MEOW TUNES

Out of Tune Studios

Game Description

Meow Tunes is a rhythm-based 3D platformer about a cat who travels through different worlds, facing musically inspired challenges to become a better musician and a master of rhythm by the end of their journey. Each level is themed around a set of music genres, which will define their environment and design. The levels in Meow Tunes will have rhythm-based interactions, there will be platforms and obstacles that move, disappear and reappear according to the beat of the level's song.

The game will be mainly directed to casual players who enjoy music games and are looking for a fun, but challenging, adventure, similar to games such as Super Mario 3D world and Sackboy Adventure. The graphics will be low-poly, looking for a minimalistic and whimsical aesthetic with predominantly pastel colors. The player will be able to use either a keyboard + mouse or a console controller to jump, move, and stomp their way through the levels.

1.   Team Description

Below is the breakdown of every Out of Tune Studios team member. For each member, there is a description of their expertise, their experience, and their responsibilities.

1.1.   Music Team

Griffin Hook

- **Expertise**: Composition
- **Relevant Experience**: Previous composition projects for video games, Experience in Finale Notation Software & working with DAWs.
- **Responsibilities**: Composer of Select Level Themes

Lyndon Kwan

- **Expertise**: Composition, Sound Design and Implementation
- **Relevant Experience**: Composition for films and video games, sound design and implementation for video games
- **Responsibilities**: Composition for levels as well as sound design

Ming Hei (Andrew) Li

- **Expertise**: Composition, Guitarist, Singer-songwriter & Sound Design
- **Relevant Experience**: Composition for animation, video games, pop song album recording & production
- **Responsibilities**: Composition for game levels and sound effects

1.2.   Development Team

Daniela Venturo Esaine

- **Expertise**: C/C++/C# programming, Agile management methods.
- **Relevant Experience**: Team Management with mainly Agile methods, Unity and Unreal Engine programming, Co-Op at Demonware for online game programming, avid gamer.
- **Responsibilities**: Team Lead and Gameplay Programmer

Judy Naamani

- **Expertise**: C# programming, Agile workflow
- **Relevant Experience**: Professional Software Development experience and experience with Unity programming.
- **Responsibilities**: Gameplay Programmer and Game UI

Faisal Jamil

- **Expertise**: Java/C# programming, ML/AI

- **Relevant Experience**: Lots of game design experience from building games as side projects and browsing game design forums.
- **Responsibilities**: Gameplay programming and Game UI.

Ming (Gavin) Liu

- **Expertise**: C++/C/Javascript programming, Agile workflow, Computer Vision
- **Relevant Experience**: Developed Unreal Engine-based simulation software, participated in web-based game development
- **Responsibilities**: Gameplay Programmer and Game Audio Implementation

1.3.   Art Team

Leen Tabana

- **Expertise**: Producer
- **Relevant Experience**: 3D modelling, time management, admin support
- **Responsibilities**: Line of communication, scheduling, support, making sure everyone is on the same page.

Gryffin McKenzie

- **Expertise**: 2D Lead & Art Director
- **Relevant Experience**: Graphic Design, Illustration, Character Design
- **Responsibilities**: Directed visual presentation of the game, created concepts, and contributed to overall aesthetics of the game.

Heather Campbell

- **Expertise**: CG Supervisor & Environment Artist
- **Relevant Experience**: Fine Art degree, 3D modelling, Unreal Engine Artist
- **Responsibilities**: Provides technical guidance to the 3D art department, creating a time-appropriate pipeline and design solutions for the client, provides review and feedback on assets when necessary, contributes models and other assets for the environment art team.

Finn Warrener

- **Expertise**: Character Lead & Art Director
- **Relevant Experience**: Art Direction/Artistic Lead, Illustration, 3D Modelling
- **Responsibilities**: Communicating between the creative director & art team. Creating asset lists and delegating said assets between various artists on the team. Contributing to the asset list via the two primary characters, including the protagonist.

Galina Smiryagina

- **Expertise**: Prop lead

- **Relevant Experience**: modelling and texturing assets
- **Responsibilities**: creating assets, overseeing prop creation, delegating tasks to 3D modellers

Andres Raul Lopez

- **Expertise**: Environment Lead
- **Relevant Experience**: Modelling and 3D designer
- **Responsibilities**: Creation of assets for the environment, working together with the Art director and modellers.

Jamie U.F.

- **Expertise**: Lead Animator
- **Relevant Experience**: 3D animation, Biped & Quadruped Animation
- **Responsibilities**: Manages the animation workload, providing references, testing out animations in unity & creating the animation itself.

Jade Bertanicz

- **Expertise**: Lead fx, Prop modeller
- **Relevant Experience**: modeling and texturing assets
- **Responsibilities**: creating fx for each game, delegating fx tasks to other artist, modeling assets.

Ben Liang

- **Expertise**: Concept Artist
- **Relevant Experience**: design characters and environment, illustration
- **Responsibilities**: Concept Art, 2D assets

Mertay Tamer

- **Expertise**: Prop modeller.
- **Relevant Experience**: Modelling and texturing.
- **Responsibilities**: Modelling and texturing the assets and making sure they fit the desired outcome.

