

# BEEPBEEP!

"Food is on the way!"



A HACH Studios Game  
Hunter, Anqi, Cor, Haotian



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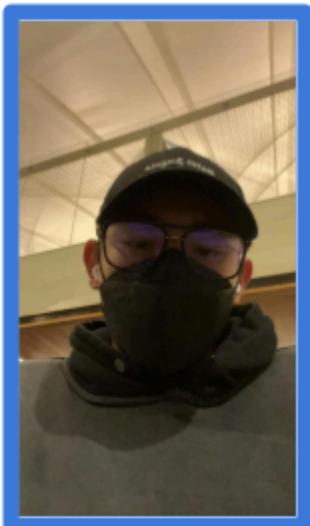
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## Section 1 - Game Design Team

### Haotian Wang:



Haotian is a passionate gamer who often finds himself immersed in MOBA titles like League of Legends, as well as open-world adventures such as the latest Pokémon games on Nintendo Switch and The Legend of Zelda series. He's no stranger to the thrill of competition and the sense of exploration these games offer.

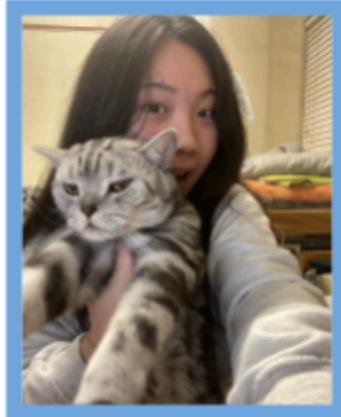
In designing a game for this class, Haotian's goal is to create an experience that caters to players who crave a challenge and enjoy going head-to-head with others in a straightforward, yet captivating format. As a fellow gaming enthusiast, Haotian understands this target audience's mindset, as he also appreciates games that inspire self-improvement and friendly rivalry.

When it comes to working with team members whose gaming interests and preferences differ from his own, Haotian is all in. He's confident that by adapting his ideas to incorporate their perspectives, they can level up their collaboration and forge an even more epic and groundbreaking game together.

### Anqi Wu:

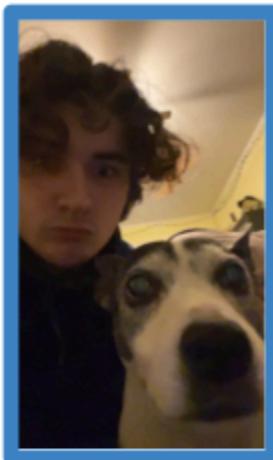
Anqi has spent considerable time playing diverse games. One of her go-to games is Honor of Kings, a MOBA genre title that she engages with on her mobile device.

As she designs a game in this class, Anqi's objective is to cater to "Explorers," players who appreciate pushing the boundaries of the in-game narrative by activating events and discovering hidden elements. Much like the target audience, Anqi is a real-life explorer, always curious to try new things and see the outcomes of her actions.



Anqi is optimistic about her ability to collaborate effectively with team members whose gaming interests and player preferences may diverge from her own. She believes that by combining their varied ideas, they can create a game that appeals to a wider spectrum of players. With a laid-back attitude, Anqi is prepared to adjust her thought process to include her teammates' perspectives, ultimately contributing to the development of a more compelling and innovative gaming experience.

## Cor Jacobs:



Cor is a big fan of the intricate combat and engaging storytelling found in "Soulslike" RPG action games, like Dark Souls III on PC. They also enjoy collectible card games such as Magic: The Gathering, Legends of Runeterra, and Hearthstone, which focus on strategic deckbuilding and clever gameplay across platforms like PC, mobile, and tabletop.

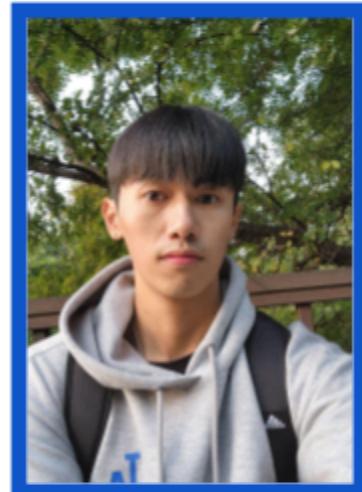
As they design a game in this class, Cor wants to create an experience that appeals to both casual and serious players. They picture a game that's easygoing but still offers a challenge for those who seek it. This approach aligns with Cor's own gaming preferences, as they enjoy games that cater to different playstyles.

Feeling confident about their ability to collaborate effectively, Cor is ready to work with team members, even if their game interests and player preferences are different from their own. Thanks to Cor's extensive experience as both a casual and competitive player, they are comfortable adapting to various project requirements and working with people who have diverse gaming interests. This adaptability will allow them to contribute meaningfully to the development of a unique and enjoyable gaming experience.

## Hunter Leong:

Hunter frequently engages in a variety of games, both physical and digital. As a member of the varsity golf team, he regularly plays golf, which falls under the sports genre. In terms of video games, Hunter used to play Clash Royale quite often. This mobile game is a real-time strategy (RTS) game that involves 1v1 battles and fosters a competitive spirit.

In designing his game, Hunter targets competitive players who enjoy social interaction and friendly rivalry. He relates to this audience, valuing both competition and camaraderie in gaming experiences.



Hunter is confident in his ability to work effectively with team members, regardless of whether their game interests and player preferences align. He is good at providing mental support to other team members, particularly by showing agreement with their opinions and acknowledging their hard work.

## **Section 2 - Gameplay Overview**

### **Game Concept:**

HACH has developed Beep Beep, a game that allows players to assume the role of a food delivery driver. The goal of the game is to, as the college-aged delivery driver struggling to make ends meet, make the objective amount of money in each level by picking up food and delivering it to the correct location. This 3D game features a third-person perspective, with the camera positioned behind the player character and the motorcycle that they operate. The game falls within the role-playing genre, as players simulate the work of a delivery driver, and the time limit aspect places the game within the time trial category. Overall, our game is a casual, time trial based game with an emphasis on driving and resource management.

The delivery driver is the main character that players control in the game. At the beginning of each level, the driver spawns at a designated location and sets out to locate and deliver pizza boxes to specific destinations. Another key character is the patrol officer, who patrols a designated area on each level searching for the player. On the other hand, our game includes power-ups which can be collided with in order to gain a bonus, such as speed or fuel, thus encouraging the player to drive towards them. Our game offers an engaging environment that includes hidden easter eggs for players to discover while completing their tasks, along with multiple factors that influence how players choose to navigate it.

### **Player Objective and Obstacles:**

The primary objective of Beep Beep is to complete a certain amount of deliveries within a set time limit, all while remaining careful not to drop to 0% fuel. When completing a delivery, the player will earn a flat amount of dollars, which is shown on the HUD. Upon reaching the objective for that particular level (in context of the game, the main character's work day), the level is considered cleared, and the player may move on to the next level.

The primary obstacles in the game are fuel depletion and police officer patrols. Fuel consumption is a significant obstacle, as running out of gas results in a loss for the player. We designed the vehicle to have limited fuel and consume it quickly, requiring the player to visit the gas station to refuel every once in a while. Players must remain aware of their fuel levels to ensure they have enough gas to reach a gas station from their current location. Thus, the constant loss of gas while driving is an obstacle to the player's victory, in the form of an essential resource that the player must constantly manage.

The police patrol, on the other hand, poses an obstacle to the player in terms of time. Players can easily identify patrol officers by their distinctive appearance as either a policeman or patrol car. Police will patrol these areas, and if the player fails to stop at a stop sign within the designated patrol zone, they will be pulled over, resulting in a 5 or 10 second pause in their

movement based on the level they are on. This disrupts the player's objective by taking away time that they would ordinarily spend completing their deliveries.

In addition, there are also randomly spawned physical obstacles that impede the player's path in some of the levels. This causes the player to make informed decisions about how to navigate as they observe and register obstacles in the field of view. These obstacles can be road construction, stopped traffic, and other such impediments that might appear in the street.

