WATER COOLER FISH

ROLLER FRENZY

GAME DESIGN DOCUMENT

Written by Water Cooler Fish
Version # 1.3

Wednesday, December 4, 2024

Table of Contents

Design history

Brief explanation of the history of this document.

Version 1.0

- ★ Initial design document
- ★ No storyboard
- ★ Schematic and noun / verb chart

Version 1.1

- ★ More developed storyboard
- ★ Added concept art and some final designs

Version 1.2

- ★ New document layout
- ★ Added concept art for characters and environment
- ★ Added finished characters and environment models

Version 1.3

- ★ Reworked schematic
- ★ Reworked storyboard
- ★ Reworked noun / verb chart
- ★ Added information to each previous placeholder
- ★ Fleshed out the features list

Game overview

Roller Frenzy is a fast-paced, multiplayer roller skating game focused on dynamic movement, and competitive zone control. Players embody unique characters racing to capture points across a cyberpunk city. Featuring high-energy mechanics such as combat tricking, momentum-based movement, and motion-captured animations, Roller Frenzy aims to create an immersive, adrenaline-filled gameplay experience that brings out players' competitive and cooperative sides.

Project specifications

★ Platform: PC with controller and MOCOPI support

★ Number of players: 2-6

★ One unique maps

★ Five unique zones

★ Five characters

   ○ Character selection

★ Cyberpunk, dystopian theme

   ○ Involving detailed environment models

   ○ Colorful palette consisting of pinks, blues, and greens

★ Unique and fast-paced skating mechanic

   ○ Using "A" and "D" on keyboard to signify leg and feet movement of roller skating

   ○ Controller use joysticks and double trigger input

★ King of the hill style capture point

   ○ Including unique trick / combat system

   ○ Activate and deactivate zone system

   ○ Time tracking for each player

   ○ Speed changes based on zone activation

★ Player leaderboard

Schematic

A simple schematic showcasing how the player would move throughout our menus and the game.
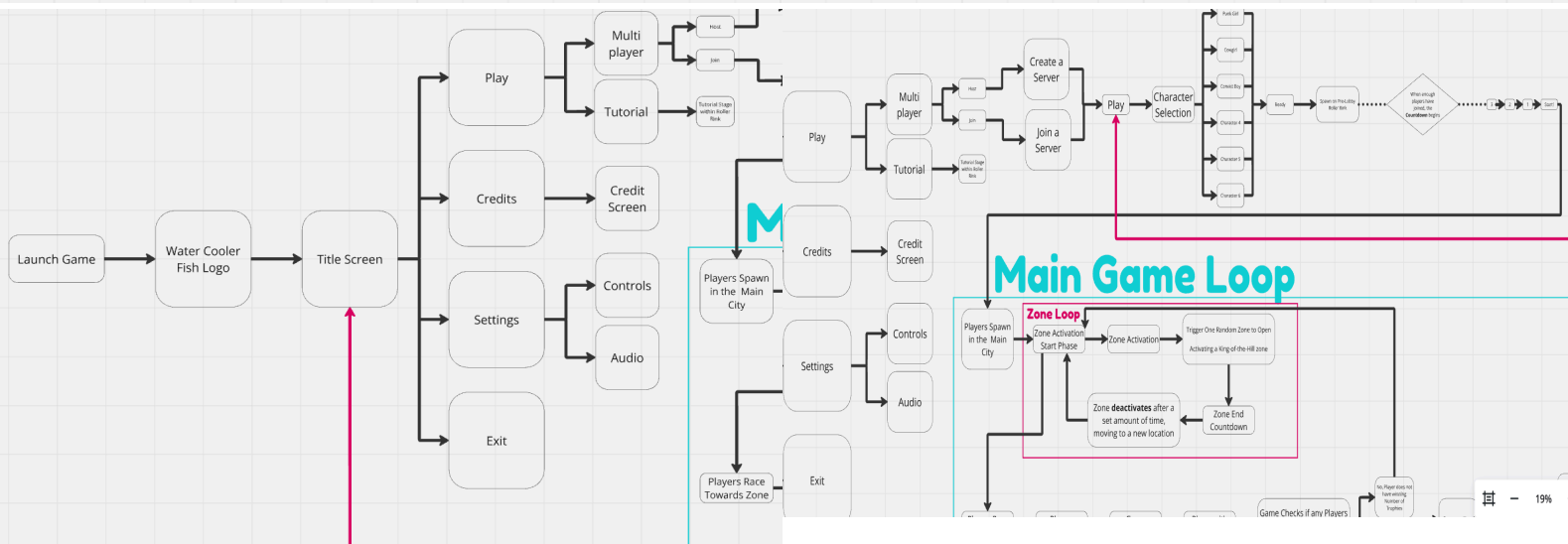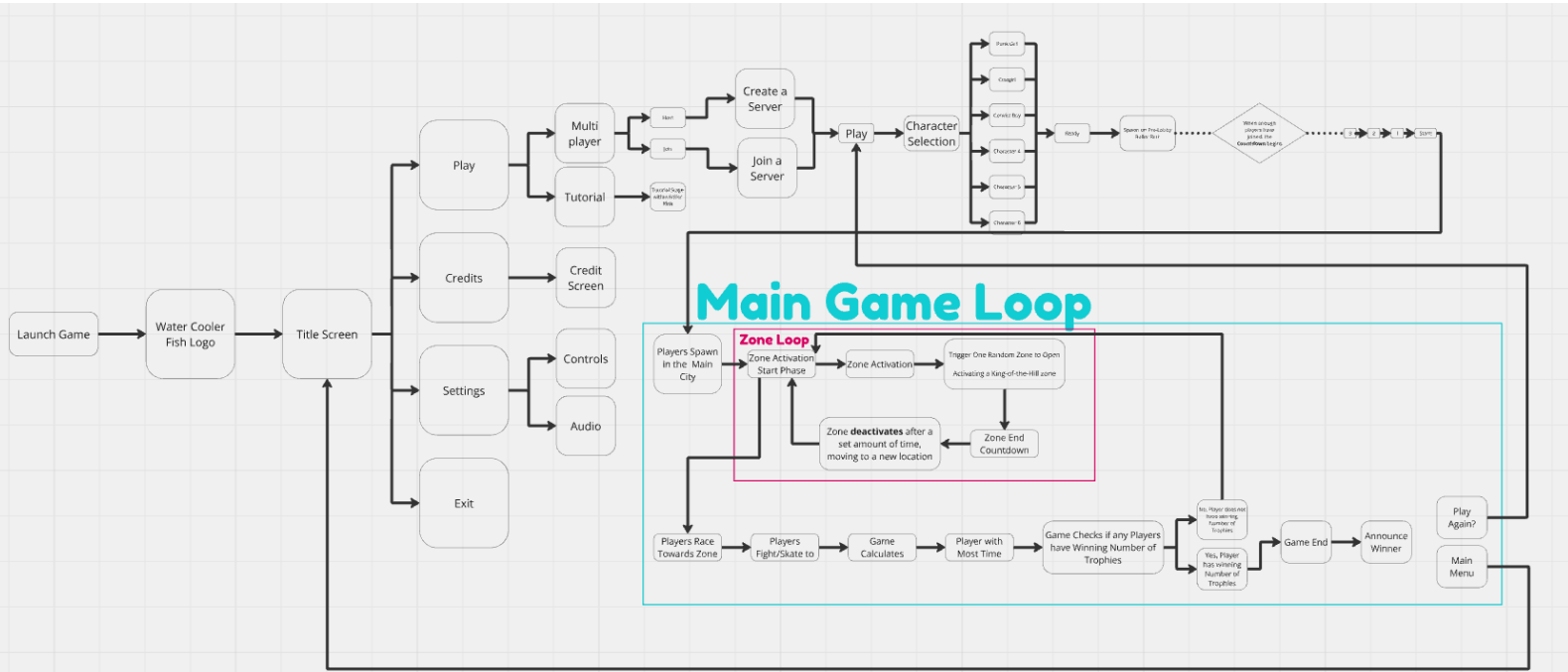
Zoomed in images of schematic

Main Game Loop

Zone Loop

Players Spawn in the Main City → Zone Activation Start Phase → Zone Activation → Trigger One Random Zone to Open

Activating a King-of-the-Hill zone

Zone **deactivates** after a set amount of time, moving to a new location ← Zone End Countdown

Players Race Towards Zone → Players Fight/Skate to → Game Calculates → Player with Most Time → Game Checks if any Players have Winning Number of Trophies

No, Player does not have winning Number of Trophies

Yes, Player has winning Number of Trophies → Game End → Announce Winner

Play Again?

Main Menu

Zoomed in on the main game loop

Storyboard

Storyboard following the motions and what screens the player would see.

