

ハンザキ

Hanzaki

Game Design Document

- Game Info Document
- Functional Design Document
- Graphical Design Document
- Sound Design Document
- Technical Design Document

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Game Info Document

Introduction

In the past, a Japanese village was attacked by a group of very dangerous creatures from the rivers. The boy who overslept went to school but it was completely destroyed. Since you're one of the top ninja of the school, you, boy, decides to find out who did this.

There will be three levels. The intro level in which you explore the damaged school. The fields and forest in which you solve puzzles and remain stealth. The final level that ends in the shrine in which you have to overcome greater obstacles like stronger enemies and harder platforming.

There will be multiple upgrades made available throughout the game that help you with platforming and fighting. (Katana, Shuriken, Grappling Hook) The enemies will be different sizes and types of Kappa.

Level 1

Type: Side-Scrolling

Location: Classroom

Gameplay: Basic fighting and platforming

Time: Sunset with sun flares.

Level 2

Type: Top-Down

Location: Forests, Rice fields

Gameplay: Puzzling and Stealth

Time: After sunset

Level3

Type: Side-Scrolling

Location: Forest, Shrine

Gameplay: Advance fighting and platforming

Time: Night with stars and a moon in the sky

Basic Information / TLDR

Here is some basic information about the game.

Story / Narrative

- Intro Cutscene
- Monologues by protagonist. Dialogue with Old Man

Target Audience

- Indie fans.
- Japanese Culture / Mythology fans.
- Ages 12 and up.

Target Platform

- Windows/Mac/Linux

Art Style

- Hand-painted, Cell shaded.

Camera

- Fixed but smooth camera

Character

- Protagonist (Boy, ninja)
- Old Man

Enemies/Obstacles

- Various platforms
- Kappa in different sizes.
- Inaccessible areas without upgrades.
- Puzzles

Abilities

- Slash w/ Katana
- Weak ranged attack w/ Shuriken
- Trap w/ (poison)smokescreen-bombs
- Grappling hook
- Dash

Game Progression

- The main character learns where the attack came from. You look for survivors.
- You Solve puzzles to progress
- You fight enemies to progress
- You overcome obstacles with abilities you have to learn

Pick-ups / Upgrades

- Health
- MaxHealth bonus
- Abilities

HUD elements

- Health status (Large hearts)
- Unlocked Abilities
- Monologue for protagonist with letterboxes
- Hints and tutorials
- Enemy HP (Small Heart)
- Location info when entering level.
- Quest log / Information.

Menus

- Options
- Help / Controls
- Main Menu
- Pause Menu

Resource budget

- Low Poly
- 2D backgrounds (Parallelax)

Procedural/Modular assets

- As many modular assets as possible

Narrative

The story will be told from the boy's perspective. The boy will oversleep and arrive at school late. The school is however destroyed. The boy will try to figure out what attacked the school. The player will know as little as the boy.

Thoughts of the boy (He won't usually speak since he is alone) will be displayed in short cut scenes throughout the game. These cut scenes will direct the camera to the object the boy is thinking about. Letterboxes will appear to make the player know they can't move during the cut scene.

The boy will meet an old man in the second level. The old man is mysterious and doesn't say much. But they will still have a dialogue.

In the top right corner of the screen tasks will be displayed. This way the player will always know what to do, or what to look for.

Story

The story is about a young man whose name is unknown. At 16 years old he had the battle of a lifetime.

This story starts one morning in the comfort of his own bed. The boy, a young student, overslept like he does almost every day. Japan is a land in war. Rather than having war with another country Japan was having war with itself. The rich and powerful shogun taking whatever they could. The young man is training to be a ninja. Ninja are trained to do special dangerous and stealthy missions. This is to help benefit whoever they are paid to work for. Risking their lives for a rich guy they will probably never meet. Being a ninja is seen as an honor. But it is expensive to roll into a school like that. Not everybody deserves to be trained by the best and hold the best weapons. His family is poor and he is always late. But he is a special case. His grandfather founded the school.

So finally he wakes up and realizes he is late. He doesn't even bother to rush anymore. Not a worry in his life. He is the best of his class. Some say even better than the teachers. So he walks along the river noticing a gross smell. And the water does not seem as clear as it usually does. But he doesn't think much of it.

He was not prepared for what he was about to see. The school was like a ruin. Blood splatters, Broken windows and walls. It looked horrific. Alarmed he ran

up to the school. Further and further examining. The school was empty. Not even a dead body. Whatever did this was huge. The walls were broken down.

He heard a weird sound. Like someone was searching through all the mess. He took a closer look. He understood why there was not a dead body in the school. He was standing in front of a kappa. A little one. Green and slimy with no shield. Trying to look all sad and cute. Kappa's are river monsters. They eat children. seems like the kappa that did this to the school is long gone and leaves the rest for the babies to clean up. Without hesitation he hit the kappa as hard as he could with his practice equipment. It didn't do much but enough for this little guy to bash its head open.

The young man promises he will take vengeance for the loss of his comrades.

He set out on his journey grabbing whatever he could find in the school. He followed the river. If he was going to find kappa it was going to be at the river. As he walked down the river he walked past a small cabin. An old man was standing out at front. Explaining to him what had happened and where he could find the kappa responsible. So once again he set out on his journey. Knowing exactly where to go. He was ready to kill the kappa responsible. He found many kappa along the way. None of them really big. Some with shield some without. All leading to one place. Where the battle of his life would take place.

Target Audience

We are targeting people that enjoy playing indie games. The game will be challenging to the player. There will be a decent amount of violence in the game.

People that like indie games are also often interested in Japanese Culture because of the popular Japanese Media Culture. We aren't directly going to make our game very JRPG-Like, but it will still be interesting for those who like that kind of games.

Since there will be some violence, we'd expect a rating of ages 12 and up. We aren't going to be too brutal with it.

Target Platform

We will release the game for Windows/Mac/Linux.

The game will only require a keyboard to be played, so no mouse.

Resource Budget

Prop Polycount

Since we are working with cell shading, we will try to keep the polycount as low as possible. The game will be a little heavy with sprites for foliage. The characters will have a higher polycount than the environment generally speaking. We will only have a few characters so we want to make them look good.

Texture Resolution

Characters will have a higher resolution.

2k for larger characters and enemies.

1k for smaller enemies.

Environment will have smaller resolutions.

1k for larger props.

512 for smaller props.

Sprites will be as small as possible.

64 for bush sprites.

64 for tree leaves.

Textures for terrain.

512 for textures.