Syed Daniyal Ali

- **Expertise**: character modeling
- **Relevant Experience**: Sculpting, modeling and texturing characters
- **Responsibilities**: Create characters and props for the games

Hyejeong Na

- **Expertise**: Rigger

- **Relevant Experience**: Rigging characters
- **Responsibilities**: Rig characters for games

Juan Testa

- **Expertise**: Lighting Artist
- **Relevant Experience**: Create lighting for 3D environments.
- **Responsibilities**: Lighting the game

2. Story

A disappointed-looking cat falls down from the sky. They have just been rejected from their dream school for music, Meowsic University. Their dreams are shattered as they wander through the streets of the city until they meet a magical creature who promises to help them with their quest to become a master musician. This creature is the Tune Guardian, who has the power to travel between different dimensions.

The Tune Guardian guides the cat through different musical worlds, each more rhythmically challenging than the last, and by facing these challenges, our main character gains back their self-confidence and decides to take the university's music entrance exam again with their renowned skills.

They face the ultimate challenge when presenting themselves to the Admissions and Recruitment cat representative, who will ultimately decide our fluffy hero's fate. Will they be able to achieve their dreams? Or will they fail again?
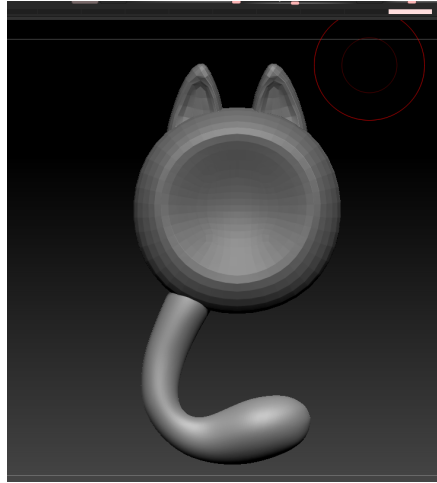
2.1. Characters

The **cat** is the main character in the game. They start the game hopeless and in need of a music lesson. As the game progresses, so will their self-confidence and musical skills. The design of this cat has to look young and agile since all of the character interactions are related to some type of movement such as jumping, stomping, or running. They must have the ability to display emotions considering they will not communicate through spoken dialogue, only through expressive meowing audio effects and facial/body animations. Below is the cat's character concept art and the initial model.
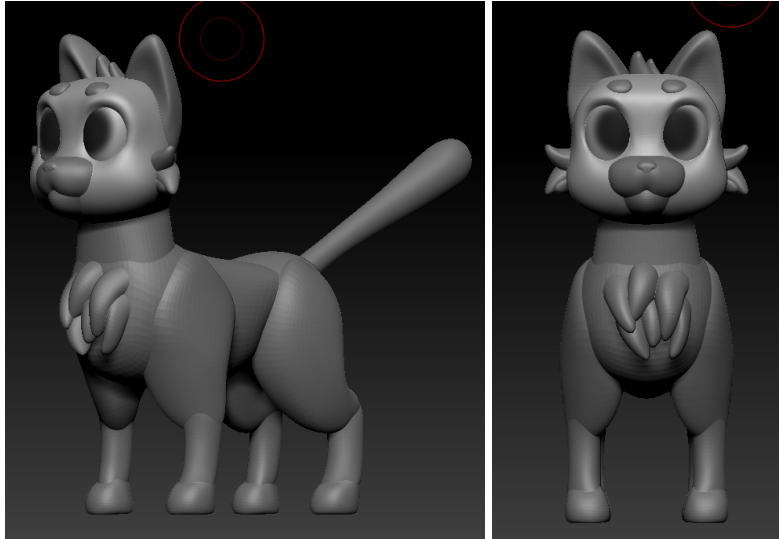
Besides our main character, we have their guide, the **Tune Guardian**. They will carry the dialogue in the game and act as an expository narrator. To match the game's theme, they must have a sense of humor and be playful and sarcastic as a character. Since their status is "mysterious magical creature" we want to hide their background information from the player (this confidentiality could be something we play within the dialogue). This character will appear floating next to the cat when needed for the story to progress. They guide the main character through different worlds and have the ability to travel between dimensions. They will help the main character become better at music by showing them music is all around them, and to learn from the environment (such as the rhythmic platforms) instead of sticking to theoretical studies. Below is the Tune Guardian's concept art and the initial model.

The final challenge will introduce the final enemy, Meowsic University's **Admissions and Recruitment cat representative** (name TBD). They are also a cat model, but their appearance is much more serious and old than our main character, they wear either a monocle or a pair of eyeglasses. Character concepts and detailed discussions for this character have not yet been made as this character will physically appear only at the last level of the game. In the first level, we only see a piece of dialogue from them directed to the cat that says "AND DON'T COME BACK!" when they reject the cat from the music program.

2.2. Theme

Meow Tunes is a game about learning skills in a fun way. Throughout the different platforming and rhythmic challenges, the main character's musical skills evolve. This must happen progressively at every level, displaying clearly how the cat becomes a better and more confident musician. This adventure is whimsical and playful, and this must be displayed through the aesthetic, the level design, the characters, the music, and the dialogue, which must have a good sense of humor. It is a game mainly directed to casual players, and therefore the tone is light and pleasing.