Player loads game, start screen
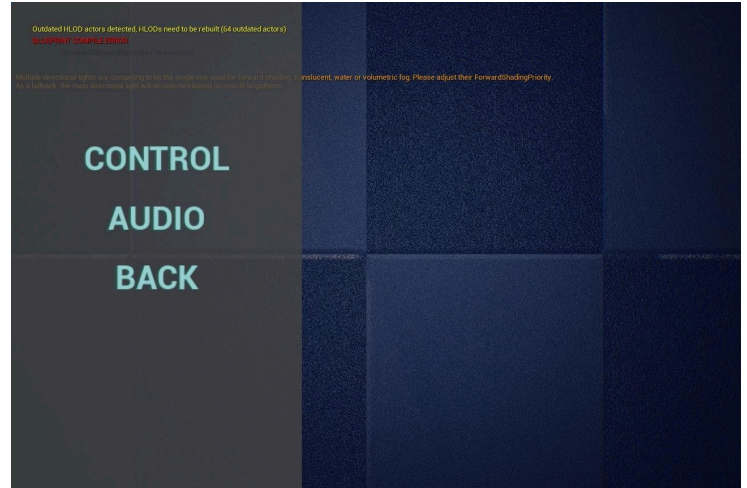
settings menu, able to change controls, audio, etc.
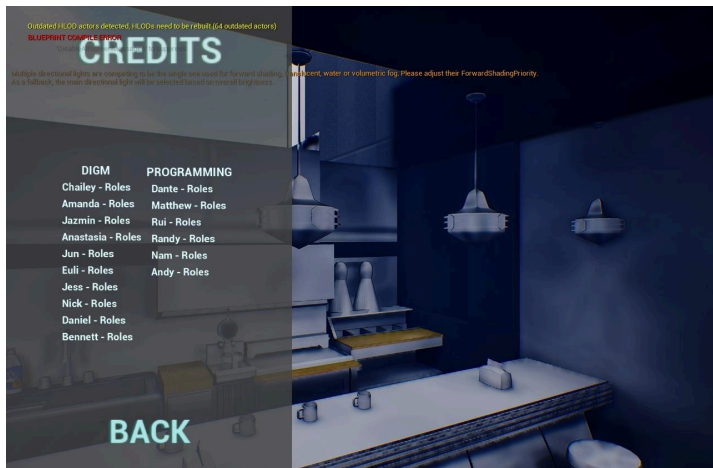
Credit screen
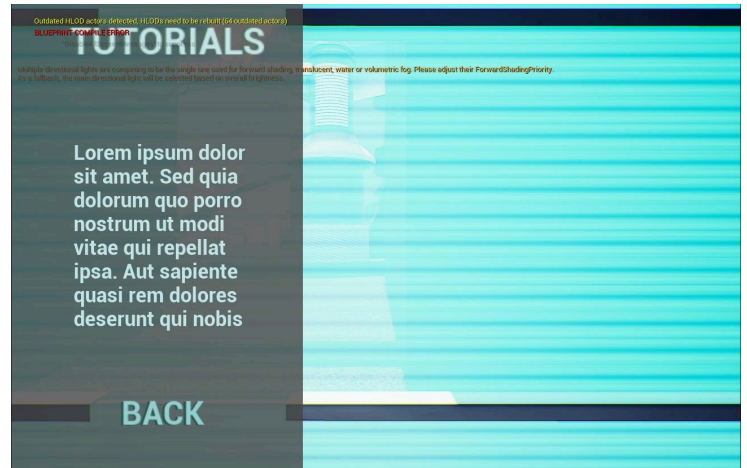
Tutorial for the game
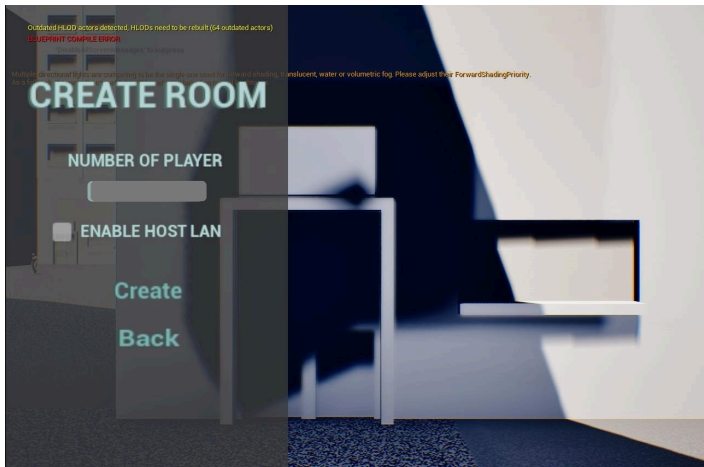
Creating a room

SPAWN ISLAND
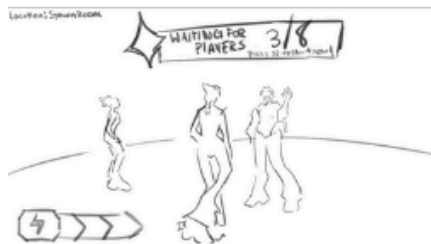
PLAYERS SPAWN INTO A SPAWN
ROOM AT THE START

GAME START

WHEN THE GAME STARTS,
EVERYONE SPAWNS ON THE SUB

ZONE SPAWN

PLAYER RACING TO ZONE
INDICATED AT TOP

PLAYER COMBAT

APPROACHING CURRENT "KING"

LANDING TRICK

WHEN LAYER LANDS A TRICK.
GAIN CHARGE FOR BOOST

GETTING HIT

PLAYER GETS HIT

LOSING COMBAT/GETTING KNOCKED OUT

PLAYER IS BRIEFLY STUNNED
AFTER HIT

ZONE WIN

SCREEN IF PLAYER WINS THE
ZONE

ZONE LOSS

SCREEN IF PLAYER LOSES THE
ZONE

PLAYER LEADERBOARD

GAME WIN

VICTORY FOR PLAYER, SPLASH
OF THEIR CHARACTER

GAME LOSS

VICTORY FOR OTHER PLAYE
SPLASH OF THEIR CHARACTE

Noun / verb diagram

A noun / verb diagram of the player movement and options the player has to make.
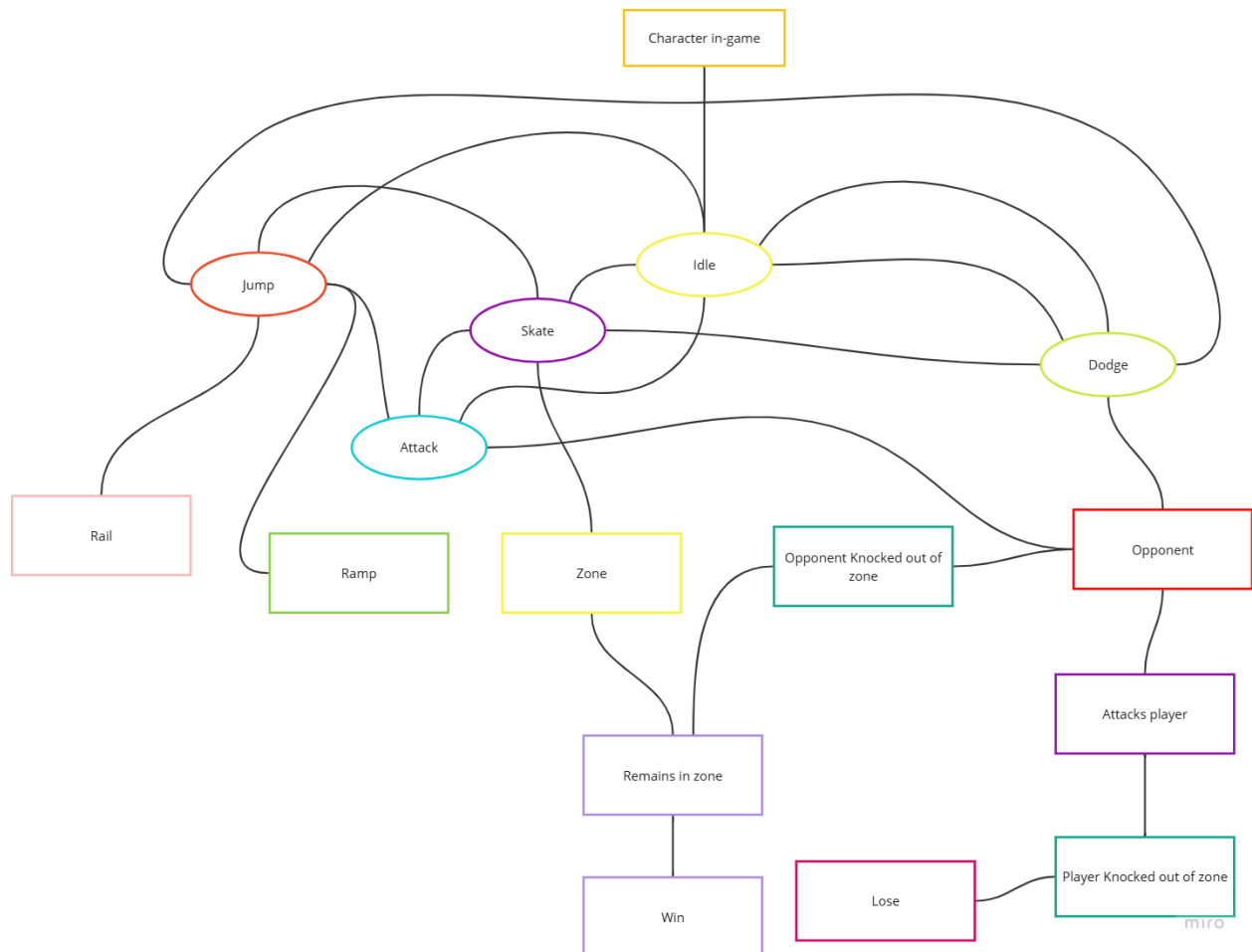
Art Direction [style breakdown]

Cyberpunk, dystopia.

Summary

[Roller Frenzy]'s art style is vibrant and colorful. Leaning into the cyberpunk aesthetics, focusing on palettes that are primarily blues, greens, pinks.

Color Indicating Faction

The city's Upper and Lower Sides should reflect their allegiances through color:

- **Upper Side**: *Sophisticated characters wear white/silver with pastel accents, inspired by Mid-Century Modern elegance.*
- **Lower Side**: *Grungy characters feature dark grey/black with graffiti-like pops of bright color, evoking gritty brutalism.*
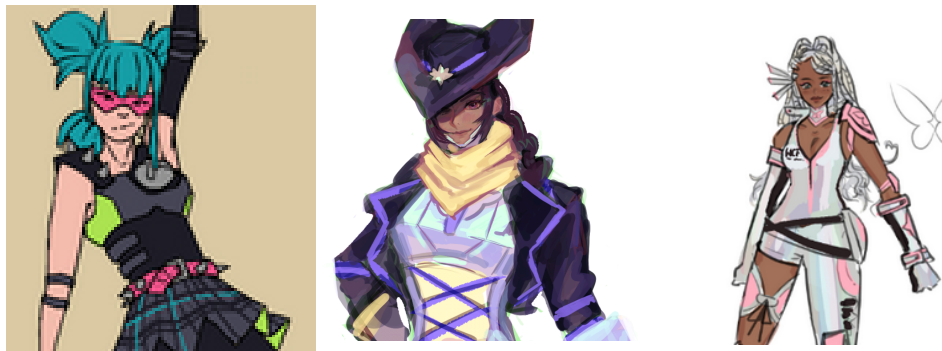
Notice the dark primary contrasted with bright hues on the Punk girl (left). Compare this to [barbie girl](right), her silver dominant outfit with pastel accents. [Ranger] is a marriage of the two color palettes, indicating her lack of allegiance to either faction.