Environment Detail

The levels will be relatively small. We are going to a very neat look with many props in a small area. (Think of classrooms full with props). The player should always know in what kind of room or area he is in. We will add sufficient detail to the areas to make this clear.

Procedural/Modular Assets

All buildings will be built in Unity in a modular way. This is especially important in the first level because we have to build a school and make the interior for every room different.

In the second level we also make the bridges modular. This way we can have different variations of length and add a broken one.

Functional Design Document

Core mechanics

Hanzaki is a sidescroller in level 1 and 3. In level 2 you play in top-down.

Controls:

The game features stealth elements mixed with fast paced combat.

You control one character with the arrow keys and the Shift, Z, X, C and V keys.

These can be changed in the launcher of the game

The arrow keys move your character and Shift makes you run.

Z is a basic slash with a sword.

X throws a shuriken to where the player is facing

C Fires a grappling hook if a target is near

V throws a smoke bomb

Double tapping the arrow keys to initiate a dash. (left/Right for SS)

Up will make the player jump (In SS)

Enemies and stealth:

Enemies consist of 3 types of kappa; babies, adults and a boss.

They will follow the player and attack if the enemy is in sight.

Babies are easier to kill than adults.

The kappa use a line of sight to spot the player, with the exception of the boss which is scripted.

The babies can be struck down, but the adults can only be killed using stealth, so when the kappa hasn't noticed you yet.

When you hit the adults you flinch, allowing them to strike you, so instead you throw a shuriken to the back of their head, instantly killing them if it hits.

When you use a smoke bomb they become confused and you can slip away.

Obstacles and events / Game Progression



Game Progression Flow Chart

Level 1

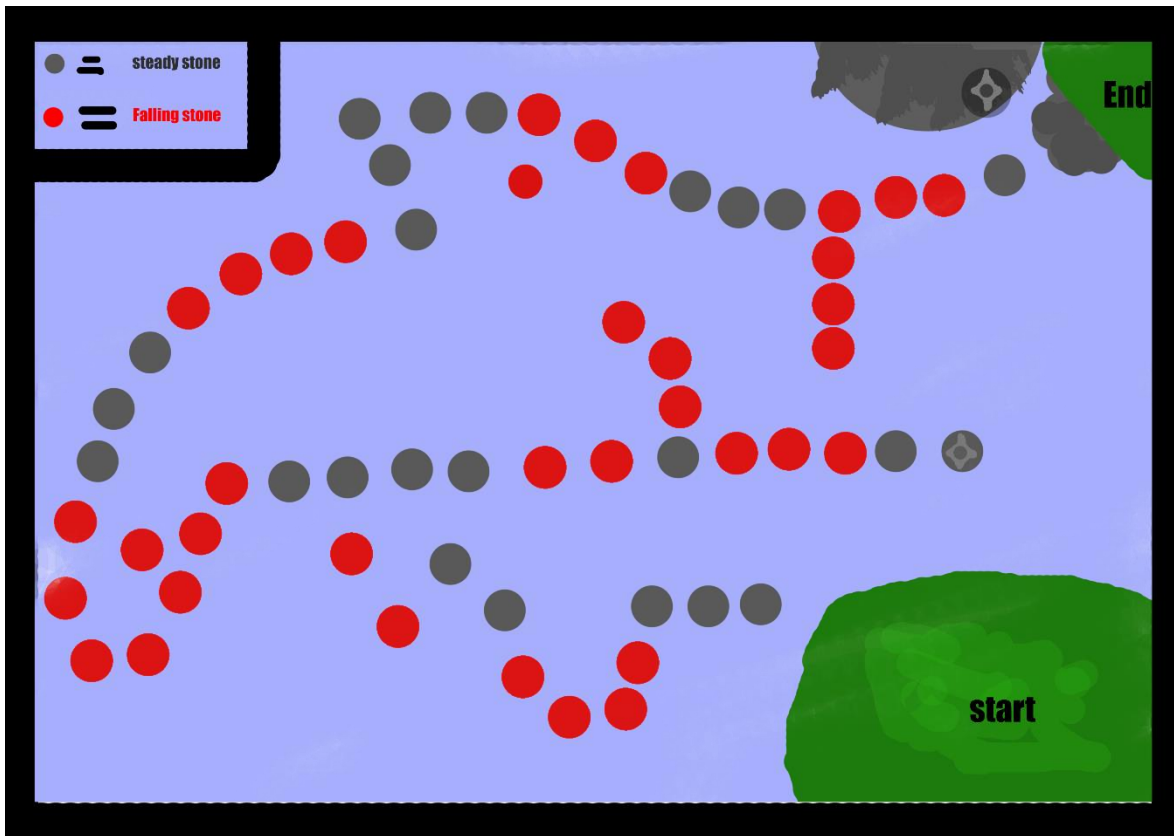
1. In the first level you have to destroy boxes to move to the next level.
2. In order to do so, you have to obtain a katana which is blocked by broken stairs.
3. You have to find 2 parts of a grappling hook, fighting 2 kappa.
4. Use the hook to go to the dojo upstairs, fight another kappa and gain the katana.
5. Destroy the boxes and move on.
6. Optionally, there is a roof part you can destroy with the grappling hook, and gain a heart on the roof.