2.3. Story Progression

Set in a metropolis, Hip-Hop style music guides the platform movement. We start with the cat falling from the sky onto the first platform. A "AND DON'T COME BACK!" dialogue appears on the screen from the admissions and recruitment cat. The cat makes a sad noise. After going through a short tutorial on the main movement controllers, the cat encounters the Tune Guardian. The music switches to Jazz, as they explain to the cat that they know about their University rejection and they can help them. The Tune Guardian states music is all around you, and not just in your theory books. If the cat learns from the environment instead, learning will be easier and they will get accepted into Meowsic

University. They reach the first portal (shaped like a cardboard box) that will take them both to a new musical dimension.

This is when they pass on to the second level, set at the Beach, which starts with a relaxing tropical tune. The cat acquires the ability to speed up the music in the game since the relaxing tune is sometimes too slow for the challenge ahead. Then the volcano explodes, and the tune changes to a more anxiety-inducing chase sequence-style tropical music. The cat earns the ability to slow down the music since they will need it for some of the most challenging parts of the level. Finally, they reach the end of the level and the Tune Guardian guides the cat through the next portal.

The third level is set at a nightclub. Here the cat faces more challenging platforms, and they will have kept the speed-up/slow-down ability from the last level to aid them through the challenges. There will be two genres of music separating this level into two stages: EDM and Disco. At the end of the level, they go on the last portal that will take them to the last level: back to Meowsic University's auditorium.

At the auditorium, the cat will face their final display of musical ability in the hardest set of platforms yet. They must use all the platformer skills they learned so far to face more complex music: classical music, with 6/8 time. In the beginning, there is a dialogue between the cat and the admissions cat representative, who shows disdain for the cat. The cat should display a confident expression before beginning the level. If the cat beats the level, the cat representative for Meowsic University accepts them into the program and takes back their words. The story ends with a happy and confident cat.

3.   Gameplay Description

Meow Tunes is a rhythm-based 3D platformer game, where the player plays as a cat who's on a musical journey. The environment around them moves on the beat, combining rhythm-based mechanics with elements from familiar platformers such as Sackboy Adventure and Super Mario 3D World. Our game aims to create a whimsical, cozy, and fun experience.

The levels are composed of platforms and obstacles that move on the tempo, and the player must face the ever changing environment by following along to the rhythm.

Each level is themed around a set of music genres, and with each new genre comes more complex tempo patterns, gradually adding difficulty to the game.

The player is also given the ability to speed up or slow down the tempo, which will help them face various challenges, while also giving them the freedom to play the game at the pace they want!

The player must get to the end of the level by coordinating their movements to the beat, changing the tempo to their advantage, and displaying agility and dexterity.

3.1. Goals

Overall

The goal is to make the cat a better musician and turn them into a master of rhythm, and to eventually retake their entrance exam and be admitted into the music program!

Short-term

➢ Learn about tempos and beat patterns in different music genres.
➢ Finish levels quickly while grabbing collectibles to achieve a higher score.
➢ Get to the cat box at the end without running out of lives.

3.2. User Skills

With our game being centered around rhythmic mechanics and coordinated movements, the players of our game would develop and master the following skills:

➔ Coordinating movements
➔ Agility or Dexterity
➔ Sense of Rhythm
➔ Pattern Recognition

3.3. Game Mechanics

1. Appearing/Disappearing Platforms

Our levels include platforms that disappear and reappear on the beat. As we approach every beat change, a set of visible platforms will start to flash before disappearing, while another set of platforms re-appears. The disappearing and reappearing of platforms happens exactly on the beat, and on the next beat, they switch positions.

This mechanic goes on for the entirety of the song, and the player can notice the pattern and coordinate their movements and jumps accordingly.
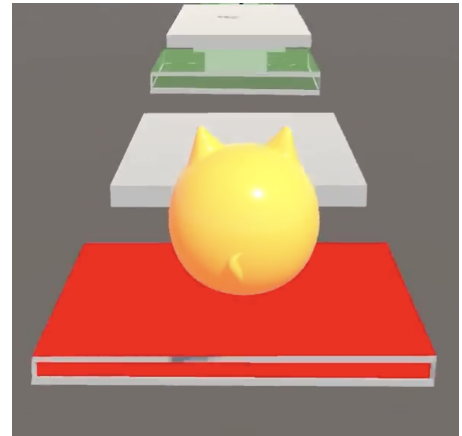
2. Moving Platforms

Similarly to the appearing/disappearing platforms, these platforms are also in-sync with the beat. In this case, they move from one position to another in coordination with the beat, and the player must follow along and make their way across these platforms without falling.

3. Player Mobility

The key characteristic of our main character is their agility: they must be given a multitude of movements to help them navigate each level. Below are the different ways in which the player can move:

➔ Walking
➔ Sprinting
➔ Jumping and double-jumping

◆ The height of the first jump depends on how long the player holds the "Jump" button

◆ If the player double-jumps, the second jump will have half the height of a normal one, so that it doesn't make the game too easy.

➜ Stomping after a jump

These movements aim to enhance the overall experience of the player. Some of them help regulate the difficulty of the game: for example, double-jump lets the player "undo" a wrong move and go back to their previous position. Some other movements provide additional strategies to the game: for example, if a player was in the air, they could stomp to get to the platform under them quickly before it disappears.