Character Personal Colors

Due to the multiplayer aspect of the game, each playable character should have a unique KEY COLOR assigned to them.

Compare and Contrast of Two Factions

Color palette for Procreate & HEX codes for Canva, Adobe Photoshop, Illustrator, InDesign and more.
By California Girl Designs
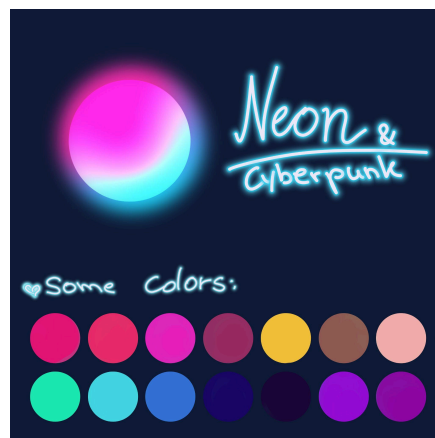
The Upper and Lower city are divided in architectural differences, with the Upper being Mid Century Modern and the Lower City being brutalism. However, due to the rich subculture and creative expression of the Lower City, these brutalist architects should be covered in graffiti to indicate while they are oppressed, the people living here have soul and a desire to break free.

Lower City Color References

From Jet Set Radio:
Color graffiti on grey concrete architecture invokes street art and murals. This allows for the undercity to have color while also being different from the Upper city. The colorful graffiti also serves as a nice homage to Jet Set Radio. The graffiti can be decals, so 3D Modelers don't have to texture the graffiti on each individual asset, saving space while also allowing for more exciting set dressing.

| 151414 | 0E8DFB | CCF5AC | D75B93 | FF4B0A |
| Night | Dodger blue | Tea green | Thulian pink | Aerospace orange |
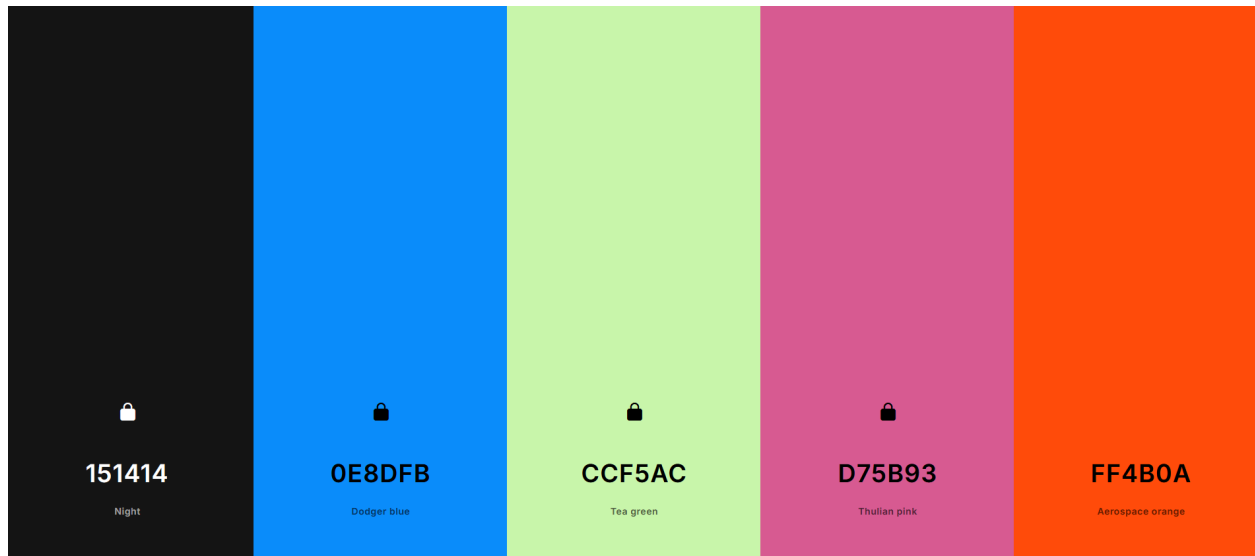
Proposed Color Palette for Lower City Color Accents

| FFAA65 | BDF3F5 | 7863A5 | F8BEBE | FC7474 |
| Sandy brown | Celeste | Royal purple | Tea rose (red) | Light red |
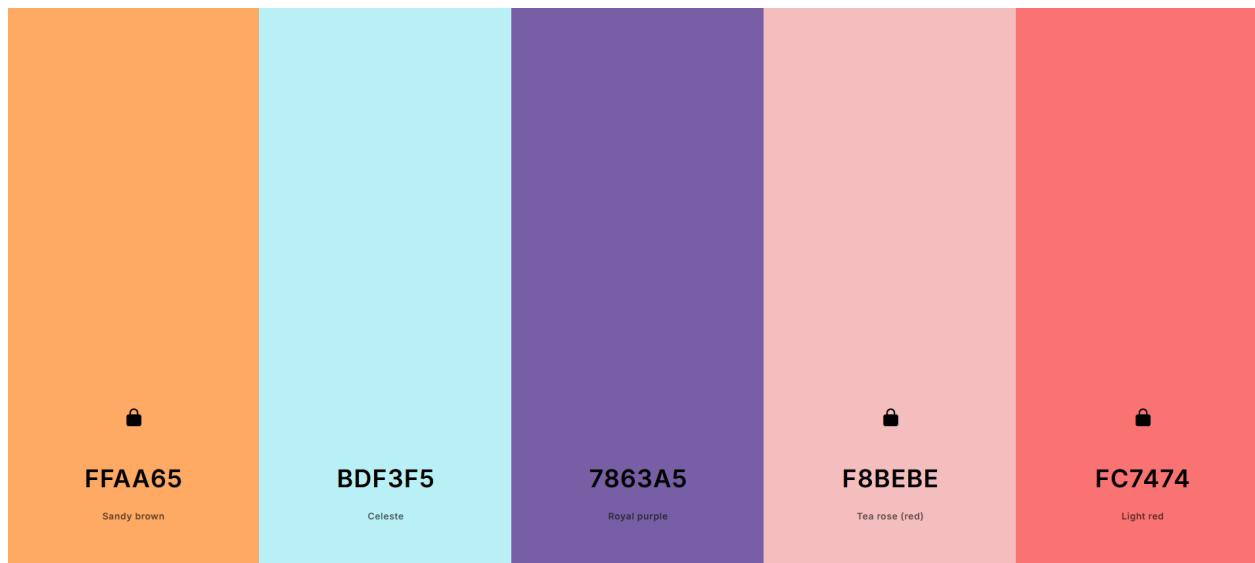
Proposed Color Palette for Upper City Color Accents
Main differences are in saturation and warmth. Upper city has more powdery, warm colors, while the lower city is more saturated and cool-toned.

While the upper city has Green accents from the foliage, perhaps low city can have green accents from the Graffiti?

Color In Environments

In order to create a readable contrast in the environment, a balance of WARM and COOL tones should be used. WARM and COOL colors shouldn't be used in a 50/50 combination unless for transition spaces. Keep it at a 70/30 or 80/20 ratio in terms of lighting.

Mirror's Edge Screenshot

In the above image, notice how the majority of the lighting is an artificial cool green/yellow while areas of interest are highlighted with a warm orange tone.

Mirror's Edge Screenshot

Eyes will naturally gravitate to the orange and red in the image. Your retinas are overstimulated from being exposed to so much stark white and blue, that your vision naturally is drawn to the warm spots.
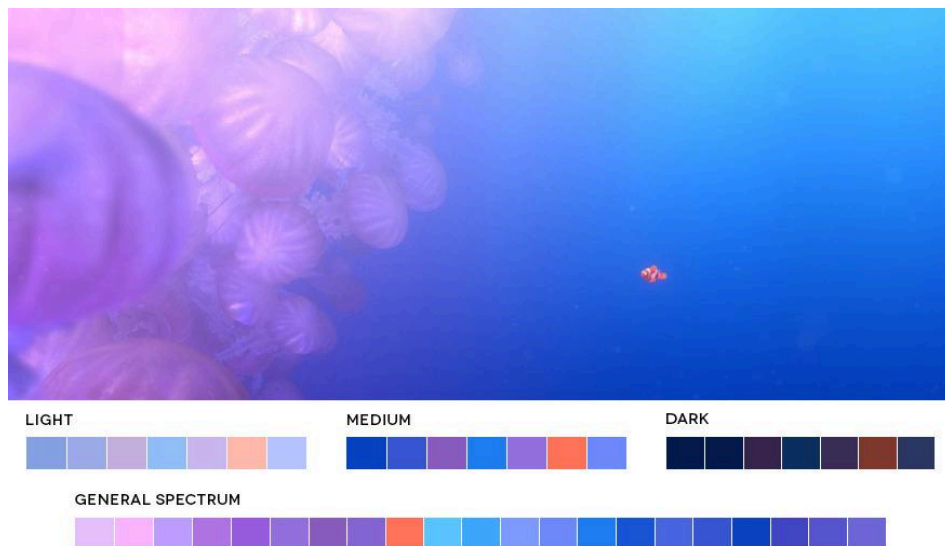
If we put more blue in the sky and make the fog more blue, the pinks and purples of the Upper city could potentially pop more.
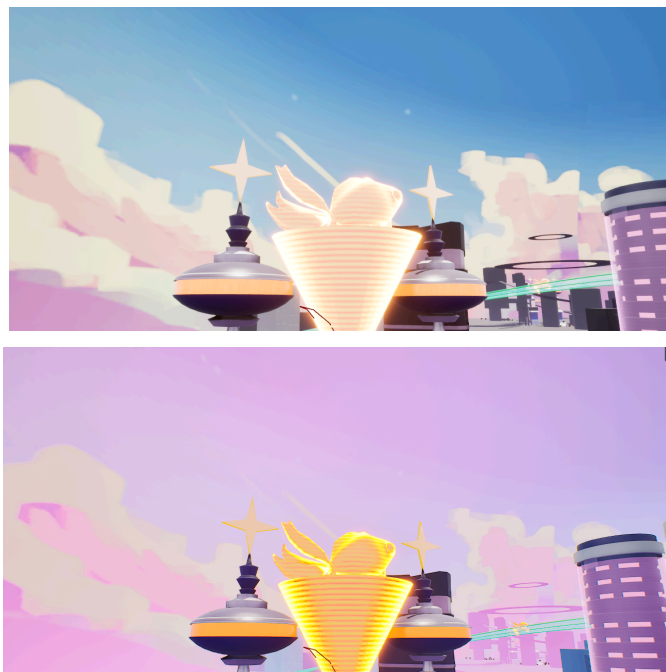
Before vs After Post Processing and Fog Gradient

Which colors are more preferable to play in? What works better?