Level 2

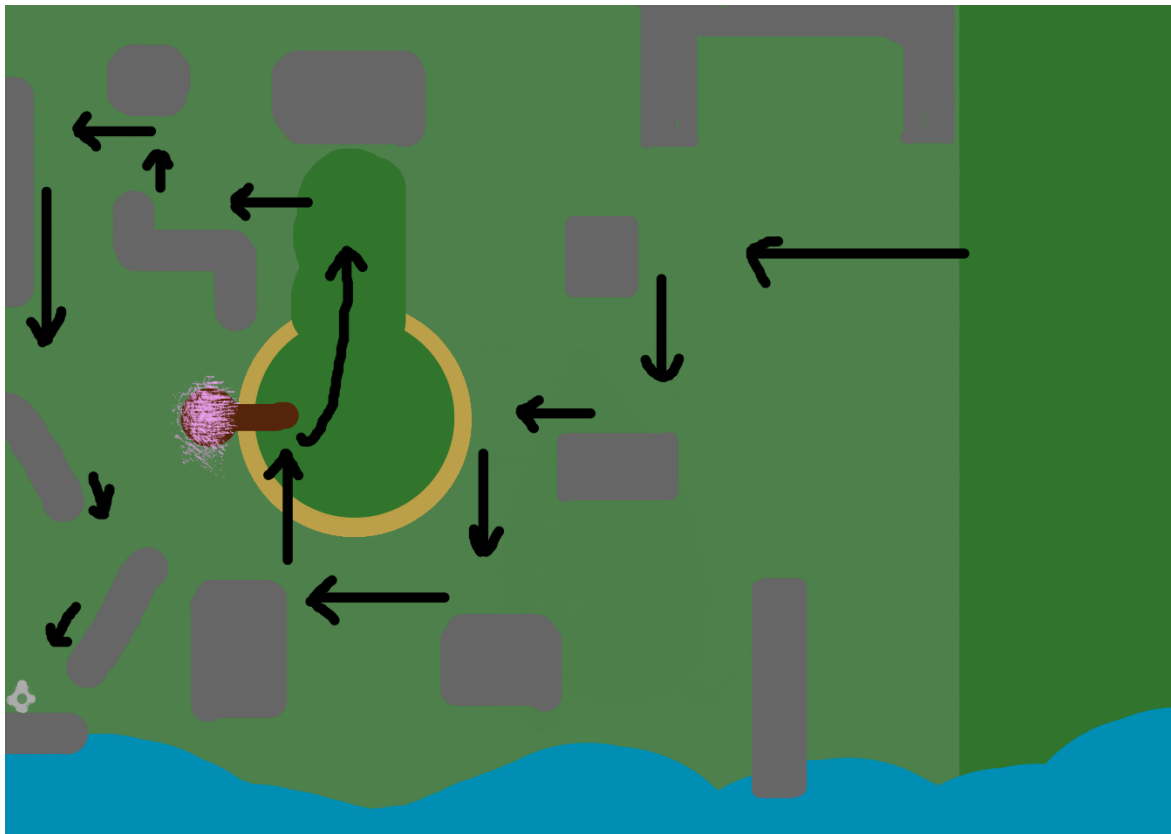
1. Level 2 starts out by talking to an old hermit, he tells you that the kappa went down the river.
2. An adult kappa is blocking the way, so you have to gain a shuriken which you find by grappling over a broken bridge and solving a puzzle.
3. You can optionally kill all of the kappa in the hermit's backyard, gaining a heart from him.
4. Upon killing the kappa blocking the way, you sneak around more kappa.
5. Then you have to solve a stepping stones puzzle and destroy a boulder with your shuriken.
6. After which you have to sprint to the end of the level.

Level 3

1. Starting level 3, you find a smoke bomb to conceal yourself.
2. Then using everything you've learned you evade the kappa and jump down a hole.
3. Upon entering, you find Boss kappa sleeping in the opposite corner.
4. In the boss fight, the goal is to get the boss to head-butt a boulder by attacking him, jumping on him and hitting him, you up his aggro meter. When the aggro meter is full, he charges into you, but he only hits the boulder when you throw a smoke-bomb, confusing the boss. Upon hitting the boulder, you can finish the boss, and then an end cut scene plays.



Platforming puzzle in level 2



Sliding puzzle level 2

Abilities

Basic attacks hit an enemy and breaks objects, the default key is Z.

The grappling hook lets you climb surfaces high surfaces, the default key is X.

The shuriken lets you hit enemies and break objects out of reach for sword, the default key is C.

The smoke bomb makes you invisible for a while and confuses enemies, the default key is V.

Pickups:

You can pick up health, healing you for a portion.

You can pick up hearts, which give you a maximum health boost.

You can pick up shuriken.

You have to pick up two parts of the grappling hook.

You pick up the blade.

UI:

The UI features a health bar, showing your health in hearts.

It also shows the abilities you have unlocked.

When cut scene plays, a letterbox pops in, and a visual novel style conversation proceeds.

The player will always know what to do. In the upper right corner of the game is information about quests and tasks.

The enemies will have small hearts above them when they are attacked. The sprite will have damaged versions so the player knows when the enemy is dying.

Buttons can be controlled by the keyboard.

You can view a mockup of the UI in the Graphical Design Document.

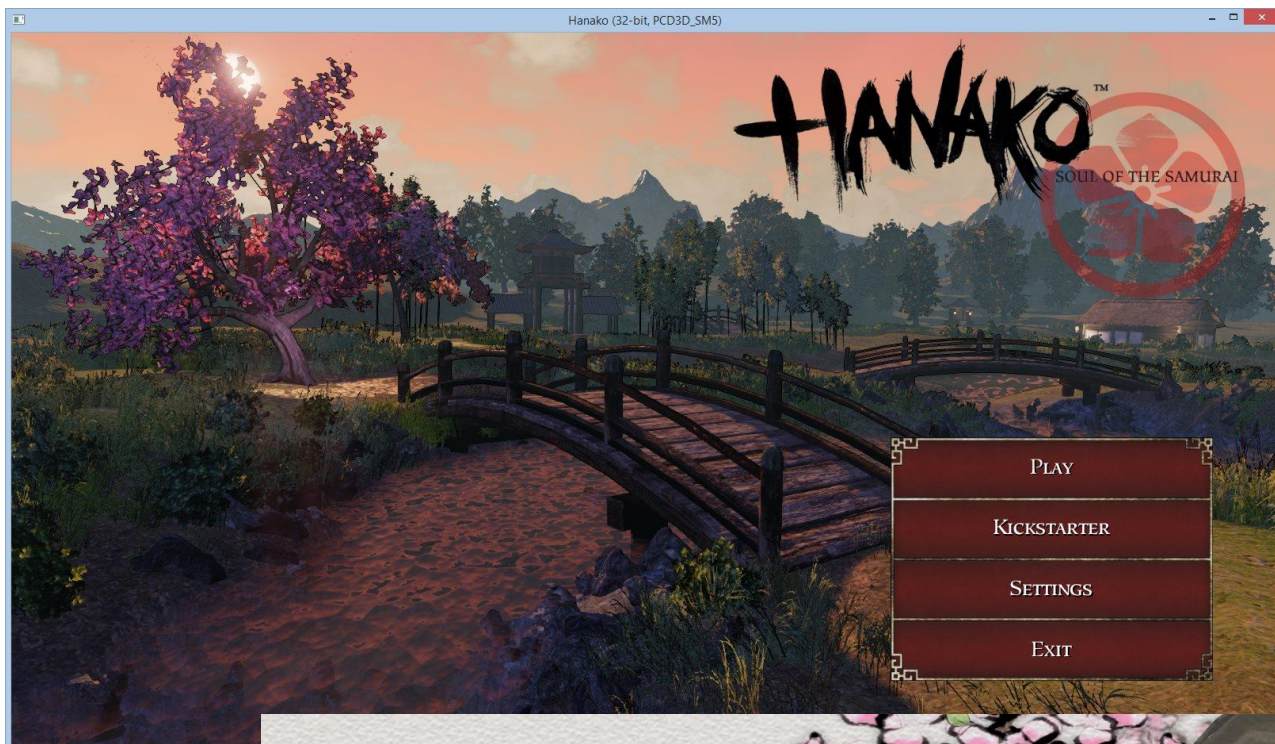
Graphical Design Document

Art style

Cell Shaded

We chose the art style cell shaded cause we think it would be suitable in our game. The game takes place in Japan. It takes place in a time where guns were not invented yet but were about to be in Europe (so around 1500) The setting is Bringing Ninja and Mythical creatures together. We looked for inspiration in Okami (a PlayStation 2 game). And also in The legend of Zelda to get an idea of how we want to shade everything exactly.