4. Changing the Tempo

A main mechanic in our game is the ability to interact with the level's music. The player can increase or decrease the tempo of the music, and this would affect the movement speed of the platforms or obstacles. There would be different situations where changing the tempo is needed to get through a level, but the mechanic can also be used at any point for the player to manipulate the speed of the level as they see fit. For example, some players could speed up the music for the entirety of the level to challenge themselves or have more fun. Other players looking for a more laid back experience could utilize the slow-down ability to get around more easily.

The player's current speed is indicated at the bottom of the screen using a meter. There are 3 possible speed modes:

1. Normal, which is the default
2. Fast
3. Slow

Players can speed up or slow down the tempo by pressing one of two buttons, and there is a slight cooldown (5 seconds) in between switching speeds.

5. Checkpoints

Checkpoints are present throughout the level in the shape of cat toys. When the player walks over a cat toy and picks it up, they would respawn at that spot if they were to fall. This mechanic helps balance our game and reduce frustration, especially when some parts of a level get more challenging.
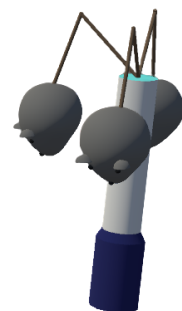
6. Completion Time

Our game includes a stopwatch that records the completion time of a level. As they play through a level, players can see their current time at the top corner of the screen. When they complete the level, the completion time would be displayed on the Win screen. This mechanic adds a new way for players to challenge themselves if desired, and otherwise they can choose not to display their time while they're playing: this would be configurable in the game settings, with the default being to hide the stopwatch.

3.4. Items

1. Fish Treats

Each level contains a multitude of fish treats, which are the common collectible for our game. These items contribute to the player's score: the number of fish treats collected is displayed upon completion of a level, and currently represents the player's score for this level.
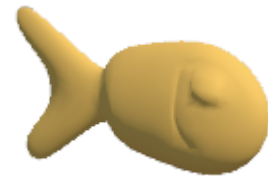
2. Special Collectible

While fish treats are common, each level also contains a secret collectible that is more difficult to obtain. These special collectibles would be placed in places that are especially hard to reach, and getting them is completely optional but they do provide a special achievement if they are all collected.

3.5. Progression and challenge

The difficulty of the game will increase as the player moves along each level, by having platforms and obstacles that require tempo manipulation. The player will be given the ability to change the speed of the music, and with that in their toolbox, they will have the needed skills to face the more challenging situations they will be put in.

In addition, the game will become more difficult as the tempo patterns become more complex in later levels. From the start, the game will get the players used to following along and coordinating their movements to the tempo. As their musical and pattern recognition skills grow, the tempos will gradually become more complex, hence increasing the challenge in the game.

3.6. Losing

At the start of every level, the player is given **5** lives. Every time they fall off a platform, they lose a life and respawn at their most recent checkpoint. A player loses and sees the "Game Over" screen once they've run out of lives, at which point they can start the level all over again.
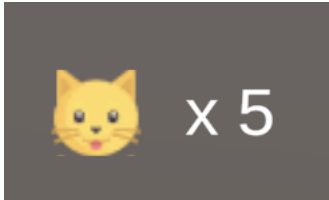
4.   Controls

Our game supports Mouse and Keyboard controls, as well as playing with a controller (PS4, Xbox, Switch).

Below is our control map for playing with Mouse and Keyboard. Note that the mouse is used for moving the camera.

And next are our controller controls, mapped out below on a PS4 controller. While this scheme is specific to PlayStation controllers, our game also supports Xbox and Switch controllers. In those cases, the controls are still the same, just with their respective button names. Joysticks, triggers, and bumpers behave the same on all controllers, and the jump button and stomp button are respectively the south and east buttons.
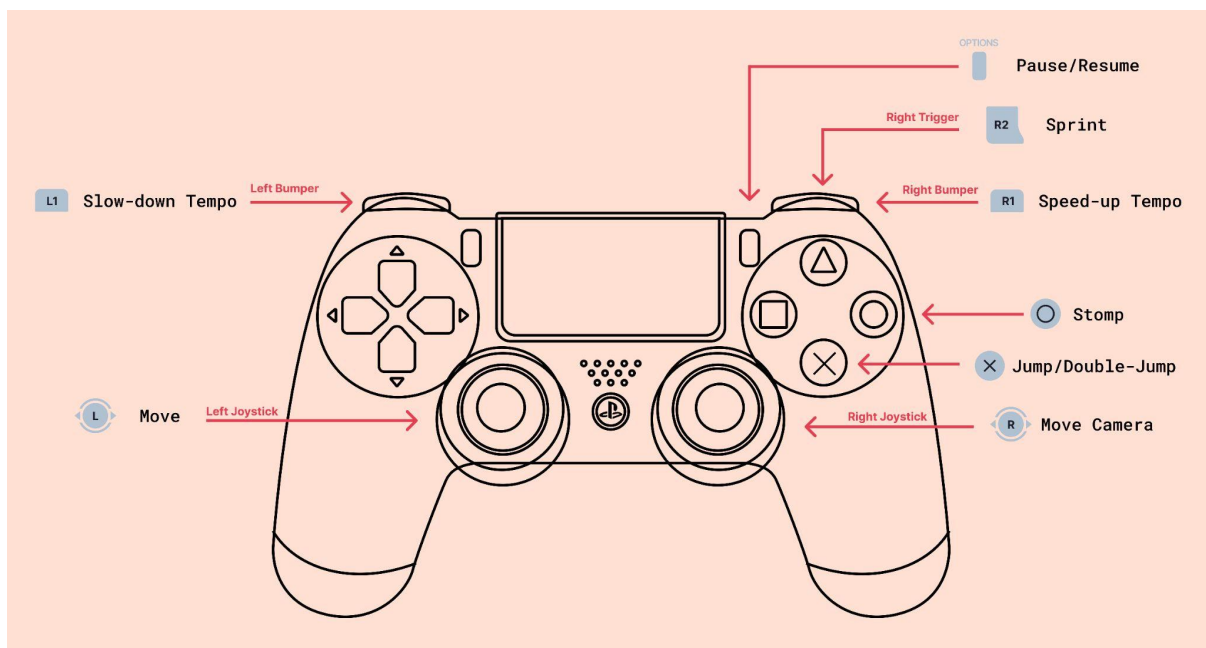
5.   Level Design