Color in Gameplay

Color for Traversal

Games such as Neon White and Mirror's Edge uses color to indicate pathing to the player. Due to the high speed and fast camera movements, paths from zone to zone should be supplemented by universal color indication to lead the player.
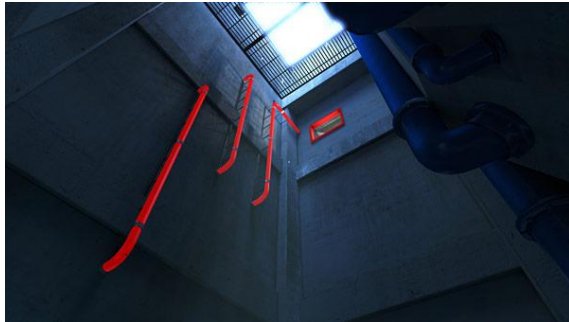
Distance Fog

Using the custom multicolor distance fog has different benefits:
   ★ *Smoothly blends the horizon into the skybox or scene, creating a natural-looking distance*
   ★ *Hides distant objects, reducing the load on rendering systems.*
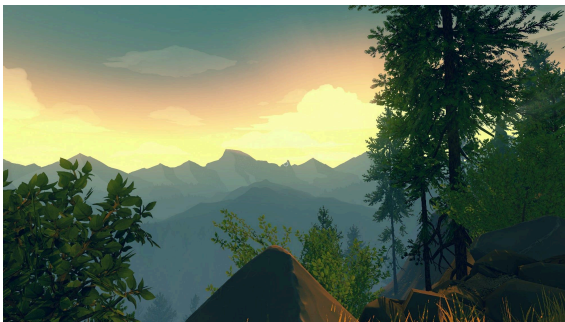
Firewatch

Sable

Resources used:

https://help.steampowered.com/en/faqs/view/0688-7692-4D5A-1935

Visual inspirations

[Roller Frenzy] is pulling from many different inspirations.

Inspiration board

Cyberpunk 2077

Splatoon

Jet Set Radio

Mirror's Edge

World style

Year 3000, after an atomic bomb. The world of [Roller Frenzy] is stuck in a mid-century modern environment. Though, the colors are bright and loud compared to the shape and aesthetic of the buildings.

Example of Environment

Characters

Six unique characters to pick. Cyberpunk, dystopian influenced.

Early concepts

Below are early concepts of the characters we currently have, [Ranger], [punk girl], [barbie girl], and [boy characters].
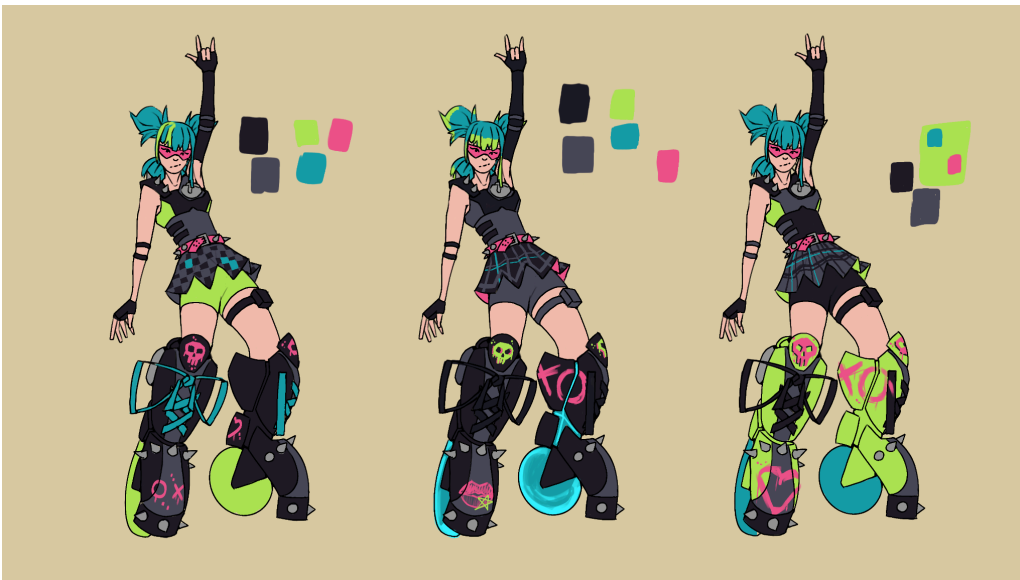
[punk girl] color concepts

[barbie girl] outfit concepts
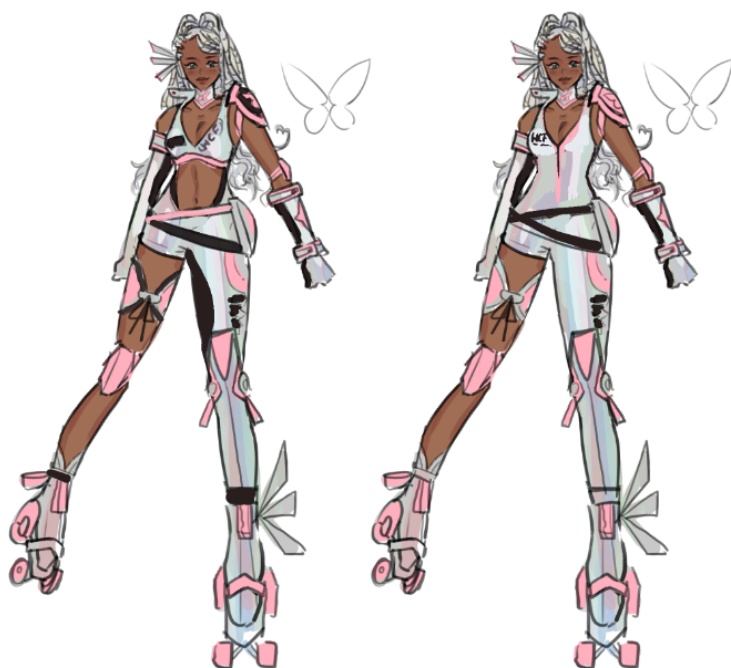
[barbie girl] outfit concepts

[cow girl] final concept

In the initial Game Jame phase, a sketch of 4 girl characters were made with varying aesthetics. The Ranger (far left) received positive feedback at the first Game Jam which resulted in the team going forward with the Cyber Ranger Concept.

Several iterations of Cyber Ranger sketches were made, with the art lead and art team members inputting feedback. The concepting process was iterative and dynamic, with the design changing based on the feedback.

Orthographic view of Ranger (left) for modeling reference, Rough full body art for character exploration (right).
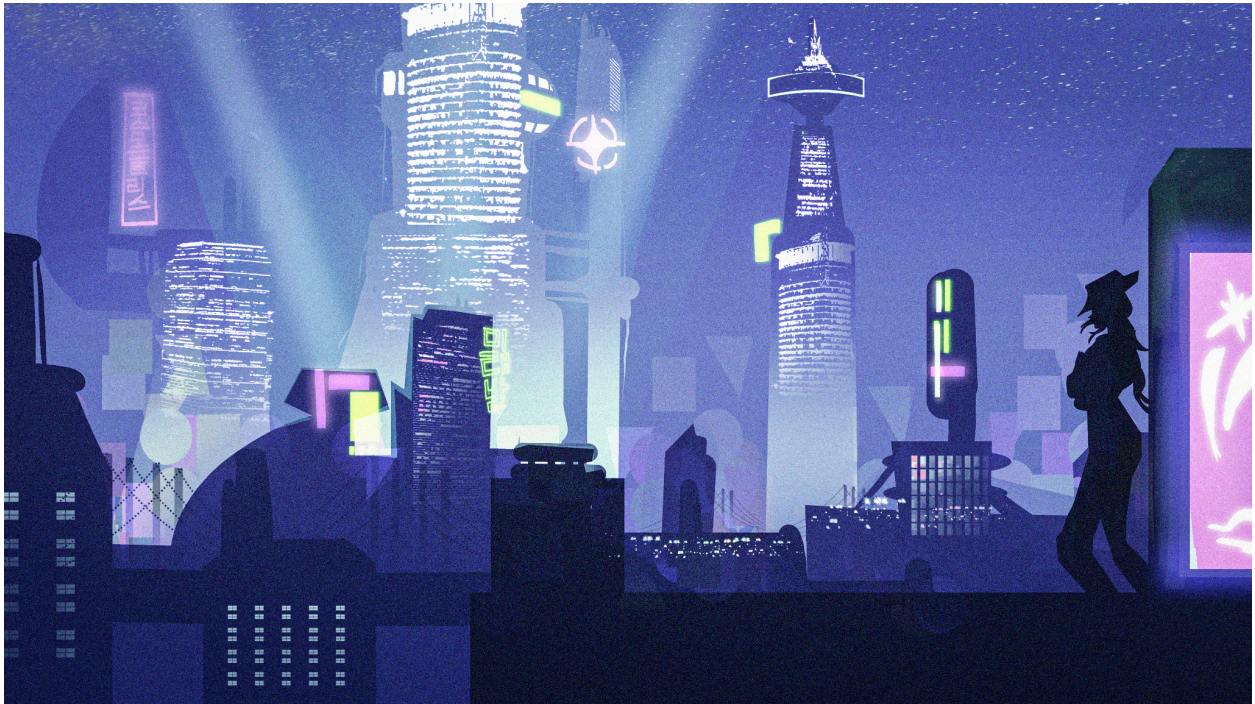
Early character concepts, stylized following color palettes. Full body for modeling reference.