Here are some examples of cell shading from Hanako and Okami we took inspiration of:

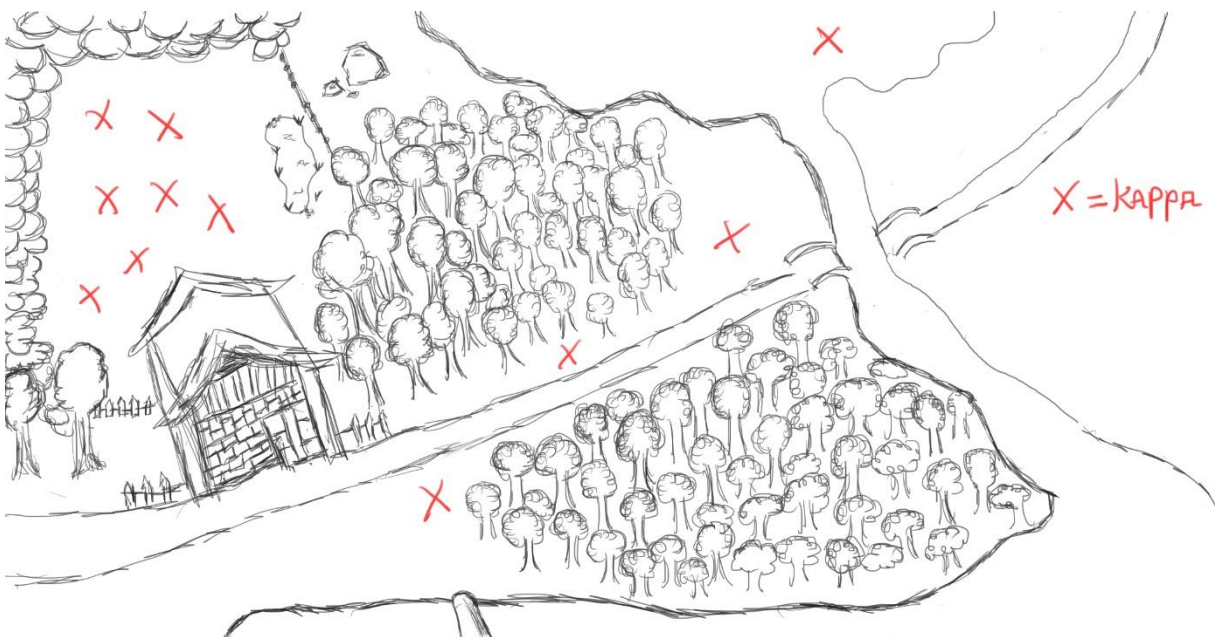
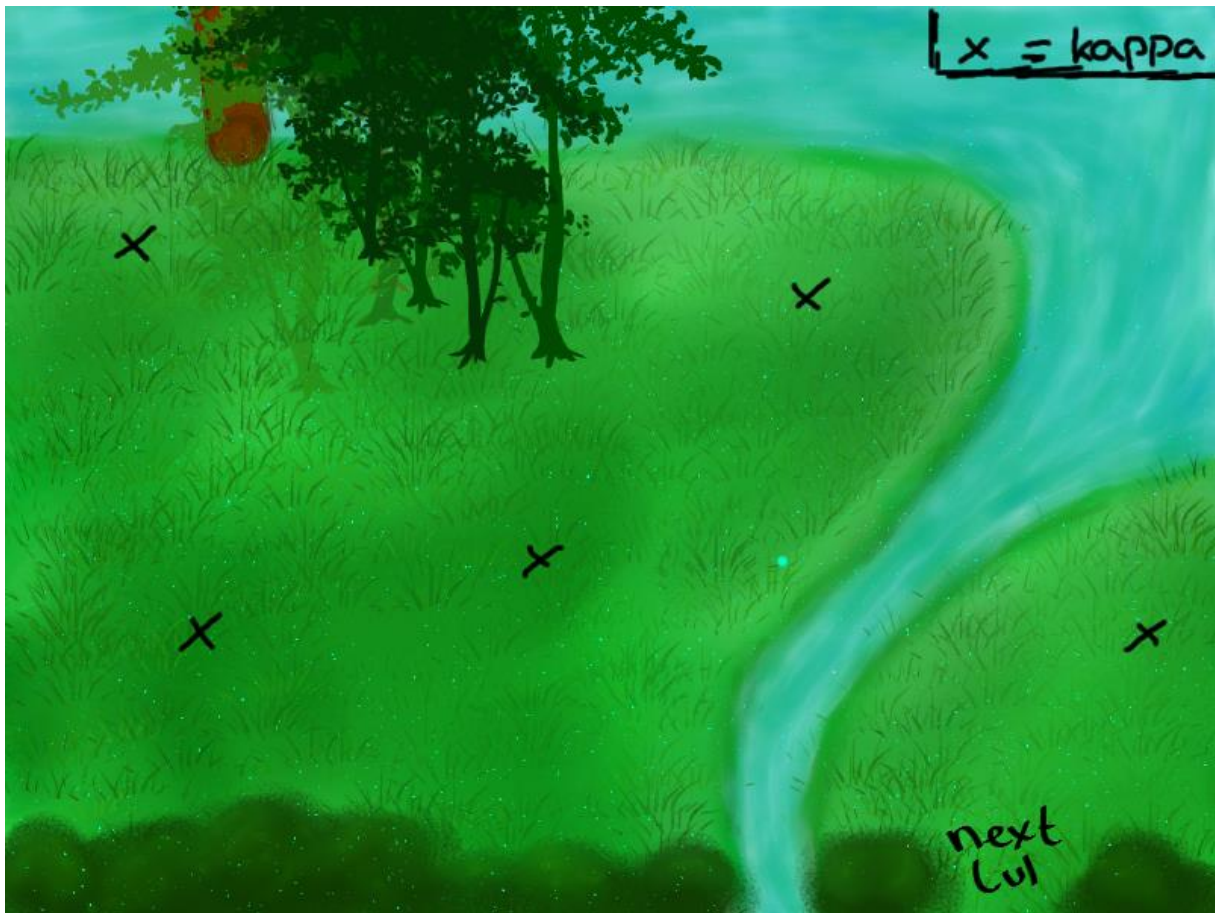