### **Player Activities:**

The primary method through which the player interacts with the game is the usage of the WASD keys in order to move the motorcycle driven by the player character. In doing so, this allows the player to interact with the rest of the game, by driving the player character to different locations where various events and interactions occur with the environment and objectives. The mouse is also used in the game but outside of gameplay, as moving and clicking with the mouse allows the player to navigate the start menu and pause menu UI.

Considering the game's objectives and premise, the primary mechanic of Beep Beep is driving. Using W accelerates the player, moving them forward and increasing their speed, but consuming gas as they do so. S stops the player's forward momentum and begins to move them backwards. A and D steer the player towards either side, relative to whether they are moving forwards or backwards. By clicking the space key, the player can be stopped immediately. Using these driving tools, the player is able to reach high speeds while navigating the roads, and make impressive and exhilarating moves such as high-speed turns while searching for pickup and dropoff points.

While the driving of the game makes for a liberating and fast-paced experience, the secondary mechanic of the game is very much informed by the primary mechanic – this is the mechanic of navigation. To explain it in a sentence, navigation, in this context, is the constant state of receiving and processing information around the player in order to make informed decisions about where to move next, and how to make that movement. This reflects the real-life experience and action of navigation, where we, as drivers of cars, process stimuli around us to decide where to go next. These days, this is most commonly a GPS app on our phones advising us of the fastest routes and any abnormal road conditions. That said, there are still things on the road that tell us where to go. There may be road work indicating a detour, traffic indicating that our current path may not be the fastest one, and stop signs which tell us stopping is recommended on this path at this point in the interest of safety.

Players of Beep Beep interact with the game's secondary mechanic of navigation in a very similar way. The player may see an obstacle up ahead, prompting them to take the next left turn. They may see a speed powerup to the street on their right, prompting them to take the next

right for a speed boost. The player may need to stop for gas, and thus will take a path to their objective with the gas station on the way. Moreover, players can utilize the minimap, similar to a GPS, to locate the delivery pick-up and drop-off points.

Objectives and all other objects of interest inform the player's movement the most, and thus are highlighted across the map with glowing light. The pizza/food pickup objective is highlighted with a red circle, and is picked up when the player's vehicle collides with it. The dropoff destination is highlighted with a similar green glowing circle, which awards the player with a completed delivery and money towards the objective when the player makes contact with it while holding a pizza. The gas station area is highlighted with a glowing blue square, allowing players to quickly locate it when in need of fuel. Powerups, both speed boosts and fuel canisters, are highlighted with a yellow glow. These are the primary points of interaction, which is why these particle effects are implemented to ensure the player is proactively assessing the situation and evaluating their navigation choices at all times.

## **Levels:**

HACH designed four levels for the game, with level 1 serving as a tutorial level and levels 2, 3, and 4 featuring progressively increasing difficulty. The player completes deliveries in different parts of the city in each level. There are differences in the props, obstacles, weather, road conditions, city size and time of day that may change how the player navigates the map, and how their vehicle operates in those specific conditions.

For example, level 1 has a relatively smaller map and takes place at night in a smaller neighborhood with well-marked, wide, and paved streets as well as smaller back streets and alleys. The pizza spawning circles will be more conspicuous in the dark, as they emit a glow that penetrates buildings, making them easier to detect during nighttime scenes. Level 2 introduces police obstacles, power-ups, and features more open, rough roads that allow the player to drive faster, especially since it takes place during the day. However, some corners have rough paving that may throw off the driver on turns. Level 3 features a larger map, fewer power-ups, more police obstacles, and longer pullover times. Levels 3 and 4 incorporate weather conditions, with level 3 presenting slippery roads due to rain, causing the vehicle to move faster and making it easier to crash on curbs, slowing down the delivery process. Level 4 introduces snow, resulting in more challenging vehicle navigation due to reduced traction and movement speed as the player completes their deliveries. Moreover, the city layout in the last level will have fewer crossroads, and the player will encounter bumps on some roads to increase the difficulty in driving.

As the player progresses through the levels, they will need to complete more deliveries within a reasonable time limit that HACH has tested, ensuring not only an increase in difficulty but also maintaining the possibility for players to pass each level.

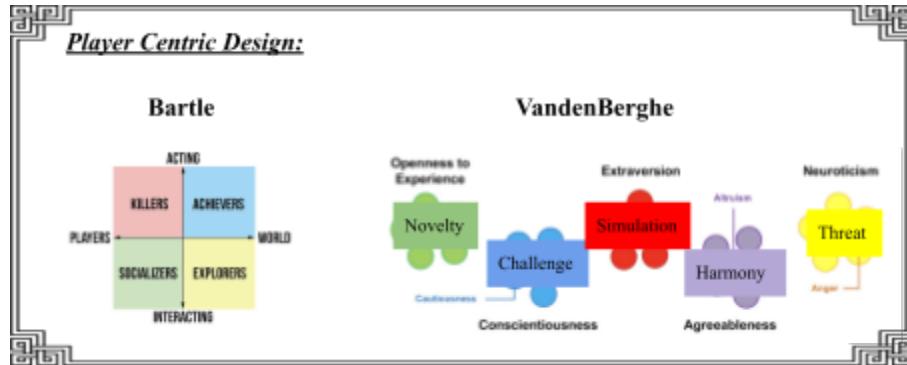
### **Winning and Losing Condition:**

The requirements for each level are as follows: Level 1 requires earning 10 money in 5 minutes, Level 2 requires earning 25 money in 5 minutes, Level 3 requires earning 35 money in 5 minutes, and Level 4 requires earning 50 money in 10 minutes. Each delivery earns the player 5 money.

The winning condition in Beep Beep! is simple: if the player reaches the required amount of money by completing the necessary number of deliveries within the given time, they will win. There are two losing conditions in the game: failing to obtain the desired amount of money within the time limit, or running out of fuel while deliveries are still pending. In either scenario, a corresponding message will appear, and the player can choose to return to the main menu or restart the level. When the restart button is clicked, additional drop-off or pick-up points may be generated on the map, which are designed to slightly reduce the level's difficulty by providing the player with the ability to create a more efficient path with the knowledge of the next delivery destination in mind. This adjustment ensures that the player does not get stuck on the same level and can continue progressing in the game.

## Section 3 - Player Base

The player base for our delivery game is likely to encompass two primary categories from Bartle's Player Centric Design framework: explorers and achievers. The game will also appeal to players who value three characteristic traits from VandenBerghe's model: novelty, challenge, and stimulation.



Explorers, interested in examining, experimenting, and mastering game mechanics, will be drawn to our game due to the numerous intriguing props and hidden easter eggs placed throughout the levels. These elements encourage players to delve into the game environment and uncover secrets. The players who identify themselves as achievers, motivated by competition and challenge, will appreciate the game's tight time limits and escalating difficulty, continuously striving for improvement and mastery.

Players who value novelty will find the game engaging due to its emphasis on openness to experience and risk, and enjoy the game's playful setting as a backdrop to the unexpected challenges that the game presents. A variety of adventures and unexpected encounters, like sudden police appearances, maintain player interest. Challenge-oriented players will enjoy the game's increasing difficulty and resource management elements, immersing themselves in developing winning strategies. The game also caters to players who seek stimulation, characterized by extraversion, energetic, assertive, and sociable traits. Our dynamic gameplay offers constant excitement, keeping players engaged and motivated.

In terms of culture and identity, the player base could come from various backgrounds. They are likely to be individuals who enjoy immersive and realistic games and may be interested in the delivery industry, transportation, or related fields. Our intended users may not prefer games that are too straightforward or lack hidden aspects to discover. They may also not be fond of long-term, slow-paced games that require extended periods to experience a sense of accomplishment. In short, Beep Beep is crafted to thrill and captivate players who identify with the explorer and achiever categories from Bartle's Player Centric Design, as well as those who appreciate novelty, challenge, and stimulation based on VandenBerghe's model.

## Section 4 - Comparable Games

In order to grasp key elements of Beep Beep, we can look to some commonly known industry staples that consumers may be familiar with. Three games that share elements of Beep Beep are Grand Theft Auto V, Mario Kart, and Subway Surfers. While each game, including Beep Beep, are wonderfully unique experiences in their own right, it is certainly worth exploring each of these games in order to grasp key aspects of Beep Beep!.