Each of the four levels in Meow Tunes will have the following general structure:
1. Arrive at world
2. Go through platforms, grab checkpoints and fish collectibles
3. Have the chance to grab the special yarn ball collectible
4. Reach the end of the level marked by a cardboard box.

As we move from level to level, we want to increase the difficulty. This will be reflected in the difficulty of the platform layout and the complexity/speed of the rhythmic pattern. In the first level the platform layout will be straightforward, with mainly linear paths and vertically close to each other. Then in the second level we will offer more paths through the platforms, with some harder than the others. The final level has the most complex music and we will be using a 6/8 tempo, which will be harder for the players to recognize the pattern as they will be used to the normal 4/4.

At each level we will also introduce a new mechanic. For example, in the first level we only have moving platforms and appearing/disappearing platforms. Then in the second level we will introduce bouncing platforms and the speed-up/slow-down abilities.

This rise of complexity will be made gradual by also making each level progressively more difficult within themselves. The first few platforms of Level One are easier to get through than the last ones, and this will occur in every level. Since the difficulty is not constant and the player might fail more at the end than at the beginning, we think it is really important to have constant checkpoints so as to not frustrate the player by bringing them back to the beginning every time they die.

For each level we have a theme, and to design a level there are three main tasks: the visuals, the music, and the layout. The first thing we get is the layout of the level. We will have the platforms floating above a scene. At this stage of the level design, we just focus on the floating platforms. We draft the order in which they will appear, what in-game events will occur, what type of platforms appear, where checkpoints are located, and where the platforms are located. In parallel, the music could be worked on to match the desired music genre. Below is an example of a level layout design for level one:
https://drive.google.com/file/d/1D7YIF4zXV5nj_6uqJCS1cqdEru3WZtAc/view?usp=sharing

Once we have the layout, we develop a list of assets and design them around the game's aesthetic and the level's theme. In this stage, we want to style both the floating platforms and the scene they float above. For example, level one is themed as a metropolis. Therefore the scene below will be that of a city with buildings, cars, and streets. The static platforms

will be populated with city-like assets of the proper style. The goal is to relate the assets to the theme and style them based on the low-poly, minimalistic, and fun aesthetic.

6. Game Art

This is a 3D third-person game with minimalistic low-poly graphics and a predominantly pastel color palette. We are looking to have pastels as the base colors for the environment, character, and props. Vibrant colors will be created through shadows and light sources. Instead of using flat colour, we will be using a gradient effect. The aesthetics should feel whimsical, cozy, and fun.

For example, the color palette for the first level is:
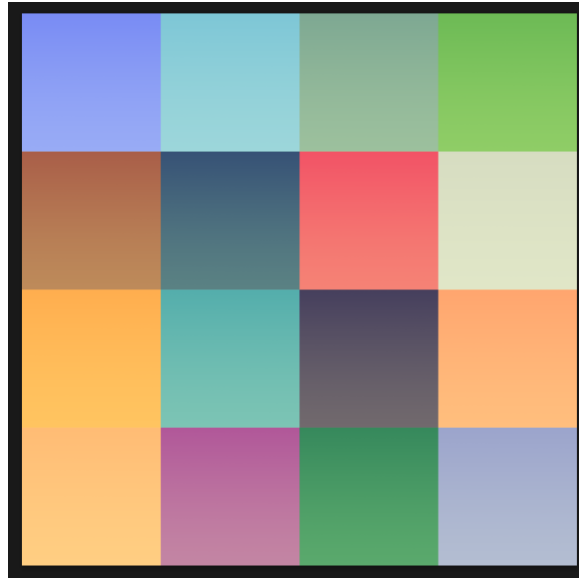
Since it is a low-poly game, we will be balancing the hard-edges and soft-edges of the graphics in the following way: the non-organic elements such as some props and the environment have hard edges, and the organic elements, such as the character and NPCs, have soft edges. There can be exceptions to this rule if stylistically they look better.