Level Design

Level 1



Level 2



Level3

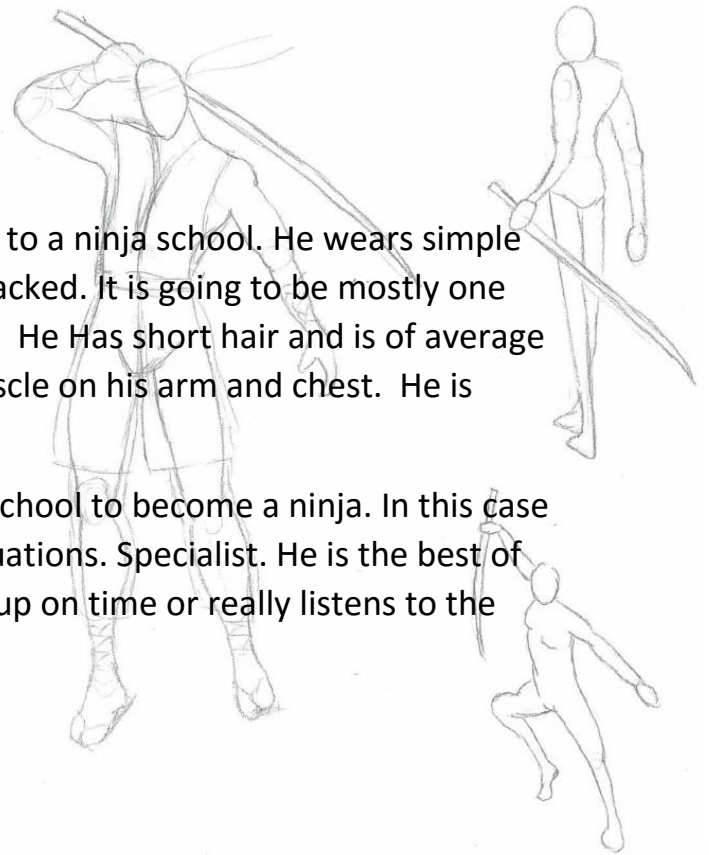
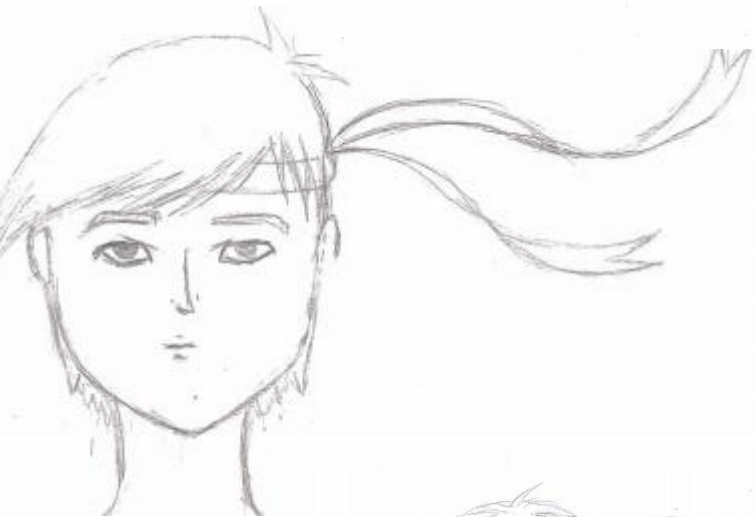


Characters

Main Character

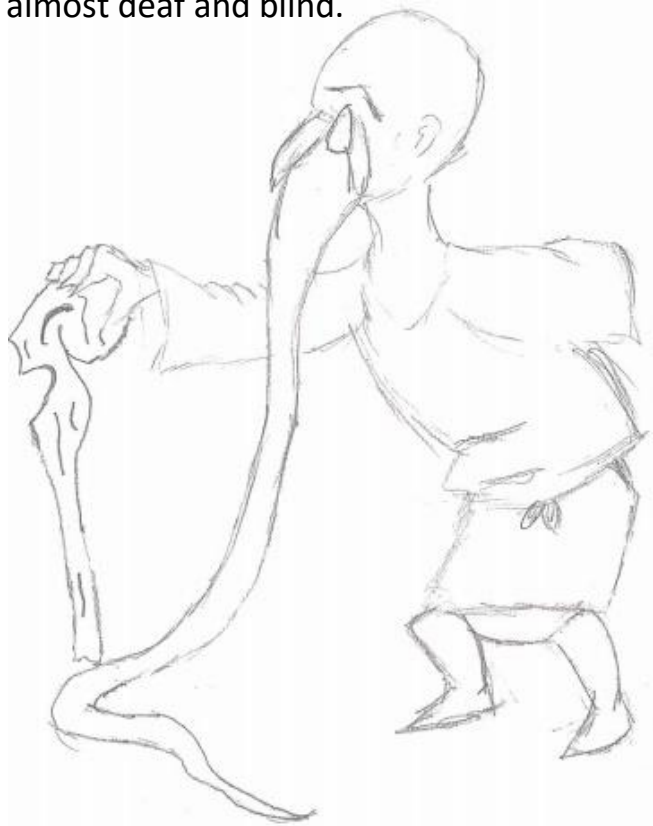
Our main character has no name and goes to a ninja school. He wears simple ninja cloth clothing without any armor attached. It is going to be mostly one color to illustrate a school uniform feeling. He has short hair and is of average height. He does have some noticeable muscle on his arm and chest. He is around 15-17 years old.

He comes from a poor family but goes to school to become a ninja. In this case (see story) a soldier for very important situations. Specialist. He is the best of his class but he is sloppy. He rarely wakes up on time or really listens to the teachers.



Old Man

The old man is the only survivor. He will guide you to the place where the kappa came from. He is almost deaf and blind.