### Mario Kart Wii:

Mario Kart is undoubtedly one of most well-known racing games in the industry. The game features many beloved characters from the Super Mario franchise going head-to-head in F1-style races with beautifully rendered racetracks as a backdrop to the competitive racing action. An especially popular version of Mario Kart is its rendition for the Nintendo Wii console, so let us examine some gameplay screenshots and features that may draw similarities to Beep Beep!



While the genre of racing games is somewhat different from Beep Beep, there are several effective gameplay elements that can be found in both. The mechanical similarities between the two games are abundantly clear, with driving as the fundamental gameplay mechanic. The player must accelerate, steer, and turn efficiently and fluidly in both games to succeed. Navigation is another essential gameplay element that both games share. The ability to predict and make quick decisions about road navigation is critical to achieving victory in both games.

Another shared mechanic between Beep Beep! and Mario Kart Wii is the use of collectible power-ups that provide an in-game advantage to the player in order to incentivize

certain paths of travel. In the second screenshot of Mario Kart above, you can observe a player approaching the colorful mystery box power up. In Mario Kart Wii, players can collect items such as the mushroom, which increases speed, or the red shell, which homes in on and stuns opponents. In Beep Beep!, players can collect power-ups like the speed boost, which increases the player's speed, or the fuel replenishment powerup, both of which can incentivize the player to head towards them.

The UI in both games is expressly designed to efficiently communicate information to the player. Both games use a simplified minimap in the bottom right corner of the screen, allowing the player to easily navigate the area using simple icons that don't create much noise. An indicator for time remaining is also present in both games, as well as indicators for essential information related to the objective, such as the player's position in the race in Mario Kart, or the number of deliveries completed in Beep Beep!.

Finally, in terms of thematic similarities, both games use an art style that is minimalistic, cartoony, animated, and colorful, conducive to environments and levels that are playful and easy on the eyes. These decisions in terms of thematics and art style also allow both games to maintain a lighthearted and fun atmosphere while still providing challenging gameplay, creating an experience that is appealing to players of all ages.

Overall, while Beep Beep! and Mario Kart Wii belong to different game genres, they share several gameplay elements and design choices that create a similar player experience. The mechanical similarities in driving and navigation, the use of power-ups, and the efficient UI design, as well as the thematic similarities in art style, make Beep Beep! a game that Mario Kart fans would likely enjoy.

## **Grand Theft Auto: V**

While intuitively it may seem like the beloved Rockstar Studios' Grand Theft Auto: V would be strikingly different from Beep Beep! due to the IP's graphic and explicit nature, there is actually a surprising amount of similarities to be drawn between the two player experiences.



Again, the primary similarities between the two games exist in the shared mechanics of driving and vehicle operation, as well as navigation. While driving in GTA can easily be interpreted as a secondary priority to the rest of the game's activities, this couldn't be further from the truth. Rockstar spent a great deal of time making GTA's driving mechanics as fleshed out and realistic as possible, which is why ten years after its release it remains an extremely popular platform for players to collect in-game renditions of their favorite real-life vehicles and drive them around an urban environment. While Beep Beep! is not an open world game and presents a far more linear objective, both games have a focus on the action of driving, and making it as enjoyable as possible for the player. In the case of driving as a primary mechanic, both games aim to capture the real-life feeling and adrenaline of going for a joy ride.

If we delve deeper into the many activities that GTA V has to offer, racing is an incredibly popular activity for players. In the leftmost screenshot above, several players are navigating their way through a carefully designed racetrack in their desired in-game vehicles, each with the goal of getting the fastest time by racing against the clock and each other. This element of competition is present in both games. Despite the fact that Beep Beep! is a single player experience, we found during our playtesting and demo events that players enjoyed learning how much time they had remaining after completing a level, and took pride in achieving the fastest time amongst the group. Since both player experiences lean into the nature of a time trial, a natural competitive edge is created, adding to the game's thrill and excitement as the clock ticks down.

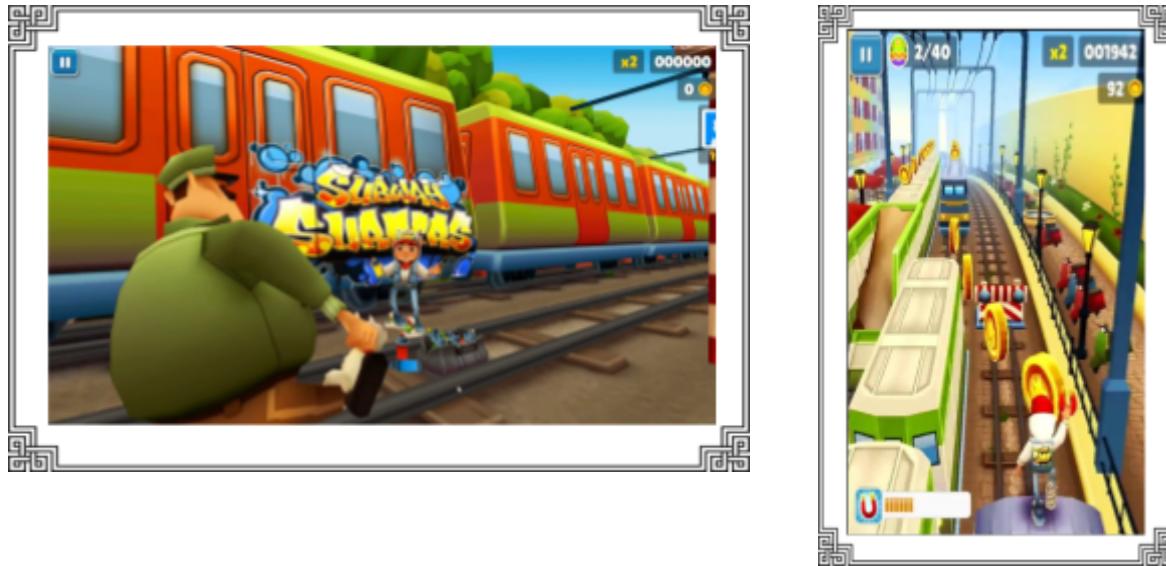
Furthermore, GTA and Beep Beep! share a similar notion of role-playing. GTA can primarily be characterized as a roleplaying game, and while the activities associated with this roleplaying are often illicit and dubious in nature, there are also moments of capturing ordinary life that are present, and it is these moments which reflect Beep Beep!'s story basis. Take, for example, the mission in GTA V's main story where one of the main characters named Trevor

works as a dockworker (see rightmost figure above). This mission entails operating heavy machinery, such as cranes and forklifts, to accomplish tasks that would align with the character's own motivation to complete their job's tasks in order to earn money. The same is true in Beep Beep!, where the player assumes the role of a delivery driver who also wants to complete their chosen profession's tasks, allowing the player to truly resonate with the character that they are playing as since they are given a reason to go from point A to point B.

Despite their apparent differences, GTA has several key elements that contribute to the game's widely accepted masterpiece status; GTA's driving, competition, and roleplaying elements are all incredibly effective game design decisions that are also at play in Beep Beep!. While it is not likely that the audiences of these two games would overlap in a significant way, fans of GTA are sure to find something to enjoy in Beep Beep!'s gameplay.

## **Subway Surfers**

In the contemporary game and pop culture scene, Subway Surfers is a game that immediately comes to mind in the conversation of prolific and immensely popular mobile games. While such a game is inherently different from Beep Beep! due to the differences in platform and gameplay, there still exist similarities between SYBO Games' massive hit and our own product.



As is the case with Mario Kart, the most obvious similarity between the two games is thematics. Both employ the same simplistic and cartoony style that creates colorful and exuberant environments that players of all ages will find attractive.