Male character concepts

Suntan

RogueArtist

Corpo Robo

paint
splatters
on pants

Y2K Streetwear
x
Japanese Sci-fi

tshirt
tan ←

C# ZERO

Assigned Muzzle:
Goes for the throats of the competition

Assigned Remote Locking Skates:
Post comepetition retrieval

Assigned Straight Jacket:
Personal request made by C# Zero, "Its my brand"

INMATE

← wrist collar

← carboot
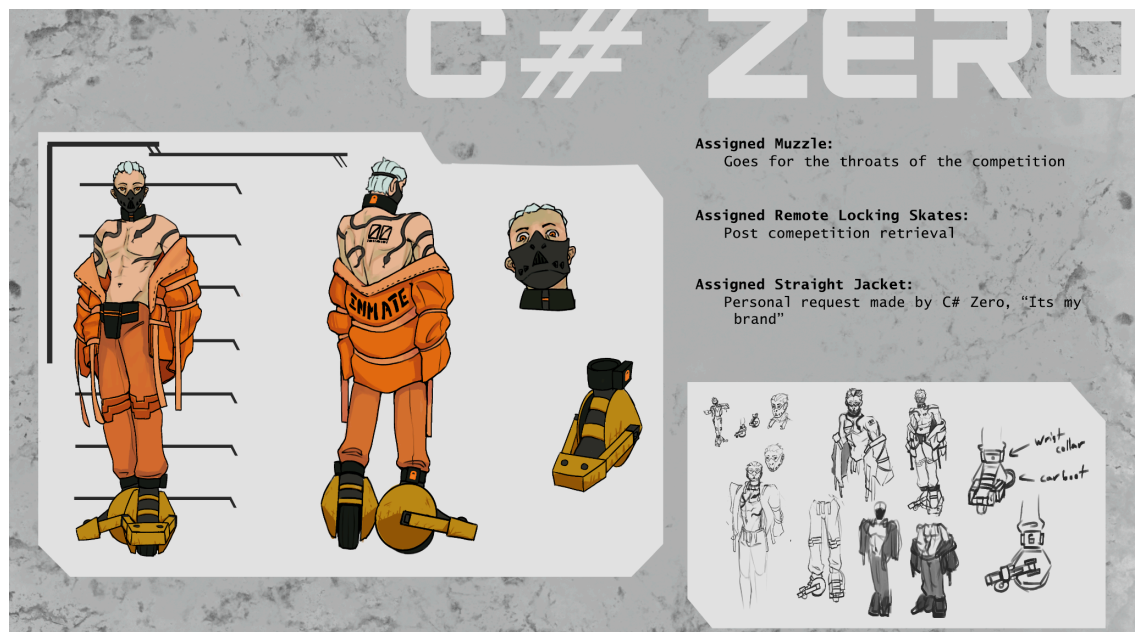
Samurai inspired character. Full ortho for modeling and texturing reference.

Characters

Five unique characters to pick. Cyberpunk, dystopian influenced.

Current models

Below are the current models of the characters [Ranger] and [punk girl].

Current [punk girl] and [cow girl] models and implemented in game

Each model will follow the stylized, hand-painted textures.

Environment

Many unique environmental models. Following the mid-century modern, yet futuristic aesthetic.

Early concepts

Below are early concepts of the environment models.
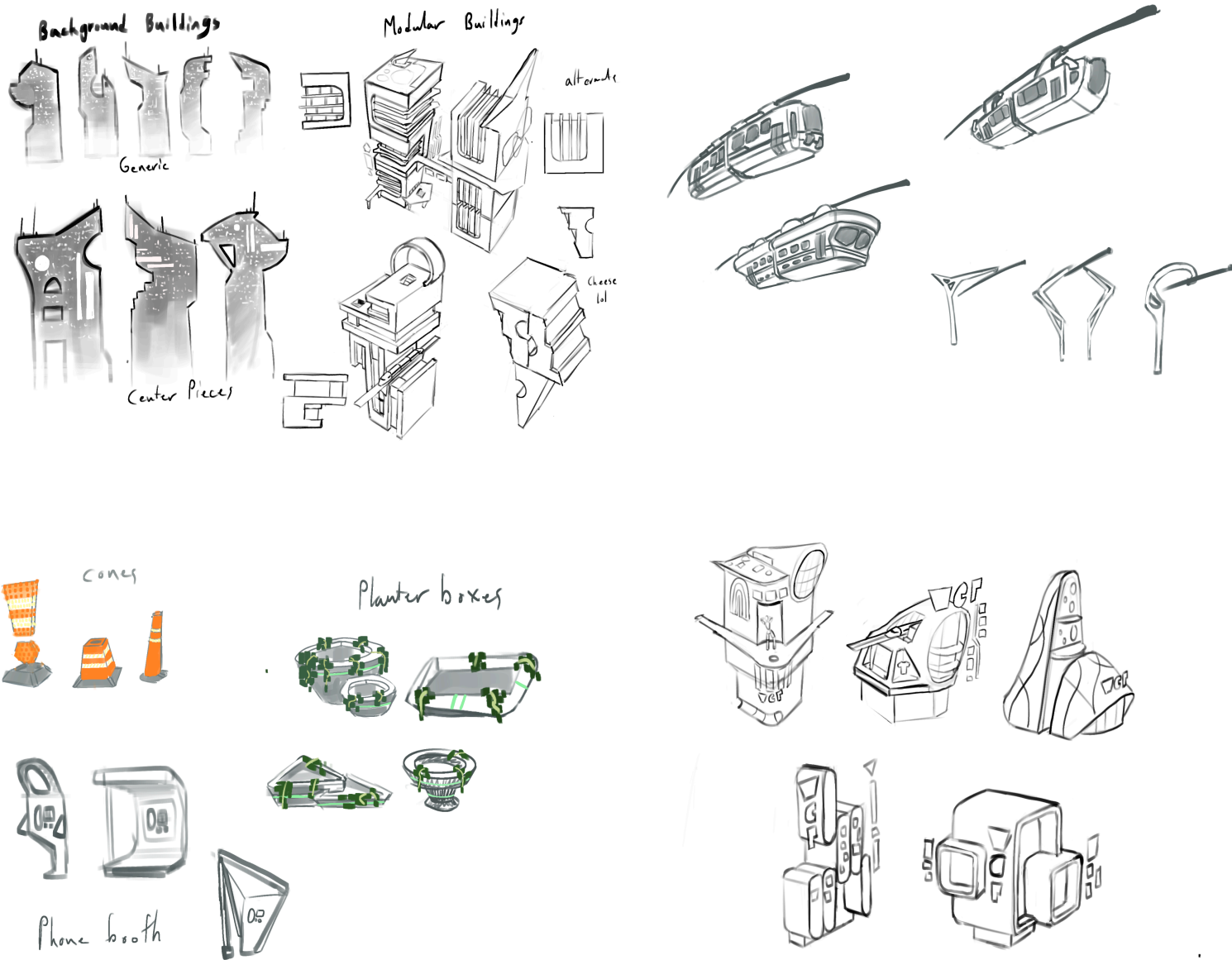
Environment

Many unique environmental models. Following the mid-century modern, yet futuristic aesthetic.

Finalized models

Below are finalized models of some environmental pieces.
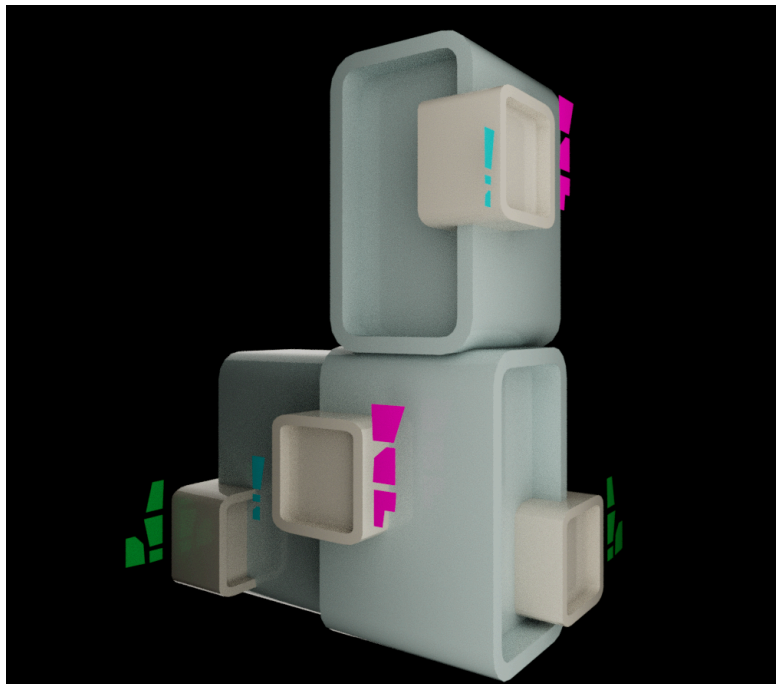
Finalized buildings for upper city
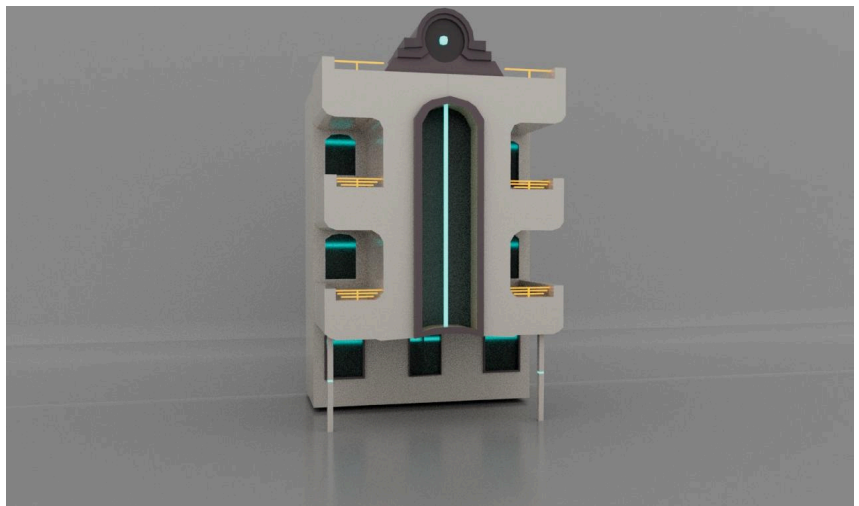
User Interface

In this game, we are creating a dynamic 3D UI system that features our environment in the background of the UI.