Enemies

Our main Enemy is the Kappa. A river monster that eats children. The kappa is from Japanese folklore. There are many versions like the kappa in different countries. We based our story on the Japanese kappa to fit the setting of the game. In general kappa's are human scaled bodies with the top of their heads open and filled with water. Their mouths look like that of bird and they have claws. They are slimy and green and on most pictures they look like a half balding old man.

We have 3 different levels of kappa's

Enemy Lvl1

Level 1 is the baby kappa. The baby kappa has no hair or a shell. On land he crawls on hands on feed. Similar to Golem from LOTR and The Hobbit. They don't have as much scales as the other levels and are also way slimier. All kappa have an open head with water in them. The baby kappa have a sad look on their eyes.



Enemy Lvl2

The level 2 kappa is the adult kappa. They have a shield on their back and long hair around the opening on their head. They are tall and stand like their back is bend way too much forward. Like that of an old man. The level 2 kappa don't have much muscle u can see but are not bone skinny either. Due to their positioning of their back u can see some bones here and there. They are scaliier and their hair looks slimier than any other part of their body.

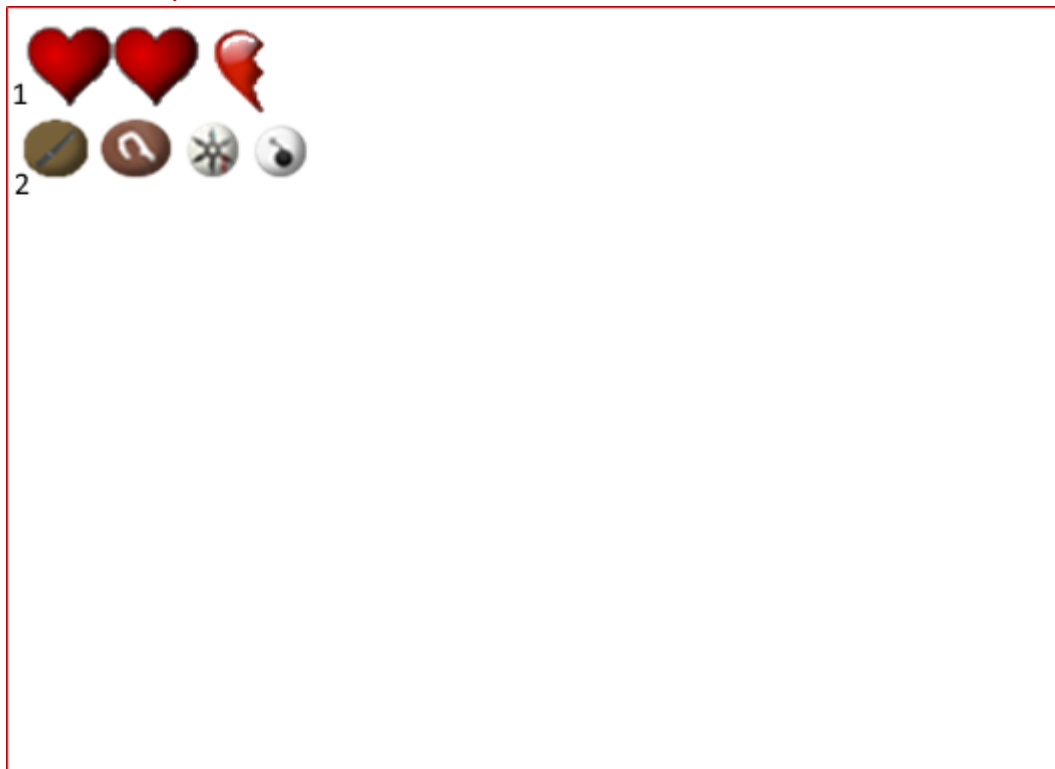


Enemy Lvl3

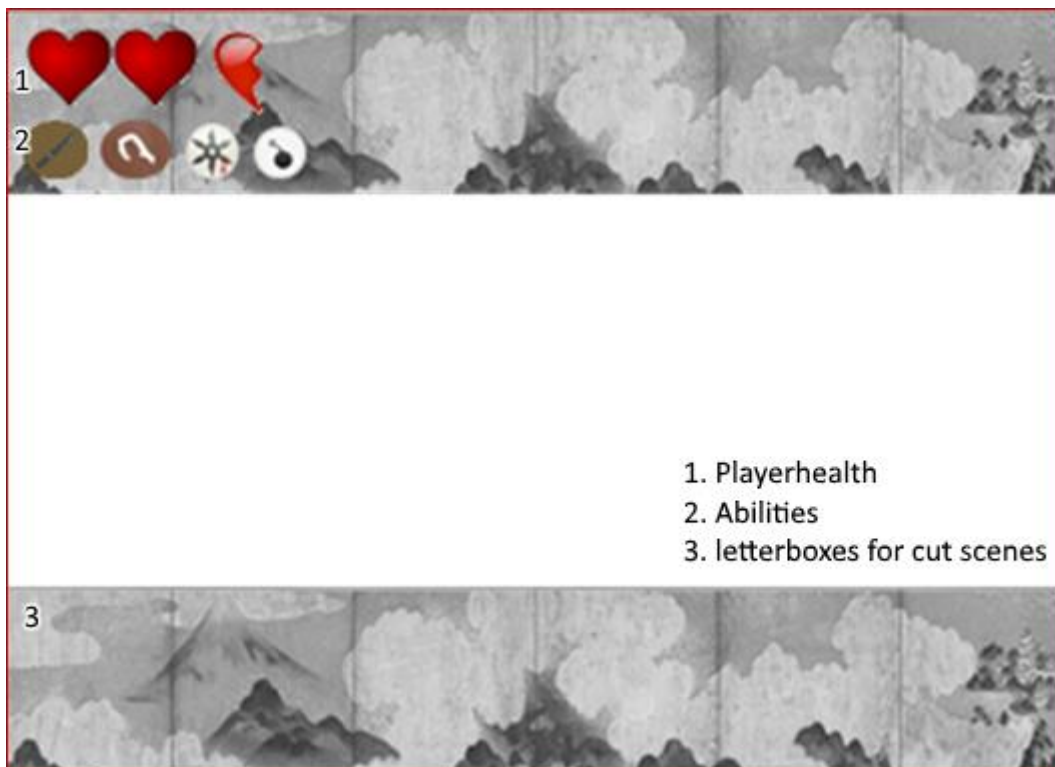
The level 3 kappa is the boss kappa. The daddy of them all. He will appear in the end battle. He has a lot of muscle and has a full big shield on his back. He looks old. His hair is short and he has a lot of scales. He basically looks like a mix between a turtle and a lizard and a bird beak. He is way bigger than the other kappa's and bigger than the main character. For inspiration we looked for pictures of kappa's, ninja turtles and bowser.