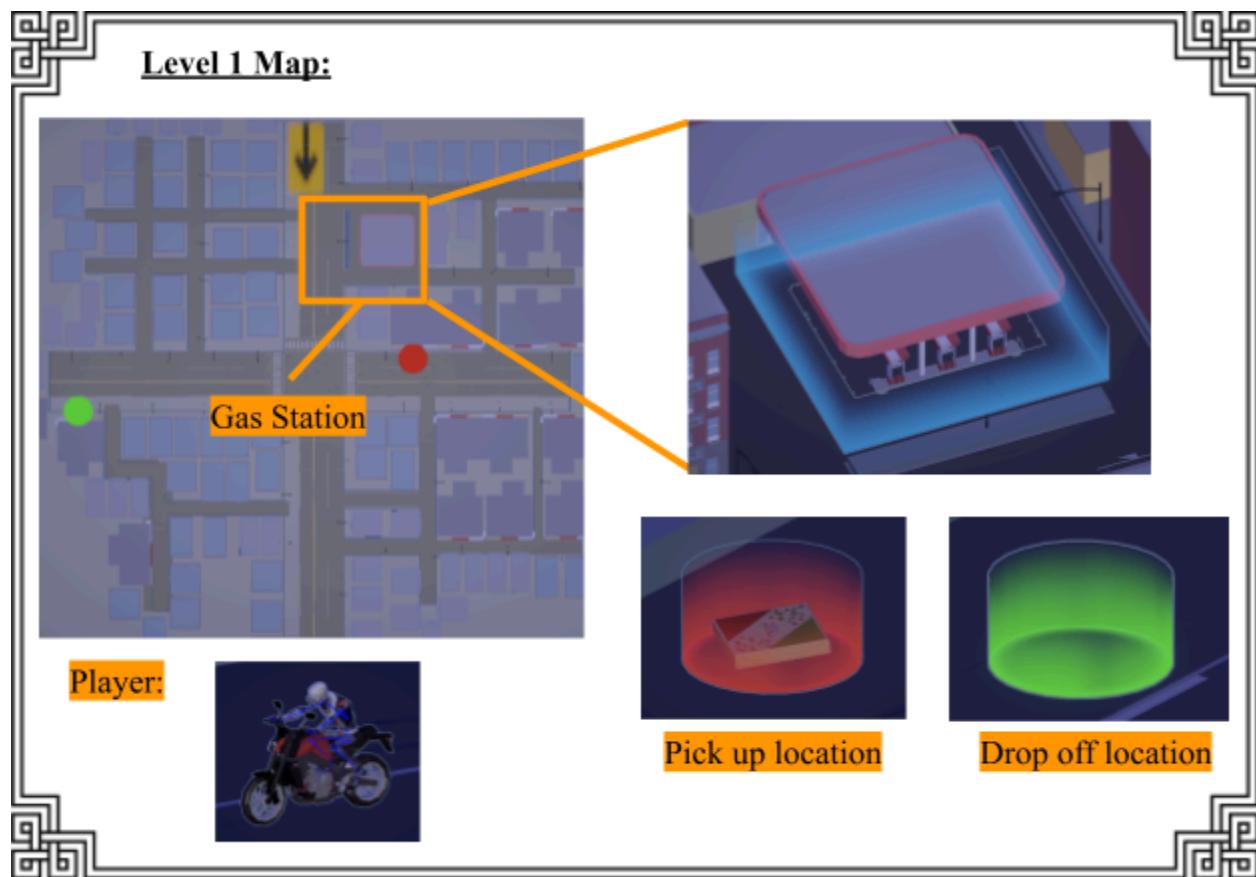
Despite fundamental gameplay differences stemming from different platforms and genres, the games are not devoid of mechanical similarities. In Subway Surfers, the primary game mechanic is the avoidance of obstacles and the collection of coins and power-ups whilst constantly and invariably moving forwards (see rightmost figure above). Many of these, such as powerups and obstacles, are mechanics that serve as secondary factors in Beep Beep!. The main mechanical similarity between the two games comes from the gameplay experience produced by these core mechanics: both games emphasize fast-paced and reflex-based gameplay that rewards both quick decision making as well as planning ahead based on what game information is readily available.

Finally, a very important similarity and game element is the dynamic between the character and the world surrounding them. Both Beep Beep! and Subway Surfers represent a young character who clearly has some kind of adversarial relationship with an authority figure. In Beep Beep!, this is the police, who aim to stop the player as they aim to complete their goal. Similarly, the security guard in Subway Surfers chases the main character after they are caught doing graffiti. Seeing as the player is meant to resonate with and sympathize with the main character, both games bring into question real-life dynamics between people and authority, especially when those dynamics are inherently adversarial. Questions may arise such as, why are these authority figures so inherently hostile? In the case of Subway Surfers, how have we created an environment where self-expression can be construed as harmful or unnecessary? While neither game holds social commentary to be its primary focus, both games use symbols of these real-life social conditions that may prompt the player to consider their assumptions and beliefs about their society.

## Section 5 - Game Map and Navigation

### Mapping:

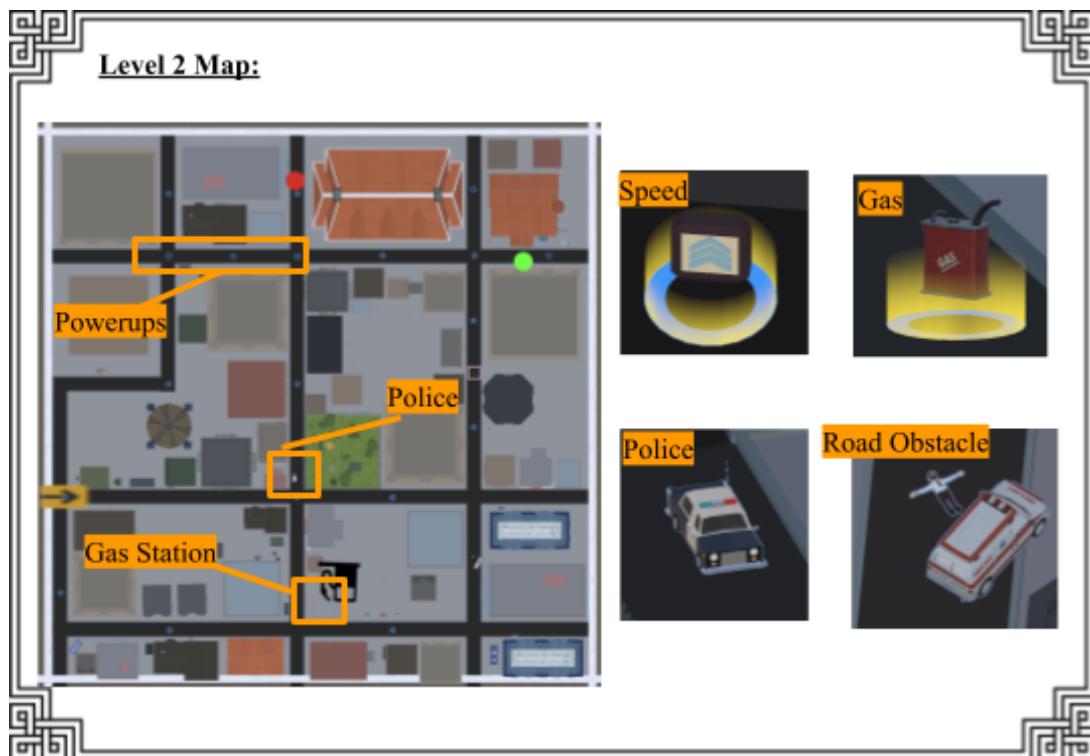
In the Level 1 Map, the player is introduced to the key elements of Beep Beep!. The yellow and black arrow represents the player's current position (placed at the spawn point in the figure below), the red dot indicates the pickup location, and the green dot marks the drop-off destination. The pickup and drop-off points are randomly generated, and are spawned only on roads to prevent issues with inaccessible deliveries inside buildings. The dark gray roads are designated for the player to drive on, and driving on sidewalks or through buildings is not allowed. The player is also introduced to the first major obstacle of the game aside from the time limit: the gas resource system. In order to restore their gas, the player is introduced to the functionality of the gas station in level 1. When the player approaches the gas station, they will see a glowing blue area, and any time spent inside this area will increase their vehicle's fuel. They can monitor the gas tank on the HUD filling up as this happens.