Main screen to game
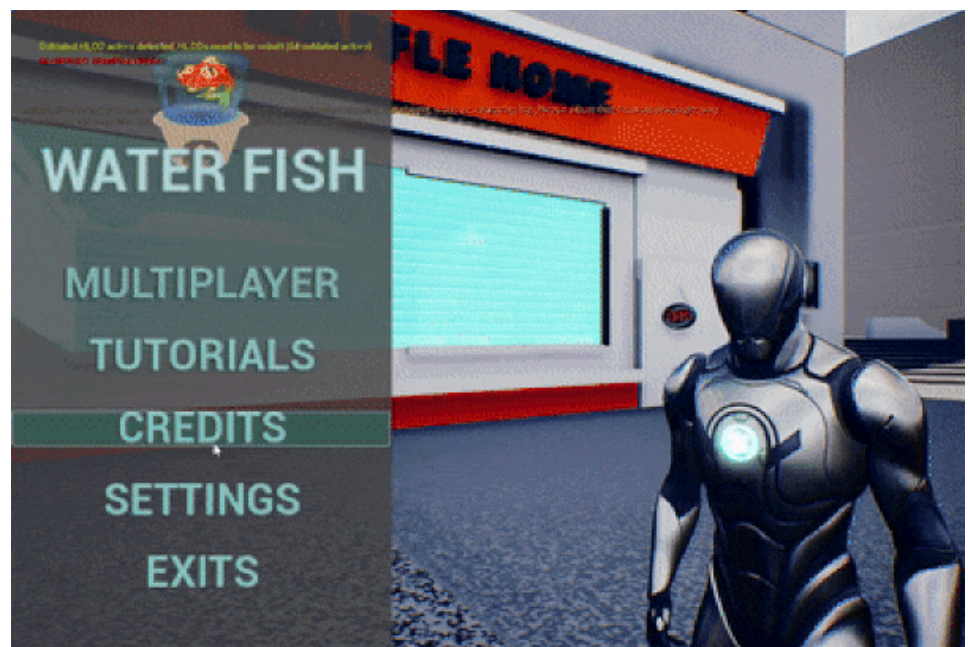
Game Overview

[Roller Frenzy] is a fast-paced, multiplayer king-of-the-hill style game. Pick from six unique, cyberpunk style characters to play against your friends!

Theme

Roller Frenzy is set in a sprawling retro future cyberpunk inspired city, where extreme roller skating tournaments dominate both underground and mainstream culture. Amidst upper city neon-lit skyscrapers and lower city graffiti-covered alleys, competitors battle for fame, freedom, and rebellion against oppressive mega-corporations.

Players embody five vibrant characters, each with their own unique style and backstory, in 5 different zones that transform everyday cityscapes into their own arenas.

The game's mood captures a mix of intense competition, punk rebellion, and dystopian glamour, inspired by classic cyberpunk aesthetics and the energy of modern skating subcultures.

Art

The art theme of the game is described as cyberpunk, dystopian, with bright color palettes. Along with mid-century modern inspired environment art, the art themes are represented in the environment and character models. [showcased in "art direction" section of document]

Narrative

The theme of the narrative plays with the story of a post- atomic bomb, where a city is stuck in a mid-century modern aesthetic, even though it is many years in the future. With a fleshed narrative of three unique places, the Upper district, lower district and the outskirts. Each setting has playable characters, with a personal backstory. The narrative plays with social commentary on the world today, through many different aspects.

Example of play

What do I control?

The player will control one of five unique characters. The locker room character selection scene allows players to pick which character they would like to play for the round.

How many characters do I control?

The player is only required to control one character per game. At the end of each game, the player is prompted to play again or return to the locker room. If they choose to go back to the locker room, the player can change what character they are playing for the next game.

What is the main focus?

There are many aspects to the gameplay but the main focus is to collect trophies by capturing zones. Players capture zones by being the person to spend the most time on, which incentivized players to knock other players out of the zones.

What are the main controls?

Tapping Left and Right Triggers - Forward movement

Tapping B - Slow Break

Holding B - Grind to Stop

Holding Trigger and Tapping B - Turn Stop

Rotating Right Joystick - Move Camera Angle

Rotating Left Joystick - Turn

Pressing Left Joystick - Dodge

Bumpers - Arms

A - Jump

Y - Boost

Z - Head

X - Attack

Features

Skating

- ★ Double Button Skating
  - ○ Movement mechanic that feels like roller skating through a gliding movement which is propelled by pressing two alternating buttons to gain momentum.
  - ○ Controls should be left and right trigger with variable input which can read how long you press the trigger.
  - ○ Speed Metrics:
    - ■ Speed Cap: 100,000 cm/s
    - ■ Amount of increase on correct press: 5 movement scale
    - ■ Amount of decrease on incorrect press: -2 movement scale
- ★ Basic Turning
  - ○ Basic turning utilizing the left and right triggers input so that when you hold one of them, it slowly turns you in the direction of the trigger you pressed while you are accelerating.
  - ○ This should be a softer turn and not a snappy turn where you whip around 180 degrees.
- ★ 3 Types of Brakes
  - ○ A light brake that slows down when you tap the brake button.
    - ■ Amount of decrease on tap: -10 Movement scale
  - ○ A grind to stop which is a very fast stop when you hold the brake button.
  - ○ A turn stop which is a quick stop that is also a change in direction when you hold a trigger and press the brake button.
- ★ Boost

- ○ As the player is skating, a marker of some sort on the HUD (Either a bar or a circle etc) should be slowly being filled over time. Additionally, whenever a player lands a successful attack on another player, it will give extra.
- ○ Once the player has a full boost, they can press a boost button which will give them a small speed boost on hit and then increase the speed cap.
★ Grinding
- ○ When a player is within range of a collision trigger for a rail, if they jump then they will land on it to grind on the rail.
- ○ Once they are grinding, they will maintain a consistent speed and the triggers will instead of the normal functions, will just make the player lean in either direction when they hold it.
- ○ They can dismount by either reaching the end of the rail which manually triggers the jump animation OR they jump which manually takes them off of the rail to the left or the right based on which side they are leaning. If they aren't leaning, it randomizes the side they land on.
★ Falling
- ○ When a player is hit with enough force, it can trigger a fall. This animation is split into two sections, a falling animation directed away from the triggering hitbox, and a rising animation triggered after a set Stun Delay of 1.5 Seconds TBD. Players can't earn points for the zone when they are knocked down.
★ Dodge
- ○ When a player is engaged in combat, they might need to move out of the way of a players attack. By hitting the dodge button, it will give them a small boost of speed in the direction they are looking and make the player invulnerable for a moment.
    - ■ Dodge boost amount is 500 cm/s
★ Jump
- ○ A basic jump that launches the player in the air when jump is pressed
    - ■ Jump Velocity is 700.0 cm/s
- ○ A double jump that launches the player further into the air when the jump is pressed two times back to back.
★ Ramps

- When a player skates up a ramp and launches off the end, it will propel a focus on the player into the air and it the force should be affected by the acceleration
- ★ Wall Riding (Stretch Goal)
  - When the player is going at a high enough speed, the player is able to glide along the edges of the walls.

Zone Control

- ★ Zone Activation
  - The zones can activate and deactivate when necessary in the game loop.
  - The max speed will decrease when a zone is active
    - Speed max when a zone is activated: 75,000cm/s TBD
    - Speed max when a zone is not activated: 100,000 cm/s TBD
- ★ Zone Marker
  - There will be a marker at the top of the screen to point you to the direction of the zone that is either activated or warming up. If you are in the correct zone, it disappears.
- ★ Game Timer
  - After the game has all players, the game will start and the timer will begin the to cycle through the phases below:
    - 10 number of seconds for a random zone to warm up
    - 20 number of seconds
- ★ 5 King of the Hill Zone Locations
  - 5 locations on the map that the game can recognize if a player is in it
  - This should include time tracking for each player as to how much time they have spent on the zone when a zone is activated
- ★ Zone + Game Win/Loss
  - When a zone deactivates, it should check to the player with the highest amount of time in the zone and reward them 1 trophy.
  - After the trophy has been rewarded, it should check if any players in the game have the goal trophy number and move to the end game/win screen if someone has won

- 2 players | 4 Trophies to win
            - 3-4 players | 3 Trophies to win
            - 5-6 players | 2 Trophies to win
    ★ Player Leaderboard
        ○ Live Leaderboard showing where all the players are from 1st through last.
        ○ When a zone is activated, the leaderboard should be reflective of the total time for that zone
        ○ When a zone is not activated/warming up, the leaderboard should be reflective of the total number of trophies.
    ★ TBD Nametags/Player marker/Differentiate
        ○ We are still discussing how we want to do this.
    ★ First Place Marker (Stretch Goal)
        ○ Whenever a player is in first place, they should have some sort of glow or highlight or marker above their head.