UI Concept

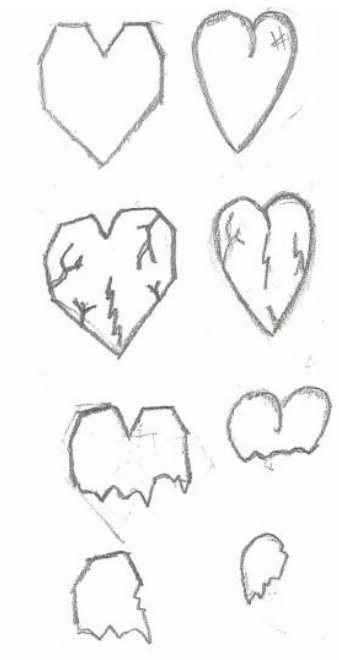


HUD during gameplay

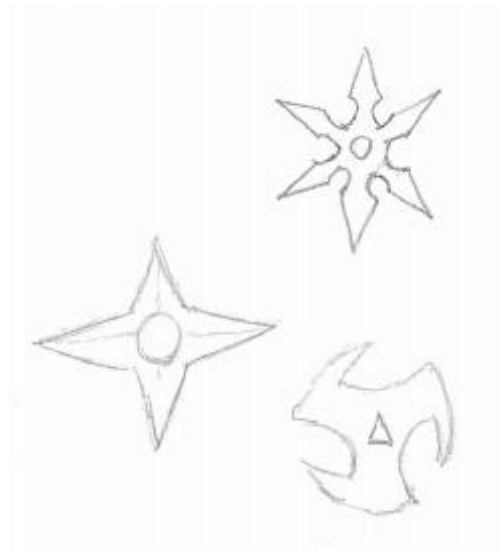


HUD during Cutscenes.

Enemy Health

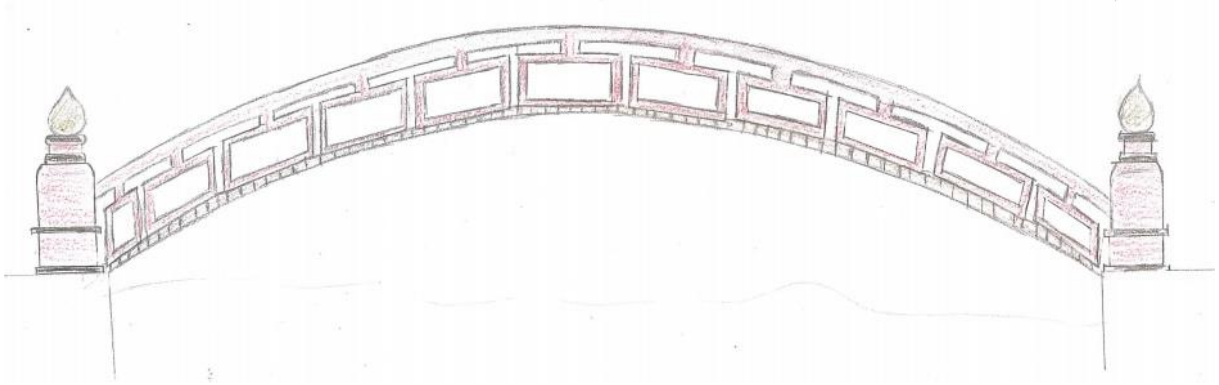


Weapons



Props

Here are a few concepts for props we will be using in the level.



Sound Design Document

Introduction

Since we have two experienced composers and music producers in our team, we will put much effort in creating sound for the game.

All music will be

- Originally composed for the game.
- Composed using the best virtual instruments available.
- Professionally mixed and mastered.

All sound effects will be

- Handmade with virtual instruments.
- Recorded by the team
- Professionally mixed and mastered.

Creating guidelines

Digital Workstation

We will be working in Fruity Loops Studio. This is currently the easiest to use and most familiar to us.

VST / VSTi

We are going to use a variety of different virtual instruments. Within the team will be discussed which to use for what. (Percussion / strings / piano etc.) to get consistently sounding tracks by multiple artists.

Mastering

The tracks will be mastered by the music producer. This is to make sure the quality of all tracks are consistent.

BGM Concepts

Cutscene Intro

The cutscene intro will have many sound effects and taiko percussion. Not so much melody but an interesting rhythm.

Main Menu

The main menu will be a progressive piano theme. The song starts very soft but will get louder and more intense. Alongside the piano will be a more traditional Japanese instrument like the shakuhachi, or a stringed instrument.

Level 1

The theme for level 1 will be a little bit nostalgic with sad sounding flutes. There is however a bit of tension too which can be noticed in the percussion. It will include the Japanese school bell theme.

Level 2

A very calm but mystic sound. It is however also a little haunting. There won't be much percussion.

Chase

A very intense and fast short song with much percussion. The player will be chased down.

Boss

The boss will have big percussion like the chase, but it will be more melodic. It is still a fast song with a catchy tune.

Ending

The ending song will be a sad piano theme. Similar to the main theme but without the progressive part.

Pre-boss

Ambient music that is very haunting. Before the boss fight starts.

Credits

The credits will be a more upbeat song.

SFX Concepts

UI sounds will be made using traditional Asian instruments that we have currently available as digital instruments.

Voice will be recorded by the team and then mixed / mastered.

By making it all ourselves we can make the most fitting sounds for the game.

Technical Design Document

Code Structure

C#

All scripts will be coded in Unity Script (C#)

We chose this over Js to make optimal use of Unity Script and to create various classes.

Classes

The script will be planned out completely before they will be added in the game. This will be displayed in a class diagram. The class diagram can be found in this document.

Scripting Format rules

- Brackets on new lines.
- Private Component Variables with _ in front of variable name.
- Correct use of private vs public variables.
- Comments on at least all functions. Comments above the commented function.
- Start a new script with //[Scriptname] by [Scripter] in the first line.
- Correct usage of capital letters in variables / classes. As taught in the lessons.

Script validation

All scripts will be checked by the lead developer.