Level 2 introduces a new, larger map and additional gameplay elements that inform the player's decisions. These include power-ups, road obstacles, and police patrols. Two types of power-ups are present: fuel and speed, which can be identified by the figures provided below. The fuel power-up adds 25 units ( $\frac{1}{4}$  total) of fuel to the player's vehicle, while the speed power-up increases the current speed by 1.5 times, lasting for 5 seconds. Road obstacles randomly appear in the middle of intersections during game start, forcing the player to find alternative routes if they encounter them. This level features a total of 18 power-ups and 2 road obstacles, with a unique distribution of spawn locations each time the level is played.

A police car patrols in a loop in Level 2. If the player enters the car's detection range, a message will appear indicating that they have been subject to a traffic stop, causing their movement to freeze for 5 seconds. After the message disappears, there will be a 10-second cooldown period, allowing the player to escape the area without being caught again during this timeframe.

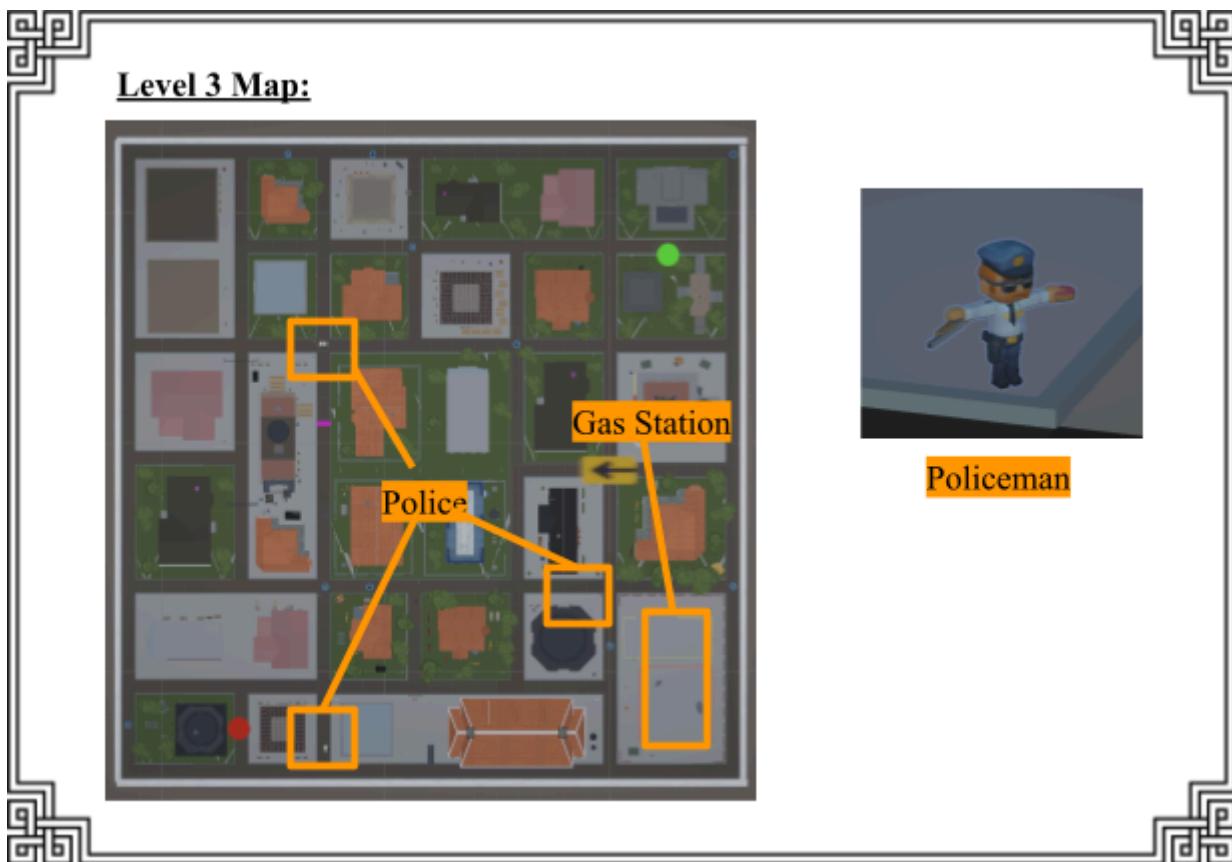
Each of these elements adds new factors to Beep Beep! for the player to consider as they make decisions about where to go, and how to get there. Powerups may encourage the player to take a route that contains more speed boosts, or may choose to go down a road with more fuel restores if they are running low on gas and are far away from the gas station. In terms of the police, the player may recall where the patrol is located, and may go around or strategically wait for them to pass before proceeding.



To increase the level difficulty, Level 3 adds 2 more police patrols and spawns fewer power-ups, with one of the police taking the form of a police officer rather than a police car. This police officer walks around a building and will be challenging to detect due to the presence of multiple humanoid NPCs. In this level, the player spawns in a location where the police officer is nearby, so if the player does not pay enough attention to the environment, they will get caught immediately. When the player gets caught, they will be stopped for 10 seconds followed by a 10-second cooldown period. Compared to the previous level, this one has fewer power-ups, with only 10 available.

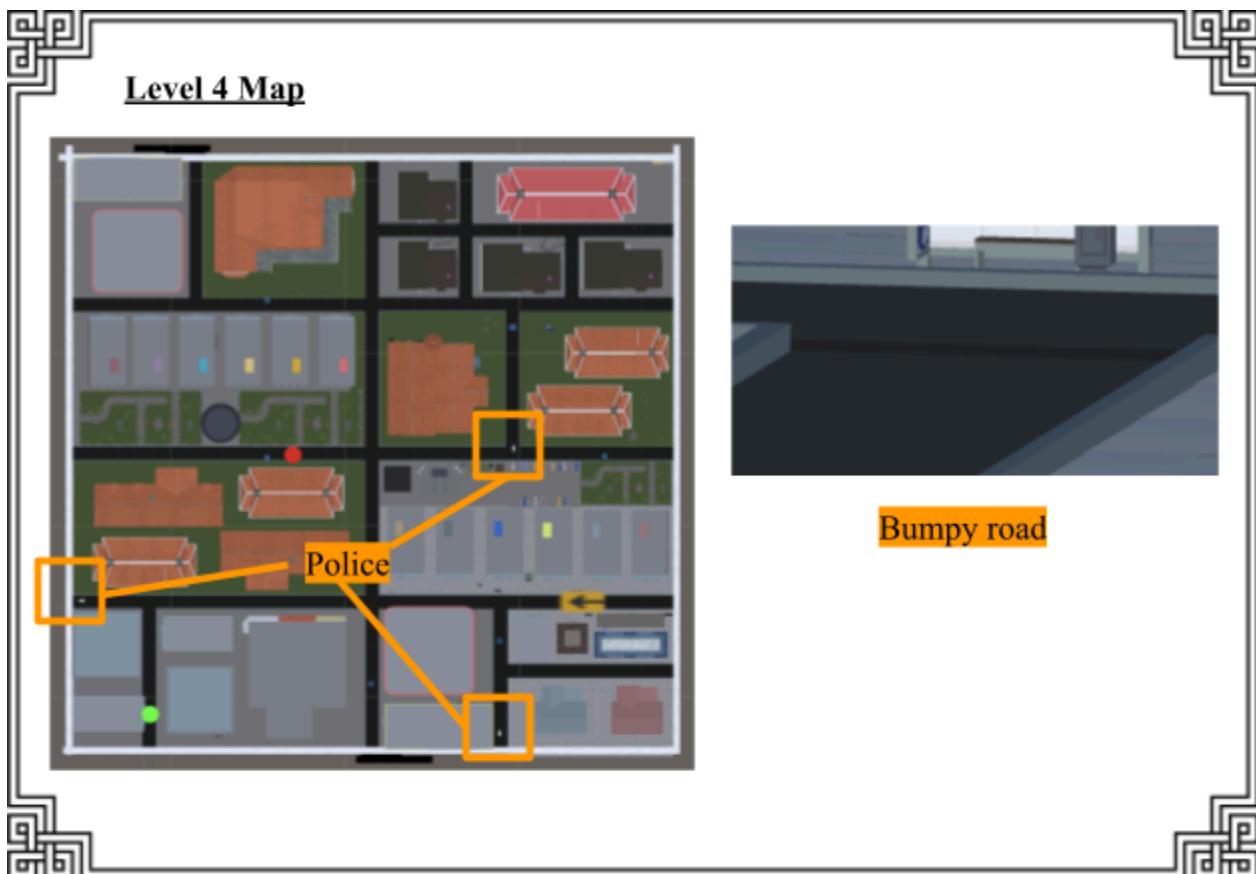
The map size in Level 3 is larger than in Level 2, featuring more intersections to allow deliveries to spawn in various locations and at greater distances. The gas station is strategically placed in the corner of the city, making it less accessible. If players want to reach the opposite corner of the city to complete a delivery, they must be mindful of their fuel level before departing, especially considering the reduced amount of gas power ups.

