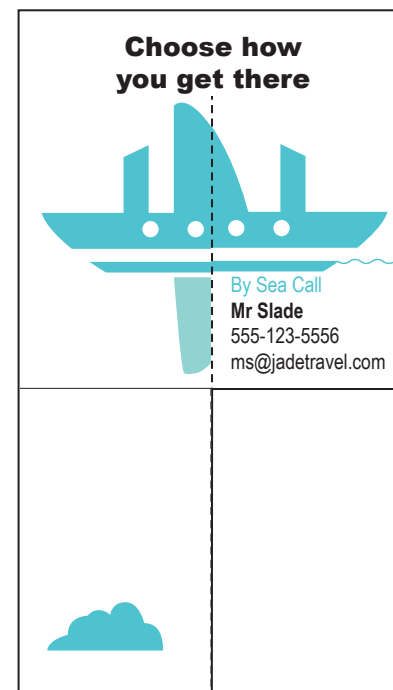
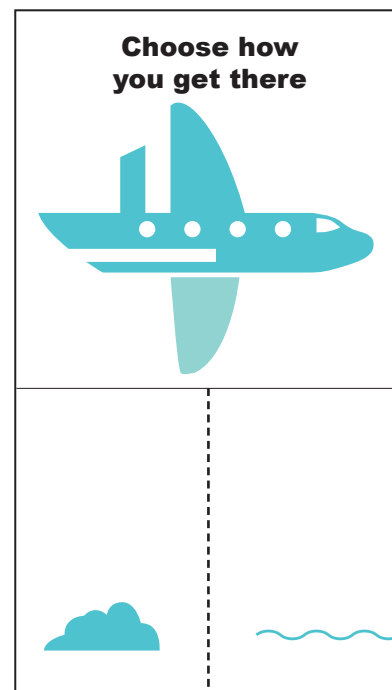
game are interacted with via proxy. The user moves the joy stick which moves the player to interact with an element. This provides a very meta approach to UI and allows one to think of inputs in layers. Below is an example of sprites used in a 1up animation. The moving of the object is to draw attention to the heart and the player interacts with it through the character they are controlling.

User interface design (UI) stems largely from graphic design and often exists in the digital realm. It is commonly overlooked that UI design has



Interaction design is any media that allows or requires the user to interact with it. One might argue that observing a work is interacting through sensory organs, however interaction in most cases requires some sort of input that changes the state of the work. I have long been interested in interactive design. I have studied Apples' and similar companies'

package design as the act of opening a product coincides with an idea of presentation mixed with interaction. Below is a sample of an interactive business card I made. Thinking of how elements can change and be manipulated by the user allows one to instill wonder, and produce narrative even with a single piece of paper.