Trick Combat System

- ★ Motion Capture based trick system that functions as the combat to help a player overtake a zone.
- ★ Visually, the tricks are a combination of skills from roller skating, rollerblading, tae kwon do, martial arts tricking, and gymnastics.
- ★ Tricks will deal knockback and temporarily stun the player if they are hit with enough force, making them vulnerable to more attacks. The game does not have health or a death mechanic, so instead players will be disadvantaged by being stunned or knocked into a less favorable position from these attacks.
- ★ Tricks can be done in combos or done with more momentum to deal more knockback therefore skating with speed and jumping off obstacles will reward the player.
- ★ Certain tricks will inherently have more knockback than others and will be more difficult to perform (i.e. a simple punch with a 1 button press vs. a multiple-button press flip kick).
- ★ 3 tricks at minimum and 12 tricks at Maximum. One trick for each character and the rest are for all characters

★ Trick Metrics
- ○ Strength of single trick: TBD
- ○ Amount of time between tricks to count as a combo: TBD
- ○ Amount of increase in strength for every sequential attack: TBD
- ○ How much force triggers a fall: TBD
- ○ How close you need to be to a player to hit them: TBD

Individual Tricks

★ Trick 1 | Elbow
- ○ Button Combination
  - ■ X
- ○ Visual Description
  - ■ Elbow at chest height
- ○ Character/s
  - ■ All

★ Trick 2 | Punch
- ○ Button Combination
  - ■ X + Arm
- ○ Visual Description
  - ■ Punch
- ○ Character/s
  - ■ All

★ Trick 3 | Side Kick
- ○ Button Combination
  - ■ X + Leg
- ○ Visual Description
  - ■ Side kick
- ○ Character/s
  - ■ All

★ Trick 4 | Backsweep
- ○ Button Combination
  - ■ X + Crouch

- ○ Visual Description
  - ■ Low ground level spinning kick
- ○ Character/s
  - ■ ALL
- ★ Trick 5 | Pop 360
  - ○ Button Combination
    - ■ X + Jump
  - ○ Visual Description
    - ■ Two footed take off, 360 degree rotation, crescent kick (windshield wiper motion)
  - ○ Character/s
    - ■ ALL
- ★ Trick 6 | Flying Knee of Death
  - ○ Button Combination
    - ■ X + Boost
  - ○ Visual Description
    - ■ Long jump forward knee up arms back (mma flying knee but flying forward)
  - ○ Character/s
    - ■ ALL
- ★ Trick 7 | Execute
  - ○ Button Combination
    - ■ X + Leg + X (+ high speed)
  - ○ Visual Description
    - ■ flip kick (full hyper hook)
  - ○ Character/s
    - ■ ALL
- ★ Trick 8| Unique Trick
  - ○ Button Combination
    - ■ X + X + X
  - ○ Character/s
    - ■ Ranger Girl
      - ● Pop Hurricane Kick

- - Spin Triple Kick Radius Effect
  - Punk Girl
    - TBD (Air Drop 1990?)
    - Breaking Beat Plays? Aerial into windmill into spin on hands. Splash damage effect
  - Poker Guy
    - Frappe
    - Single twisting double backflip with a downward kick in the second flip
  - Barbie Girl
    - Tornado something
    - 540 kick, disco spin, 540 kick gyro, floor roll, pose damage along the whole combo (can affect multiple ppl)

Misc. Features

★ Full Controller Support
  ○ The game will be playable cross platform on keyboard/mouse as well as using a controller with controller being the main support.
★ Voicelines System
  ○ A system that allows us to play voice lines when certain criteria are met.
    ■ X seconds between the same player triggering another voice line
  ○ 20 recorded individual voice lines for each of the 4 characters.
    ■ 3 that can be done when they perform ANY trick (Local)
    ■ 1 that plays when the perform their unique trick (Global)
    ■ 3 that can play when the player falls (Local)
    ■ 5 zone specific (1 for each zone) (Local)
    ■ 1 for when a zone activates (Local)
    ■ 1 for when a zone deactivates and they WON (Local)
    ■ 1 for when a zone deactivates and they LOST (Local)
    ■ 3 general ones that can play anytime they are skating (Local)
    ■ 1 for when a player has been in 1st place for 15 seconds (Global)
    ■ 1 for when a player has been in last place for 15 seconds (Global)

- ○ Character Conversations (Stretch Goal)
  - ■ Short 2-3 line back and forth interactions with the various characters
- ★ Character Stats
  - ○ Each character will either be classified as Heavy or Light
  - ○ Heavy characters will have a lower max speed but will do more knockback to opponents when they successfully hit a player with a trick
  - ○ Light characters will have a higher max speed but will do less knockback to opponents when they successfully hit a player with a trick
- ★ Mocopi Support (Stretch Goal)
  - ○ Implement alternate controls using the Mocapi system for a more interactive experience where the player wears sensors so that when they move in real live, their character follows their movements.
  - ○ The controls would link up to movement of the player so different physical movements will trigger in game reactions.
- ★ Traffic Obstacles (Stretch Goal)
  - ○ Cars that slowly drive around and when a player is hit by them it causes a fall
- ★ AI movement for NPCs (Stretch Goal)
  - ○ NPCs that walk around and when a player skates into them, they both fall.
- ★ Emote System (Stretch Goal)
  - ○ Simple iteration of an emotes system with a button that triggers the emote menu to pop up and allow them to use a joystick to select one of the three options of unique motion captures emotes.

The Game World

Overview

The world of Roller Frenzy is a retro future cyberpunk city segmented into distinct zones based on socioeconomic divides. The city's layers, Lower and Upper, reflect its dystopian society, with lower levels gritty and chaotic, while the upper layers boasting their glamorous corporate-backed aesthetics.

The game's zones are pseudo arenas are carved out of this city. Each zone offers unique traversal challenges and visual flair, enhancing replayability and immersion.

Physical world

The game world consists of interconnected urban environments. Zones are crafted to emphasize verticality, speed, and player strategy. The city is alive with NPCs, environmental storytelling, and subtle nods to the larger dystopian narrative.

Key Zone locations

Lower City (Gritty, Chaotic, Grimy, Philadelphia..)

- ★ **Redlight District/Stacked Apartment Area**
  - ○ Dimly lit with neon signs and holograms casting eerie glows.
  - ○ Tight alleyways and abandoned skate paths.
  - ○ Hazards: Barriers, narrow paths, NPCs
  - ○ Inspired by Chinese urban architecture, with densely packed living quarters.
  - ○ Vertical gameplay: ramps between rooftops, balconies, and precarious drops.
- ★ **Traditional Skate Park**
  - ○ Classic half-pipes, rails, and grindable surfaces littered with graffiti.
  - ○ Feels like a nostalgic nod to street skating.

Middle Ground (Industrial, Gritty)

- ★ **Subway Zone**
  - ○ A labyrinth of underground tunnels and train platforms.
  - ○ Hazards: Moving trains, NPCs

Upper City (Corporate, Retro Futuristic)

- ★ **Food Market/Shopping District**
  - ○ A vibrant area with holographic ads, food stalls, and sprawling marketplaces.
  - ○ Verticality: Rooftop pathways, vendor carts as obstacles, and narrow pathways.

- Hazards: River, NPCs, Cars
- ★ **City Center**
  - The heart of the upper city, filled with corporate skyscrapers, flashing billboards, and drone taxis.
  - Hazards: River, NPCs, Cars
- ★ **Horticultural Park**
  - A rare green space with bioengineered plants and sleek, metallic bridges.
  - Unique hazard: A central artpiece waterfall sinkhole with bridges players can fall from.

Travel

Players seamlessly skate from one zone to the next as they are activated, creating a dynamic and interconnected experience. Transitioning between zones is fluid and emphasizes speed and creativity:

Street Skating: Build momentum by skating through bustling city streets, dodging traffic and obstacles while maintaining control.

Advanced Traversal: Combine skating with tricks like grinding on rails, wall-riding along buildings, and launching off ramps for higher-speed skating.

Integrated Shortcuts: Discover hidden pathways, like alleyways or rooftop connections, to outpace opponents.

Scale

The scale for the environment is approximately real world scale. The ranger character is around six feet tall, with a height jump of 1 foot. Therefore, any jumpable objects must be less than 1 foot. All buildings are at least 10 feet tall.

Narrative

What the narrative of [roller frenzy] is and how it is incorporated in our game.

Setting

The game takes place in VeloCity, a sprawling, futuristic city divided into two starkly different areas: the Upper City and the Lower City.

Upper City is a gleaming utopia, home to the wealthy elite. Skyscrapers touch the sky, technology thrives, and every corner is pristine and luxurious. It's a place of influence, power, and media control, led by **Barbie Girl**, a global celebrity and influencer who embodies the perfect image and lifestyle of this polished world.

Lower City lies beneath the towering foundations of Upper City, trapped in a permanent shadow. The Lower City is overrun with pollution, smog, and the waste of the rich above. It's home to the rebels, outcasts, and survivors who scrape by on scraps while dreaming of a better life. The streets are gritty, and survival is a constant fight. Roller skates are the fastest and most effective way to navigate the crumbling infrastructure.

Conflict

Barbie Girl, with her massive social influence and celebrity status, isn't just a fashion icon, she's a puppet beholden to her sponsors in a larger scheme to control the masses. Her rise to power isn't purely cosmetic, she uses her influence to push a dangerous agenda. In VeloCity, she hosts **Roller Frenzy**, a massive, citywide competition that has become a cultural phenomenon. Every citizen, from the lowest zones to the highest towers, watches or participates.