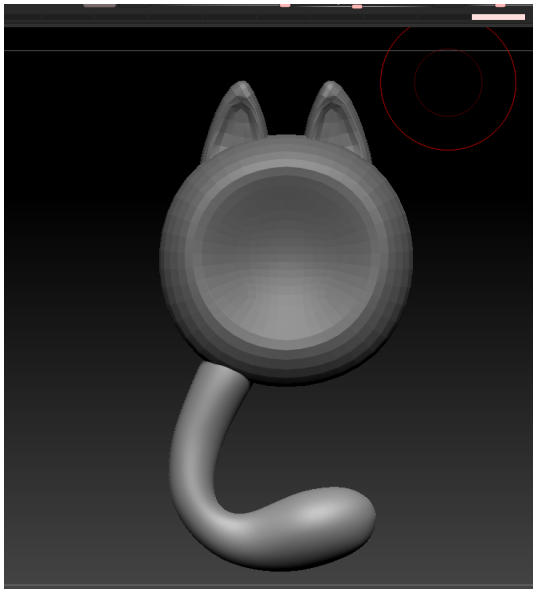Example of tree assets with hard edges:
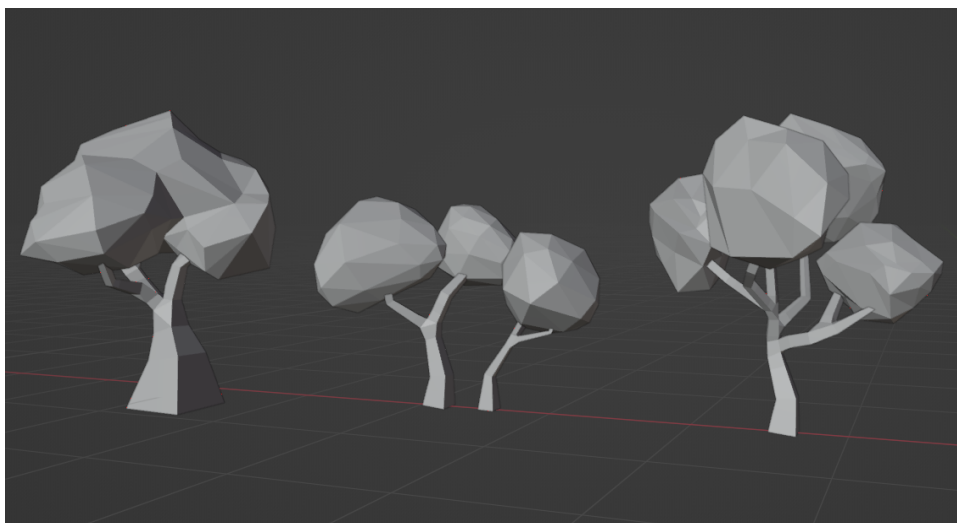
6.1. Assets

The following is the list of assets so far. We are working on the visuals level by level and so these are in referral to level one:
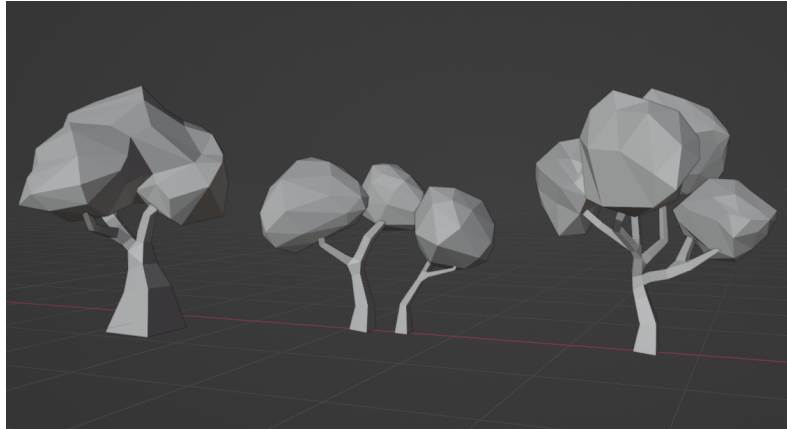
- The cat
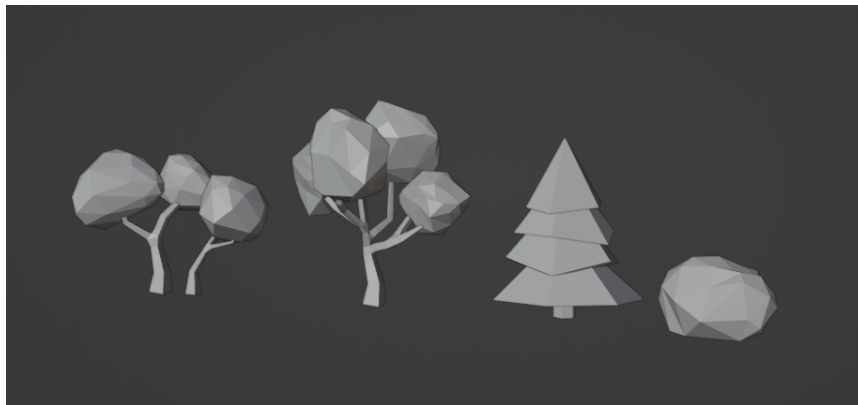 - Main character model

  -
- Tune Guardian
  - Model for the cat's guide. A mystical magical creature.