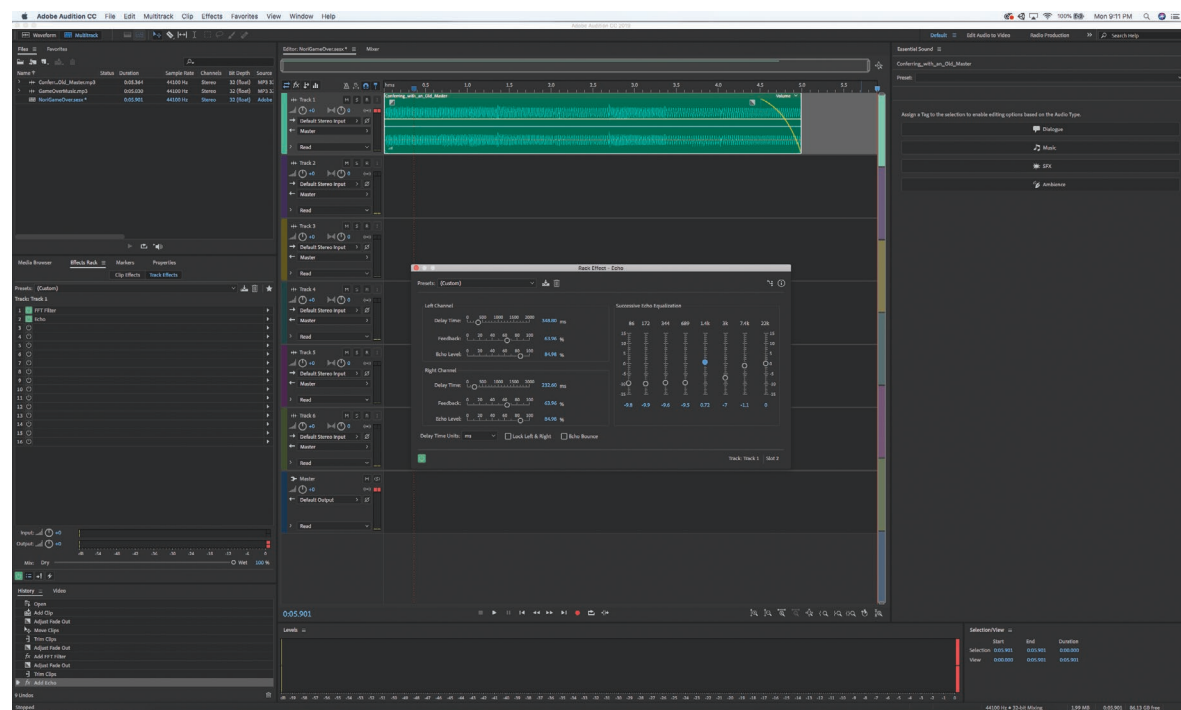
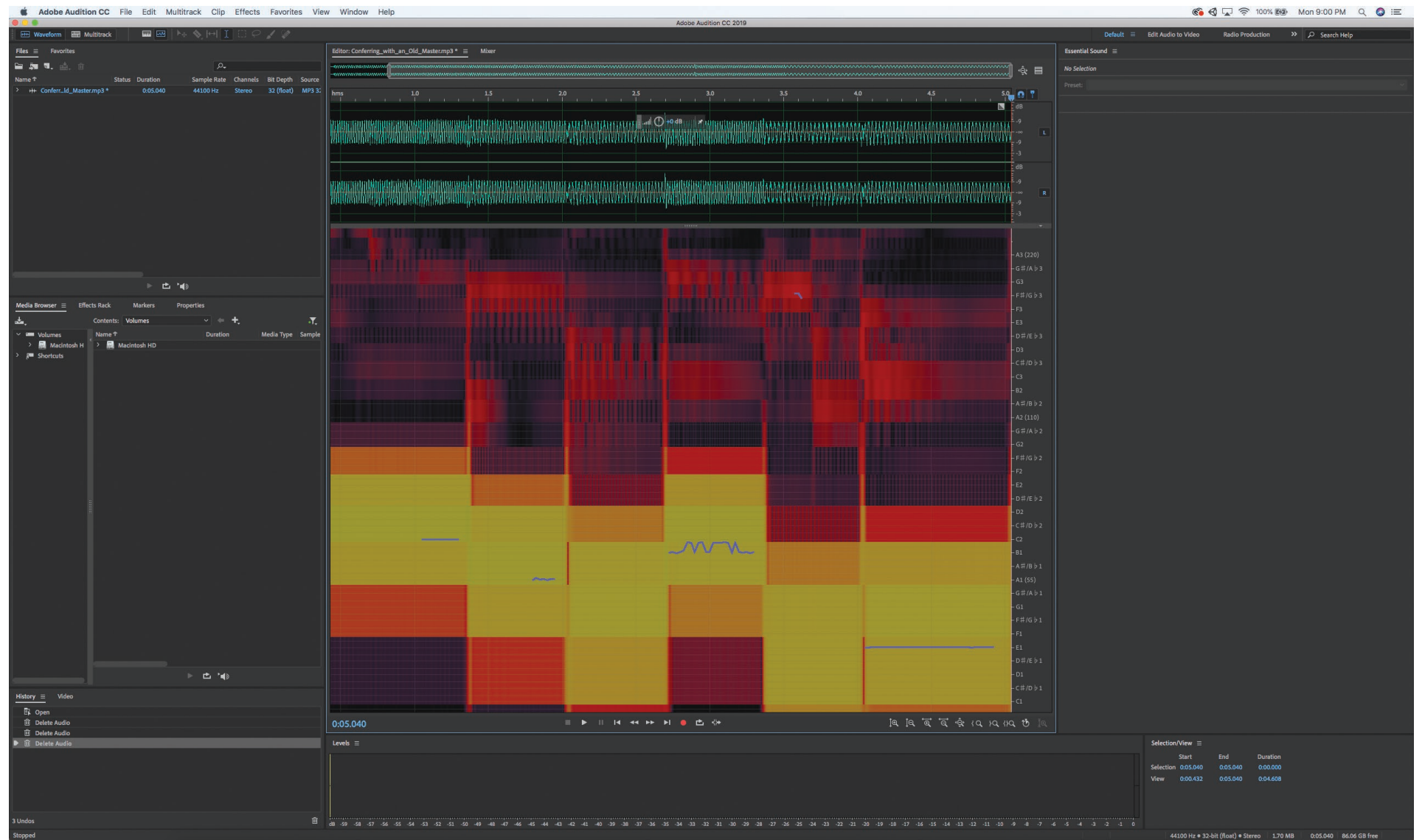