Barbie Girl presents **Roller Frenzy** as a thrilling, entertaining sport, but her true motive is to consolidate power and suppress protest. The Roller Frenzy zones are scattered across both the Upper and Lower City, and they serve as a battleground for control of the city's future. Each zone conquered or lost shifts the balance of power between the Upper and Lower areas.

Character Backstories: The Skaters

Punk Girl (The Rebel Hero)

Backstory: **Punk Girl** grew up in the heart of the Lower City, where she saw firsthand how the elite exploit the poor. She's a rebel with a cause, fighting to expose **Barbie Girl's** true motives and dismantle the influence she holds over VeloCity. She represents the anger and

frustration of the lower classes, donning roller skates as her weapon of choice to strike back.

Why She Skates: For **Punk Girl**, skating is both a form of resistance and freedom. By winning zones, she's pushing back against **Barbie Girl's** influence and inspiring others to stand up for themselves. Skating and performing tricks are her way of making a statement—defiance in motion.

Goal: To liberate the Lower City and unveil **Barbie Girl's** corruption, giving power back to the people.

Ranger (The Outlaw)

Backstory: Ranger is a rogue from the wastelands outside VeloCity, who came to the city looking for opportunities but found herself at odds with the rigid control of the Upper City. She thrives in the chaos of the Lower City, and her wild, fearless attitude makes her a natural roller-skating vigilante.

Why She Skates: For **Ranger**, Roller Frenzy is a lawless battleground where she can prove herself. She loves the rush of danger, and skating through the zones is like her version of the wild west, where she can fight, trick, and skate her way to fame.

Goal: To carve out her own territory and make a name for herself in this divided city, all while living by her own rules.

Barbie Girl (The Villain)

Backstory: Barbie Girl is more than just an influencer—she's a calculating and power-hungry figure who has used her platform to ascend to the pinnacle of the Upper City. Beneath her glamorous facade is a ruthless manipulator who engineered Roller Frenzy to keep the Lower City in line, while using it as a tool to eliminate anyone who dares oppose her vision of a "perfect" society.

Why She Skates: Barbie Girl skates to maintain her image and to keep the facade of a fun, empowering competition. But when she enters the arena, she's not above using her power to crush anyone who threatens her reign.

Goal: To maintain her stranglehold over the city, ensuring that her influence, and the Upper City's dominance... remains unchallenged.

Convict Boy (TBD TITLE)

Backstory: **TBD**

Why He Skates: **TBD**

Goal: **TBD**

Robot Boy (TBD TITLE)

Backstory: **TBD**

Why He Skates: **TBD**

Goal: **TBD**

Rendering system

Overview

A guide on what engine and version we use for [Roller Frenzy]. The lighting and VFX standards are listed as well.

Game engine

[Roller Frenzy] uses Unreal Engine version 5.4.

Lighting

The game will use many of Unreal Engine's lighting tools in order to create a cohesive and beautiful world.

There will be one main directional lighting that acts as the game's main light source. This main directional lighting should be a neutral color in order to maintain the color integrity of the assets within the world as well.

The sci-fi assets in this world should be lit with an emissive map or a static/baked light in order to have the most efficient performance.

Post processing will do most of the heavy lifting for stylizing the world with colorful lights. The use of the sharpness and chromatic aberration will be used sparingly in order to create a slight outline to the objects within the world.

VFX

VFX will include particles, sparks, and smoke using Unreal's native Niagra system. Niagra is automatically compatible with blueprinting and will be helpful with ease of integration.

When a player times their skating input correctly, the skates will spark in conjunction with the skater speeding up, so that the player gets visual affirmation that they timed their input correctly. When a player times incorrectly, they will slow down and the skates will smoke, indicating that the timing was off.

Additionally, there will be a Niagra effect when a player falls and an effect when a player lands an attack. This will be a combination of a motion trail and an impact shockwave effect.

When a player wins a zone, there will be a celebratory effect reminiscent of confetti or fireworks.

Additional particles and smoke will be used to enhance the overall aesthetic of the map. The lower city and subway will require smoke and dust particles. The upper city may require ambient bright particles to enhance its beauty.

World layout

Overview

City Center
Horticultural Park
Shopping District
Subway
Red Light District
Skate Park

Zones and Highways

Zones, Highways, and Streets

Upper

Lower

City Map Draft 1

Musical scores and sound effects

How the music is created for the game. What to follow when creating musical scores for [Roller Frenzy]
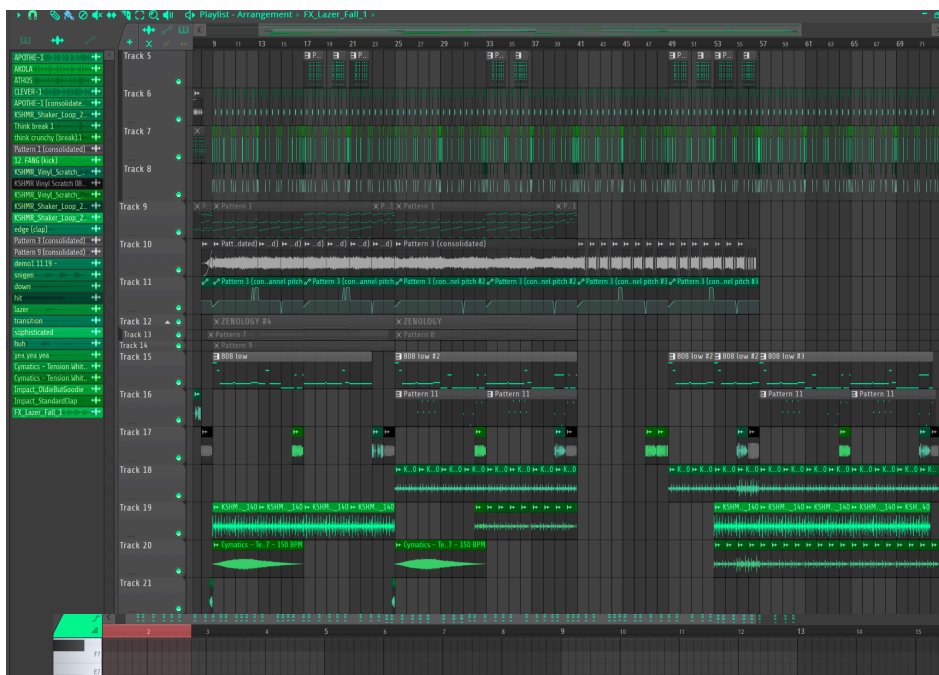
Program

★ DAW FL Studio

Composition

★ Using virtual instruments
★ Plugins
★ Samples
★ Drum breaks

Editing

★ Edit tracks in chucks, then use for different cues within each game
★ Each chunk is a different variation
★ Increase intensity to accompany the player increasing their score during a run in each section of the city

Main screen - different instrument tracks, drums and sound effects

Follow this as template

Midi for one instrument, individually set the notes for what the instrument will play
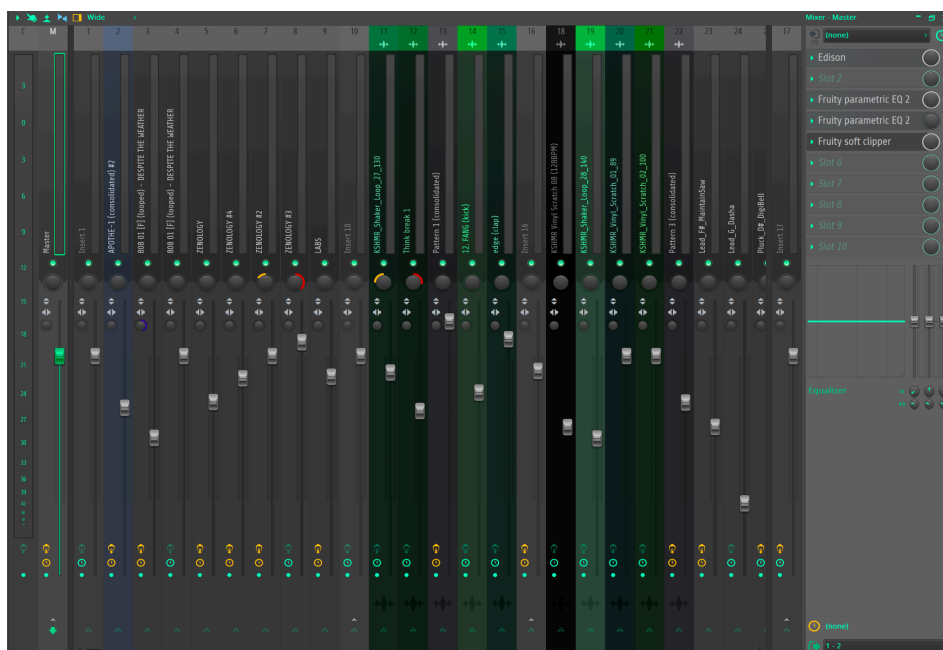
Mixer balance o tracks, apply different signal process to each of EQ, compression, distortion, panning, reverbs, and delays

Multiplayer

Overview

- ★ The game is entirely multiplayer with a focus on individual matched play. Players are able to create sessions and other players on their network are able to join them. Games won't start until a number of players set by the Host have joined

Details

- ★ Max Players
  - ○ 2-6
- ★ Servers
  - ○ Our game uses a Client Server Relationship, as is the easiest to use architecture supported by the default Unreal Subsystem.
- ★ Customization
  - ○ Players are able to choose from a variety of playable characters in each match that each offer a unique gameplay experience.
- ★ Internet
  - ○ At the moment the game is planned to operate using the Unreal 5 Networked Subsystem which is mainly focused around Local Area Network play.
- ★ Gaming Sites
  - ○ We are currently doing research into potentially utilizing the Steam or Epic Networked Systems, which would allow us to host our game on their platform and utilize their wider network, though the costs are still being considered.
- ★ Persistence
  - ○ No, our game is fully match based, so persistence is a non-factor.
- ★ Saving and Loading
  - ○ Again, as the game is entirely match focused, there's no saving or loading of states.