  -
- Floating platforms
  - These elements (not yet textured) will make up the platforming area of the game. There are different shapes and types in order to design a more interesting layout.

- ○

- Menu Screen
  - ○ Current version of the menu screen

  - ○

- Car prop
  - ○ To use in the background stage of the level, below the floating platforms

  - ○

- Tree and rock props
  - ○ To use as props in the platforms and give city ambience to the floating platform aspect of the level. Can also be used to decorate the cityscape below.
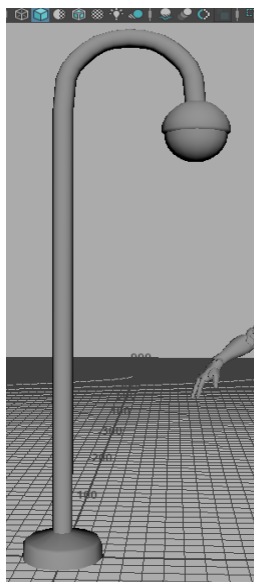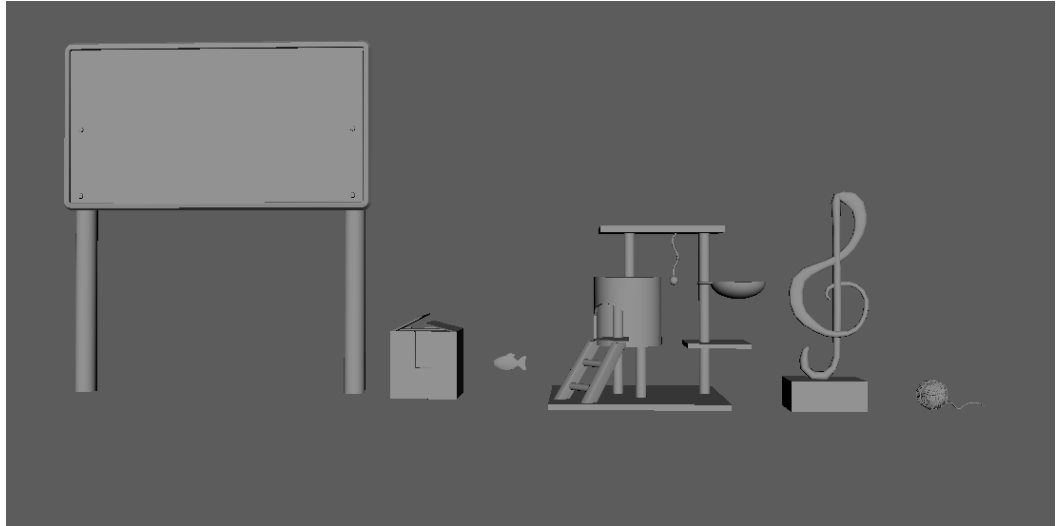
○

○

- Lamp prop
  - To use as decoration in both the floating platforms and the cityscape background.

  ○

- Special props
  - From left to right: Sign to display information to the player such as controls. Cardboard box for the end of the level. Fish treat (collectible. Cat castle to act as checkpoint. Music statue for decoration. Yarn ball (special collectible).

- Sewer gate prop
    - Decoration for the cityscape and for the floating platforms.
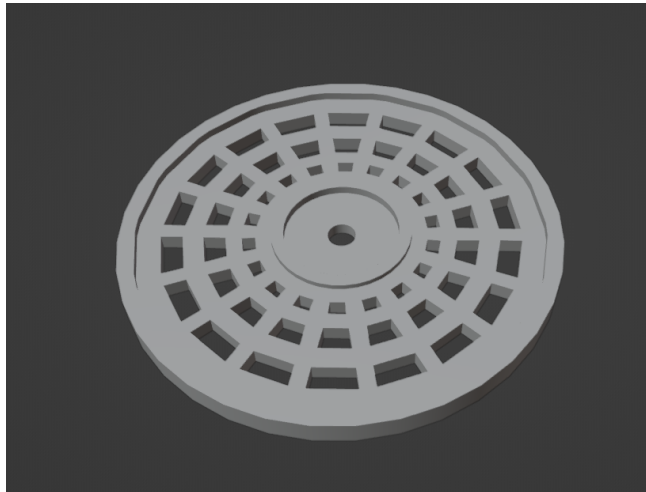
- Gates
    - City decoration. Open and close at the rhythm of the music to be used in the platforms.
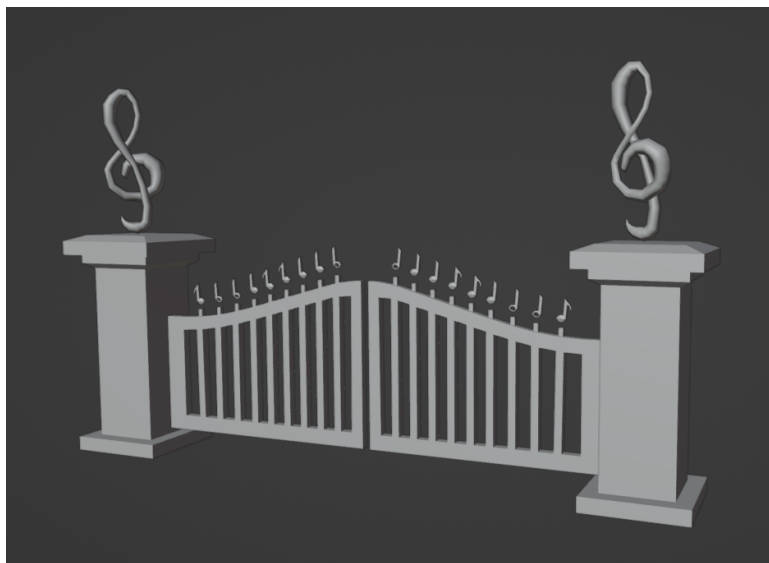
6.2. Music and Sounds