Example Script

```
// PlayerController by Jordi

using UnityEngine;
using System.Collections;

public class PlayerController : MonoBehaviour
{
    //Components
    Rigidbody _rb;
    public StatsManager stats;

    //Movement
    float speed;
    public float walkSpeed;
    public float runSpeed;
    public float jumpHeight;

    void Start ()
    {
        _rb = GetComponent<Rigidbody>();
    }

    void Update ()
    {
        //Change speed to runspeed if Shift is pressed
        speed = Input.GetKey(KeyCode.LeftShift) ? runSpeed : walkSpeed;

        if (Input.GetButtonDown("Jump"))
        {
            //Check if player is standing on Ground
            if (IsTouching().tag == "Ground")
            {
                Jump();
            }
        }
    }

    //Check what object is beneath the player
    public GameObject IsTouching()
    {
        RaycastHit hit;
        if (Physics.Raycast(transform.position, -transform.up, out hit, 1))
        {
            return hit.collider.gameObject;
        }
        return null;
    }
}
```



Class Diagram

Main Camera

CameraController

The Main Camera will be controlled by the CameraController script. With lerping we will achieve smooth movement for the camera and make restrictions at edges of the level.

(ImageEffects)

There will be various ImageEffect scripts attached to the Main Camera

Player

PlayerController

Basic variables and functions that are used in both the Side-Scrolling and Top-Down sections will be in this script.

PlayerSS

Unique Side-Scrolling variables and functions will be in this script. Inherits from PlayerController.

PlayerTD

Unique Top-Down variables and functions will be in this script. Inherits from PlayerController.

GameManager

The GameManager will have a DontDestroyOnLoad function. This object will be instantiated in the BuildScene and keeps existing throughout the game.

StatsManager

All stats can be accessed from here

OptionSettings

The options will be saved here.

PlayerSpawner

When the player leaves a map, the PlayerSpawner will keep track of where he left so her re-enters on the correct location

QuestManager

We keep track of all quests here and their statuses.

PickUp

PickUpScript

PickUp Objects will have a script. This will function on collision enter with the Player.

PickUpHeartsScript

Special script for the hearts, these will not be added to the inventory.

Enemy

EnemyBehaviour

The enemy AI will be in this script.

Weapons

All weapons will have their script. In each script the weapon can be controlled.

Interactables

InteractScript

InteractScript will function as a link between the object that is interactable and the ActionScript that will be activated. Handled by a Boolean to check if it's currently activated.

Canvas

CutsceneController

The cutscene controller will send text to the UIManager and will control the camera.

UIManager

The UIManager will handle everything that happens on the HUD

PauseManager

This manager will display the Pause and modify the timescale

LocationOnEnter

When the player enters a new level, this script will play the animation that displays the name of that level

Environment

DestructibleScript

Script for assets that can be destroyed. Will trigger a particle effect on hit by sword.

LevelPortal

Placed at the beginning and end of levels to move between them.

SteppingStones

Should sink when the player is on them.

HookScript

This is the object that can be hooked if the player has the grappling hook. This object will light up if the player is close enough.

Other

MainMenuManager

For handling the buttons in the main menu

OptionsManager

The menu where you can change the options.

CreditsManager

Scrolling text and a button to get back to main menu.

QuestClass

Instances of quests with the attributes they have.

LoadController

Shows the loadPanel while the game is loading.

IntroCutscene

Plays a video and loads level1 when the video is finished.

Unity Folder Structure

For every level we will have level-specific assets. These assets will have their folder in the **Art** folder of the project. In those folders are their texture, material, model, etc respectively. There will be subfolders in this folder for Level1, Level2, Level3 and shared.

Scripts will be in the **Scripts** folder.

Sound will be in the **Sound** folder, divided into three formats; BGM, SFX and AMB. These are the background music, the effects and ambience.

Prefabs will be stored in the **Prefabs** folder. These will also be in subfolders similar to the Art folder. So, level1, level2, etc.

All scenes will be stored in the **Scenes** folder. There is also a personal scenes folder for testing. Every member of the team must have their own scene for testing. It is not allowed to modify another members' scene.

Sprites will have their own place in the **Sprites** folder.

Here is the complete list.

- Art
 - Level1
 - Level2
 - Level3
 - Shared
- Prefabs
 - Level1
 - Level2
 - Level3
 - Shared
- Scenes
 - Personal Scenes
- Scripts
- Sound
 - AMB
 - BGM
 - SFX
- Sprites

Camera

The Main Camera is not going to be directly attached to the player, but linked through script. This way we can add a smooth lerp function for a more dynamic feel. We can also disable moving it when we are at the end of the level. We can also manipulate it to move the camera to interactables. Think of focusing the camera on an NPC when we are interacting with it.

Controls and Abilities

Since we are using the keyboard only for the controls we will modify the input manager in Unity to add keys for Z, X, C, V and Left shift.

Move

We use 3 PlayerController scripts. One general one, one for Side-Scrolling and one for Top-Down. The difference will be in the movement. In the Top-Down section the player should be able to move up by pressing the up-key but in the Side-Scrolling sections the player should jump instead.

Slash

The player attacks with Z. There are 3 attack animations that will be played if the attack is used in succession.

Jump

When the player jumps he can hold the button to jump higher. Similar to Mario.

Shuriken

The player can throw shuriken for a powerful ranged attack. These are consumables that can run out.

Grappling Hook Ability

For the grappling hook we are going to use a targeting system. If the character is close enough to a hook he can grab into the key will be enabled and the character can hook to that.

Interact

If there's a interactable object close to the player then the Z key can be used to interact. This will trigger the camera script to focus on the interacted object.

Dash

By doubletapping a left or right arrow key fast we can use a dash to evade attacks. During this dash the player is invulnerable.

SmokeBomb

The player can activate a smoke bomb if he has collected one. This will instantiate the smokebomb prefab that misdirects the aggro'd enemies.

Enemies / Obstacles and Game Progression

There will be 3 kinds of enemies in the game which all have their own behavior and script. This is because they all have too many different attributes. In this case it is not really a profit to use a general EnemyClass script. We will have a QuestClass. Quests need to be completed to be able to advance to new levels. The quests will be stored in a database on the GameManager. This script won't be destroyed on load so we can keep track of all quests' statuses throughout the game.

UI

The UIManager script will display the stats from the StatsManager on the screen. It is important to us that the player always has enough information about what to do. We will display quests in the top right corner. During cutscenes textboxes will appear. We will provide feedback for every action in the game by UI Graphics and Sound effects.

The Pause will be handled in another script that will freeze the time. Stop the background music. Make options to quit or go to the main menu and continue.

There will be different scripts for the credits menu, main menu and options menu.

On level enter the name of the level will be displayed at the top right of the screen.