Last we have User Experience design (UX). All of these design strategies are not that far removed. Each one requires the designer to take the relationship it has with the user/viewer and how it impacts and leads them. UX is the more scientific approach. It functions in two different phases: Research and Validation. UX designers will look into statistics, run test groups and build prototypes. They will then test those prototypes and refine the concepts. UX spends more time trying to understand why things work in a certain way and how to effectively implement them. Following that approach with this game relied on looking back at gaming history and culture. Using the data of what has been done and what is expected, designs like the button controls is something that is tried and tested. We can use information like that as a foundation and then build prototypes to get user feedback. For this project, I performed this on a much smaller scale and my test groups were volunteer QA testers. Given more time, I would have likely used a lot more data testing to go as far as measuring button spacing and taking concepts related to time more into consideration.



To the right you can see what is a very simple UI. It has one command that allows interaction but it has multiple functions. The UI has to inform the player that pressing the player 1 button, the game will begin. It also has to act as an idle screen while the game is not being played to grab attention. It does so with its animation and its music. Lastly it has a technical function for the monitor. The two screens on the right, animate and blend into each other. Since the game will be running for a couple weeks straight, it will likely spend a fair amount of time running. This is needed to prevent screen burn. So like a screen saver of old, this constantly changes to preserve the monitor.





In my overly ambitious attempts at this project, I had planned on doing audio design as well. Even though I am not a musician, I wanted to train myself to create the audio. I was even looking into Foley methods of making SFX or even using chip tune software. Due to time constraints, the majority of sounds and music come from royalty free sources. I did take some of these sounds and edit them in various programs and change elements about them to make them fit better. I also produced a couple of my own sounds. Much of this portion was curating audio that fit the period and that helped evoke the ideas while not being annoying. Audio feedback coincides with my thoughts on interface design as a means of giving the user feedback.



You may wonder, “why and arcade cabinet?” to demo the game. The arcade cabinet has long held its place in gaming history. For the longest time they were the premier versions of a game that one could not possess at home. Arcades were usually the first iteration of a game where the home

version was often reduced considerably. Now arcades are a vessel of nostalgia and are scarce compared to their heyday. Nostalgia itself is a very powerful design tool. I spent most of my time designing the side of the cabinet art. My goal was to get the illustration resolved and then to organize the rest of

the elements to work with it. Here are early demo mock ups so I could figure out the overall color scheme. My goals were to call back to classic arcade design, but maintain my style throughout. I also wanted to guide the eye to the screen while not have the physical and digital elements compete visually.





The goals of this experience

Now that we have reached the end of this project, I feel it is a good time to reflect on what I got out of it and what comes next. Ultimately this project was a means for me to learn how to produce interactive digital content in the form of a game. In addition, I wanted to have a better understanding of design application in cross disciplines for software development. Lastly, I wanted to use this as a means to bring together all my lessons from computer science and graphic design to be better prepared to face the world when I graduate.

Did we get what we came for?

This was certainly a learning experience and very much a challenge. The semester has been nonstop. I wake up, figure out how to do something, make some content, go to bed (sometimes) and repeat every day. From this work, I did learn quite a bit. This project was done in unison with the Human Computer Interface course and it was a supplement of information I needed to know. The real question is did a minor in computer science prepare me? The answer is, kind of. I still had to do a lot of research and self teaching. Where I studied a few programming languages, I still had to learn the syntax to others to do what I wanted. There is no way I was prepared to just walk out and make the things I wanted. I think what I did get from computer science was the underlying understanding of how things work as well as the concepts with how to problem solve and find the solutions needed. I think completing this project allowed me to take that basic knowledge and better expand it into application. One of the most important things I got overall from all my experiences here, is the discipline to finish a project and find my solutions to bring them to fruition.

Now what?

Of course, the biggest thought entrenched with the darkness of the abyss, is now that I am graduating, whats next? Of course the first thing on my list after I take a nice long nap is to keep learning. There are other technologies I need to learn and to keep making things. While I had a grand vision for what I was making here, I had to ultimately accept that for the time frame and my skill level, it needed to be smaller. Now that I have taken this step, I can make the next move to a bigger iteration of my concepts. Each time, I will learn more and expand what my programs are capable of doing. The end goal is to make interactions that enhance people's lives and help expand their views of the world. If you want to follow along and see where this journey goes, you can follow the social media links below.



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