In Meow Tunes, music is what drives each level, and therefore it's the most important aspect of the game. The behaviors of the platforms in the game are triggered by the rhythm of the music. Therefore, each song in the game needs to have a very clear beat that is easy to recognize by the player and that works well visually.

Each level is themed, and the level's tracks should match the aesthetic. The list of level themes and tracks related to it is below:

1. *Level One*: Metropolis theme, we are set in a big city similar to New York city. The music genres we have chosen to relate to this theme are **Hip Hop** and **Jazz**.
2. *Level Two*: Tropical Island theme. The music genre will be **Tropical** music. There will be two variations of this genre. One relaxed version for the introduction of this level, and one that is more upbeat and a bit anxiety-inducing for the chase sequence.
3. *Level Three*: Nightclub theme. We have chosen **EDM** and **disco** music for this level.
4. *Level Four*: Auditorium theme. The tracks in this final level will be **classical** compositions.

Here are some samples of the tracks we have so far:

- Main Theme [Work in progress]
- [TuneTorial](#)
- [Beachy Keen](#) (Tropical)
- [Meowtown Schmoovin'](#) (EDM)
- [Dine with my Feline](#) (Jazz)

As for sound effects, all of them represent one of the interactions the cat has with the game. We want them to feel playful and fun to represent the game ambiance.

Here's a list of the current sound effects:

- Cat Jumps
- Cat Meow
- Cat Purr
- Cat Walk
- Cat Slide
- Cat Hurray (Plays when reaches a checkpoint)
- Cat Oh Noooo (Plays when player fell)
- Victory Jingle

7.   Project Timeline

Task	Due Date	Intended Version	Team
Investigate MIDI alternative for music synchronization in code	15/10/2022	First Level deliverable	Development
Finish developing assets for first level	15/10/2022	First Level deliverable	Art
Finish Jazz and Hip Hop tracks	15/10/2022	First Level deliverable	Music
Code moving platforms	16/10/2022	First Level deliverable	Development
Implement level layout design in unity using assets	18/10/2022	First Level deliverable	Development
Implement level one dialogue	18/10/2022	First Level deliverable	Development
Implement level one cinematics	18/10/2022	First Level deliverable	Development
Fix level one bugs	18/10/2022	First Level deliverable	Development
Sketch level two layout	21/10/2022	Alpha	Development
Sketch level two concepts and asset list	23/10/2022	Alpha	Art
Implement speed-up and slow-down in level two	25/10/2022	Alpha	Development
Finish tropical tracks, fast and slow versions	25/10/2022	Alpha	Music
Implement new platforms for level two	25/10/2022	Alpha	Development

Finish props and platform assets for level two	29/10/2022	Alpha	Art
Finsh other assets and background for level two	31/10/2022	Alpha	Art
Implement level two layout with assets	1/11/2022	Alpha	Development
Implement level two dialogue	1/11/2022	Alpha	Development
Implement level two cinematics	1/11/2022	Alpha	Development
Fix level two bugs	1/11/2022	Alpha	Development
Sketch level three layout	4/11/2022	Beta	Development
Sketch level three concepts and asset list	6/11/2022	Beta	Art
Finish EDM and disco tracks, fast and slow versions	8/11/2022	Beta	Music
Implement new level three platforms	8/11/2022	Beta	Development
Finish props and platform assets for level three	12/11/2022	Beta	Art
Finish other assets and background for level three	14/11/2022	Beta	Art
Implement level three layout with assets	15/11/2022	Beta	Development
Implement level three dialogue	15/11/2022	Beta	Development
Implement level three cinematics	15/11/2022	Beta	Development

Fix level three bugs	15/11/2022	Beta	Development
Sketch level four layout	18/11/2022	Beta	Development
Sketch level four concepts and asset list	20/11/2022	Beta	Art
Implement menu screen with level map	22/11/2022	Beta	Development
Polish levels 1-3	22/11/2022	Beta	Development
Finish classical tracks, fast and slow versions	26/11/2022	Final Presentation	Music
Implement new level four platforms	26/11/2022	Final Presentation	Development
Finish basic props and platform assets for level four	3/12/2022	Final Presentation	Art
Finish other assets and background for level four	5/12/2022	Final Presentation	Art
Implement level four layout with assets	6/12/2022	Final Presentation	Development
Implement level four dialogue	6/12/2022	Final Presentation	Development
Implement level four cinematics	6/12/2022	Final Presentation	Development
Fix level four bugs	6/12/2022	Final Presentation	Development
Polish whole game	6/12/2022	Final Presentation	Development
Add credits	6/12/2022	Final Presentation	Development