Level 3 takes the elements introduced in Level 2 and challenges the player to develop innovative strategies regarding the police and power up mechanics instead of simply making split second decisions.



In the fourth and final level of the game, the map design features fewer intersections and only 7 power-ups, but adds 3 police patrols at some of the main intersections to increase the level's difficulty. Some potential delivery pick-up and drop-off points in this level will be located in blind alleys with police cars driving through the intersections, requiring players to both strategize and remain flexible to complete the deliveries successfully. The threat of gas depletion is especially relevant in this level, considering that the map is larger than any of the previous levels, requiring the player to strategically design their routes around the gas station or risk receiving a loss due to fuel depletion. Furthermore, some roads in this level have bumpy terrain, requiring the player to navigate skillfully, especially on turns and corners.

Level 4 and its map represent a fitting final challenge for Beep Beep! players, and is especially exciting for those who came seeking a challenge. The player must apply not only in-game skills that they may have developed in previous levels, but knowledge about real-life navigation and driving in order to create the most efficient course of action needed to achieve victory.



## Viewport



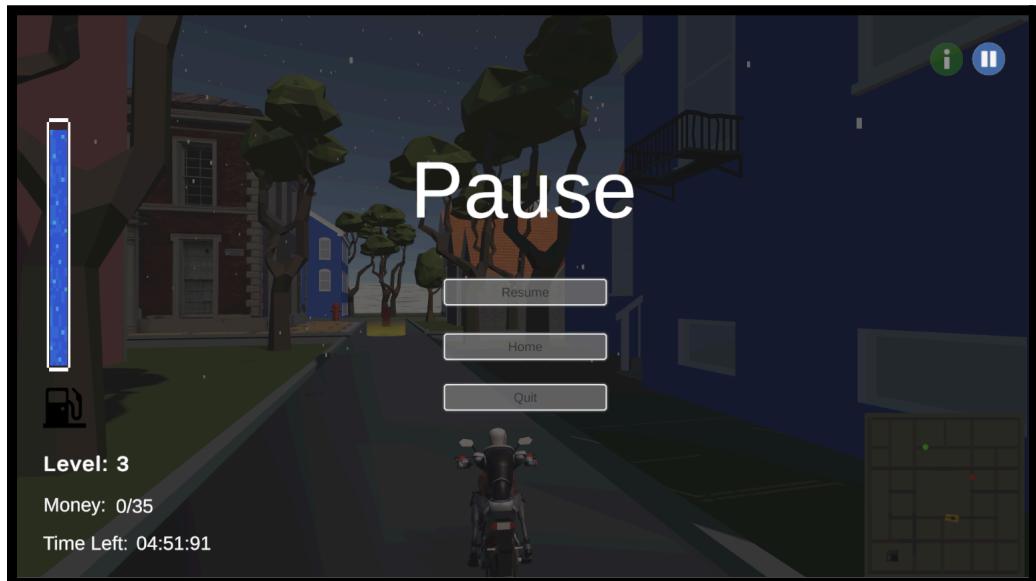
In the player's viewport, they will see a blue bar representing the gas tank on the left-hand side of the screen, which shrinks as the player accelerates the vehicle. At the bottom left corner of the screen, a display shows the current level, the amount of money earned so far, the targeted amount of money, and a countdown timer indicating the time remaining until the end of the game.

The player will also see themselves riding a motorcycle in the center of the screen. In the bottom right corner of the screen, there is a minimap displaying the layout of the current level, which includes the pick-up point (red dot), the drop-off point (green dot), the player's location (black arrow), and the gas station. This minimap helps players avoid getting lost in the game and prevents frustration from not finding the delivery locations.

In the top right corner, there are two buttons: the green button is the information button, and the blue button is the pause button. The information button allows the player to view the objectives and a description of any changed game elements in the level. It appears at the very beginning of the level and can be accessed again if the player wants to review the information. When the player clicks the information button, the pause button will be disabled to avoid message overlapping, the timer will stop, and the information panel will appear. Here is level 3's panel for example:



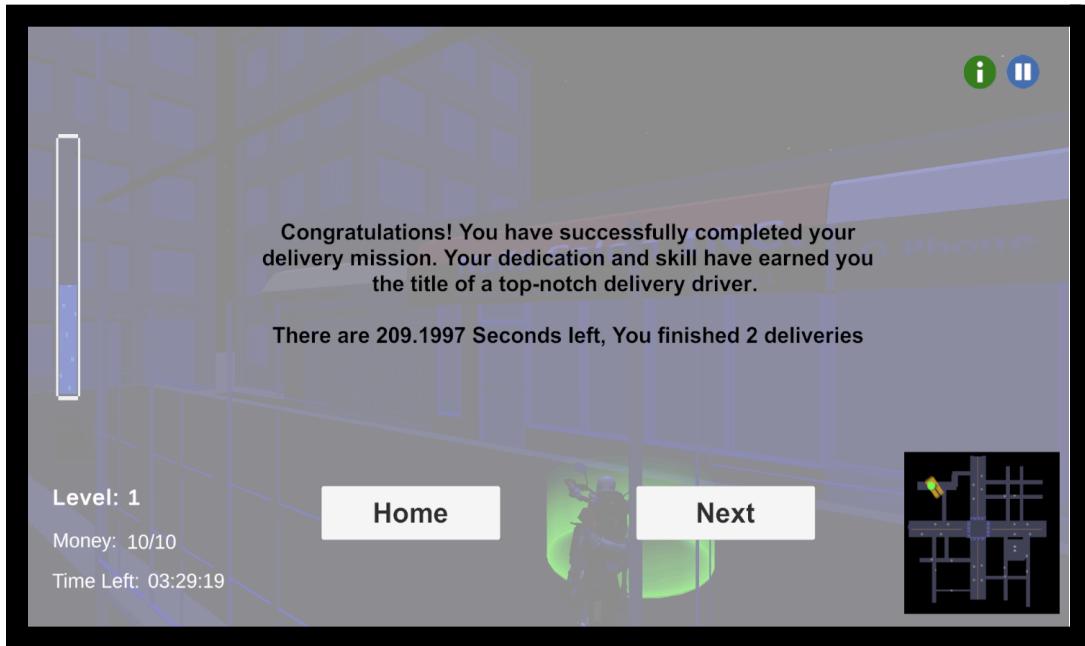
The pause button will trigger the pause menu, allowing the player to choose between resuming the game, quitting the game, or returning to the main menu. When the player clicks the pause button, the information button will be disabled, the timer will stop, and the following screen will appear:



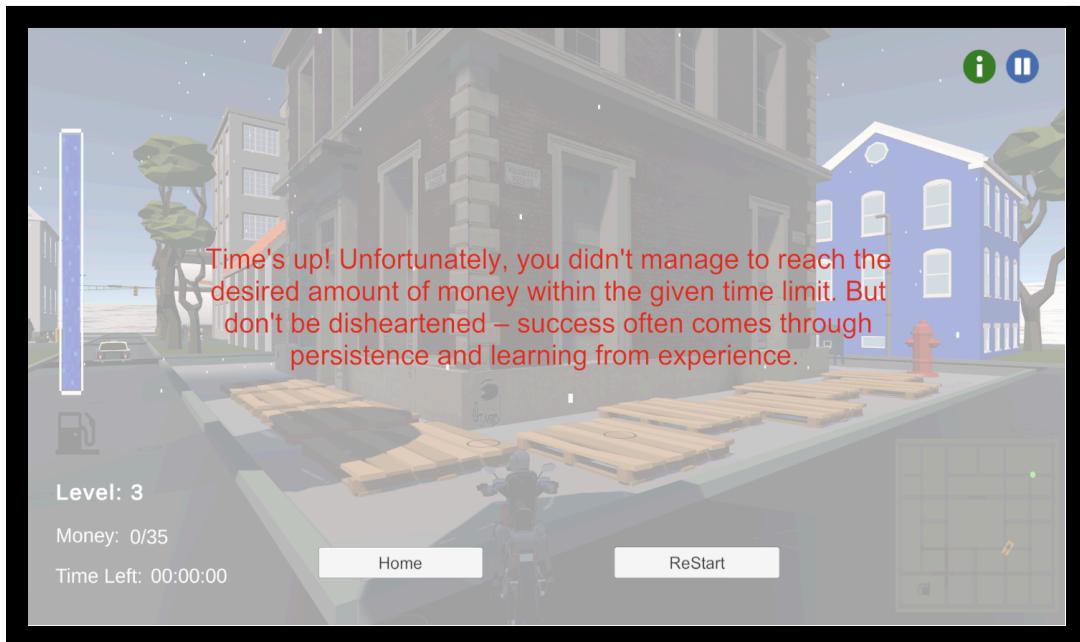
## Interface

When the player wins the game, a message appears, displaying the number of completed deliveries and time left. The player can then choose to return to the home menu by clicking the home button or advance to the next level by clicking the next button. In the last level of the

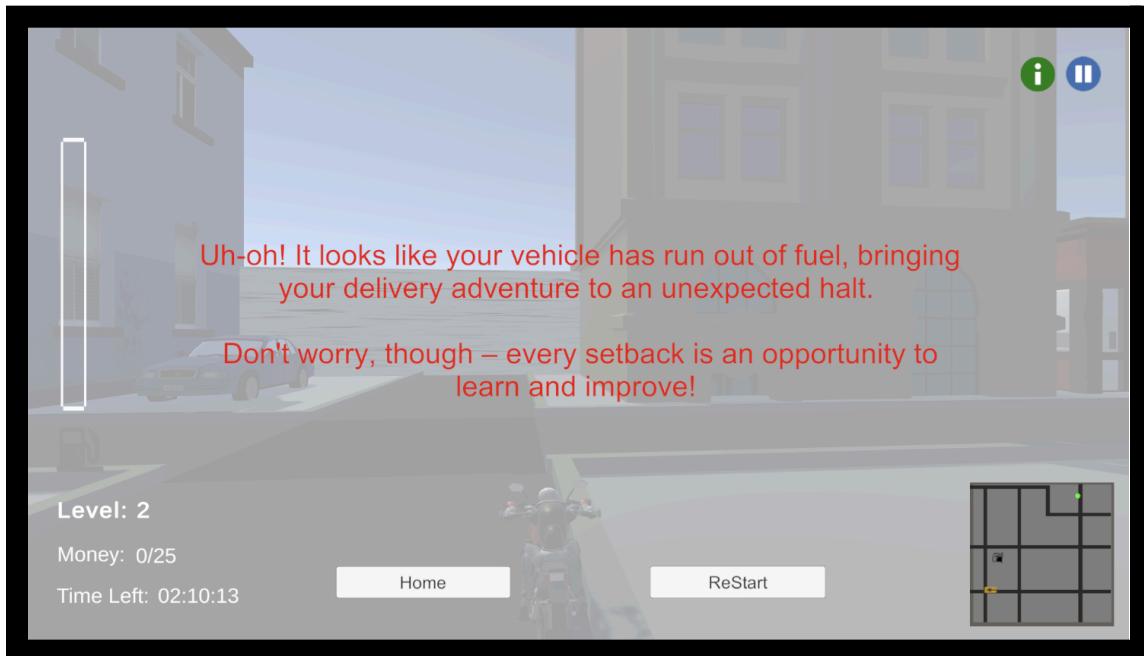
game, the next button will also guide the player back to the main menu scene. The following is the winning panel for Level 1:



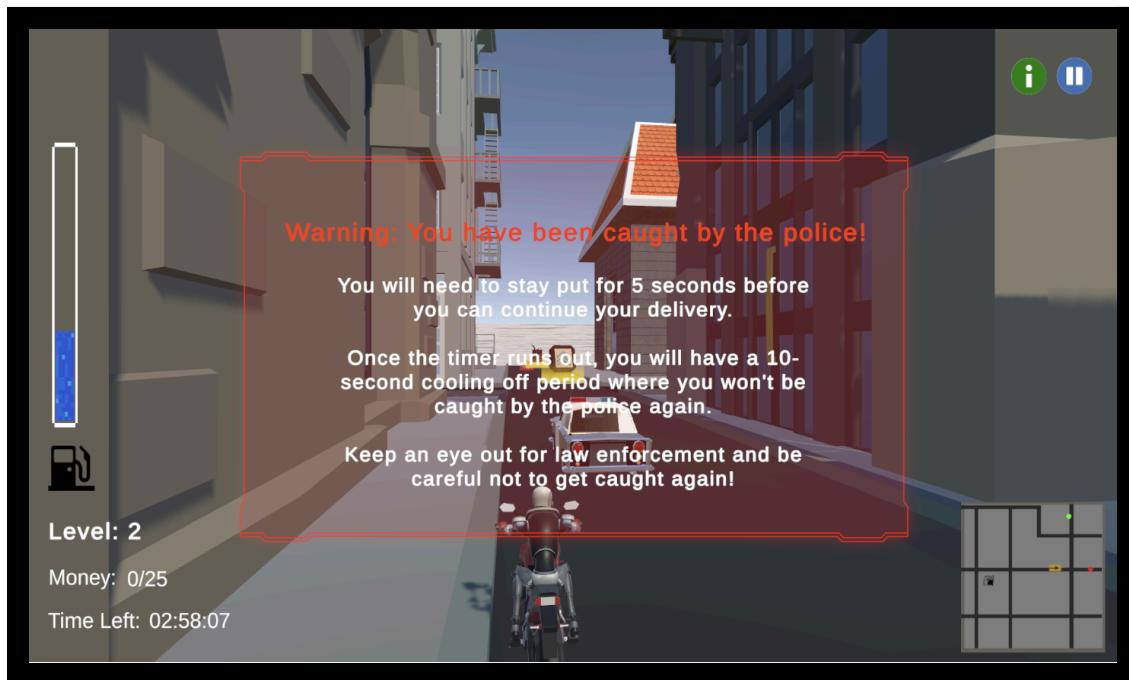
When the player fails to complete the deliveries within the time limit, a losing message will be displayed, and the player can either go back to the main menu or restart the level:



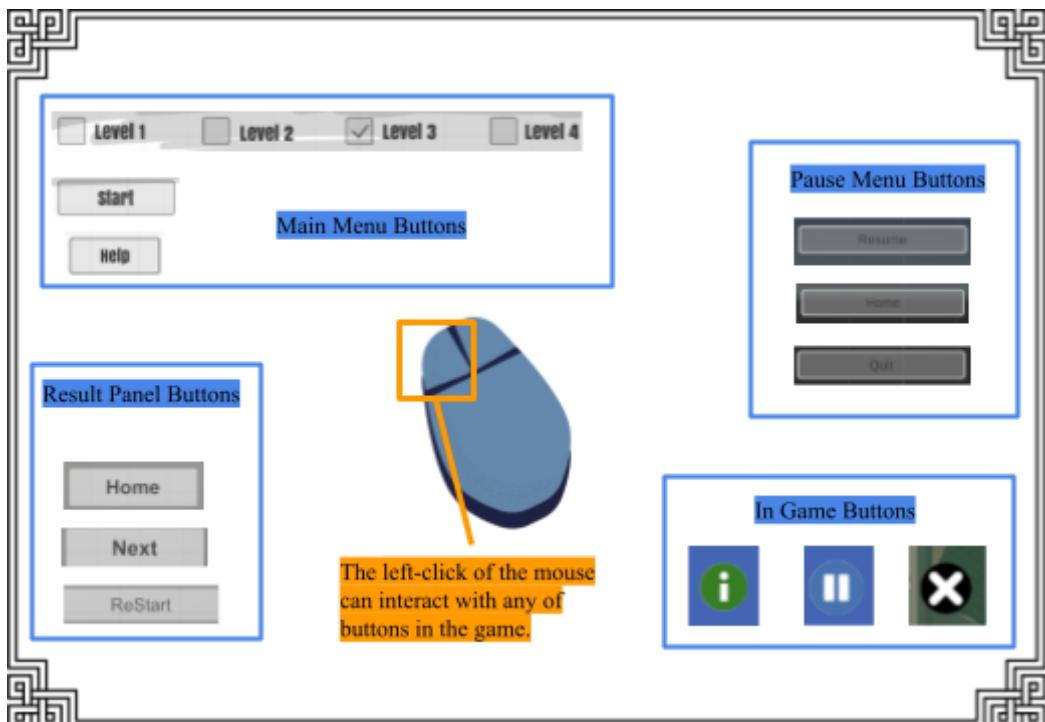
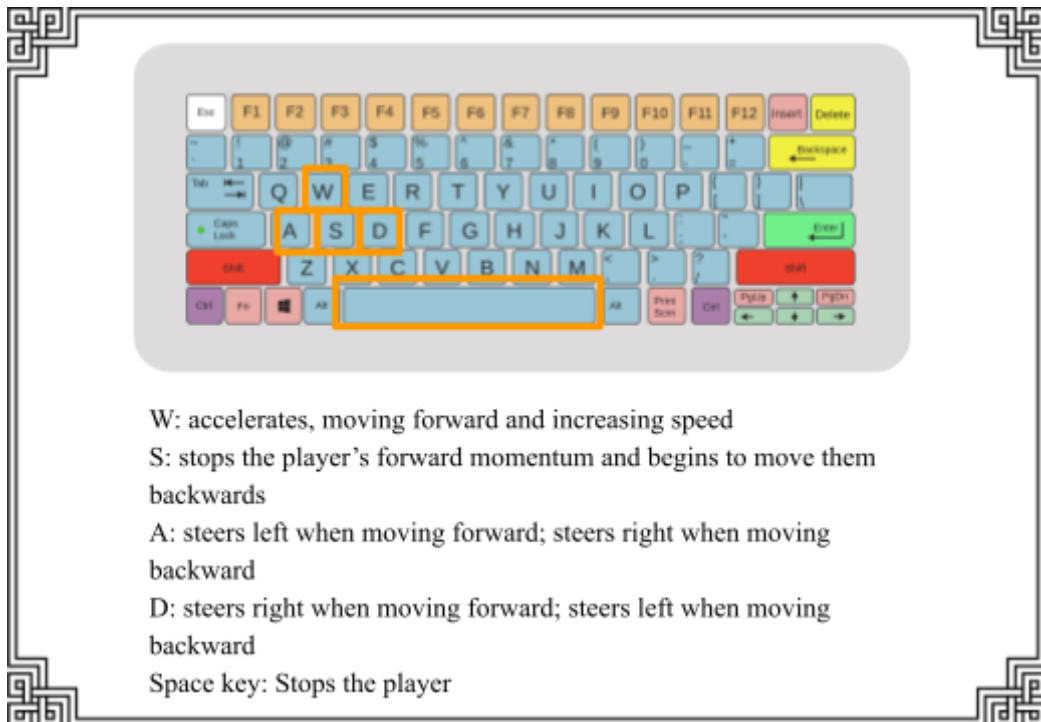
When the player runs out of gas in the middle of the game, a losing message will be displayed, and the player can either go back to the main menu or restart the level:



When the player intrudes the patrolling area, they will be stopped by the police, and the following penalty message panel will be triggered:



## Inputs:

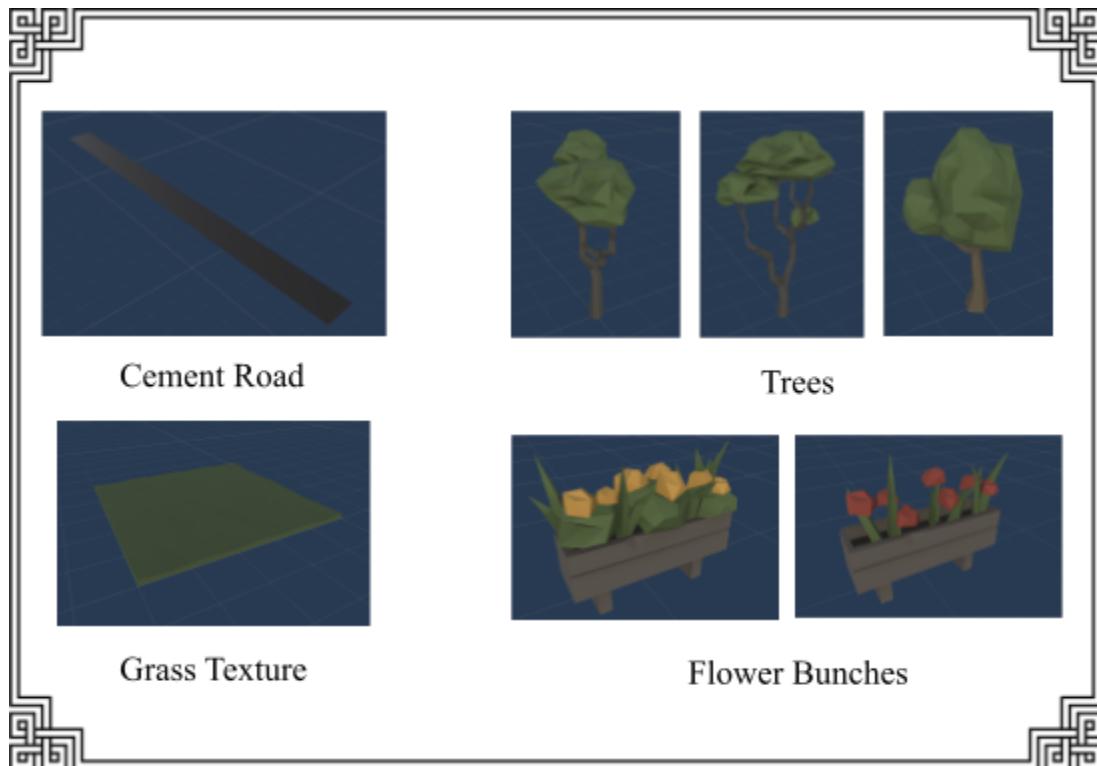


## Section 6 - Game Art

### Terrain and Landscape:

In our game, the terrain and landscape play a crucial role in enhancing both gameplay and narrative aspects. For gameplay, they provide visual cues and challenges that guide the player through the game world, while for narrative elaboration, the diverse elements of the environment contribute to creating a rich, immersive storyworld.

Throughout the game, players will encounter roads with a dark gray asphalt texture, providing a realistic driving surface and helping them navigate the game world effectively. The environment is further enriched by the inclusion of various 3D tree models, featuring three different types of trees that create a lush and vibrant atmosphere. We also have grass textures found in the backyards of people's houses and in parks, providing a natural and welcoming setting for players to explore. The grassy areas offer a refreshing contrast to the asphalt roads and contribute to the harmonious balance between nature and the constructed environment. Additionally, the landscape is adorned with flower assets in bunches, strategically placed around buildings and within grassy areas to create a visually appealing blend between nature and the constructed environment.



Cement Road

Trees

Grass Texture

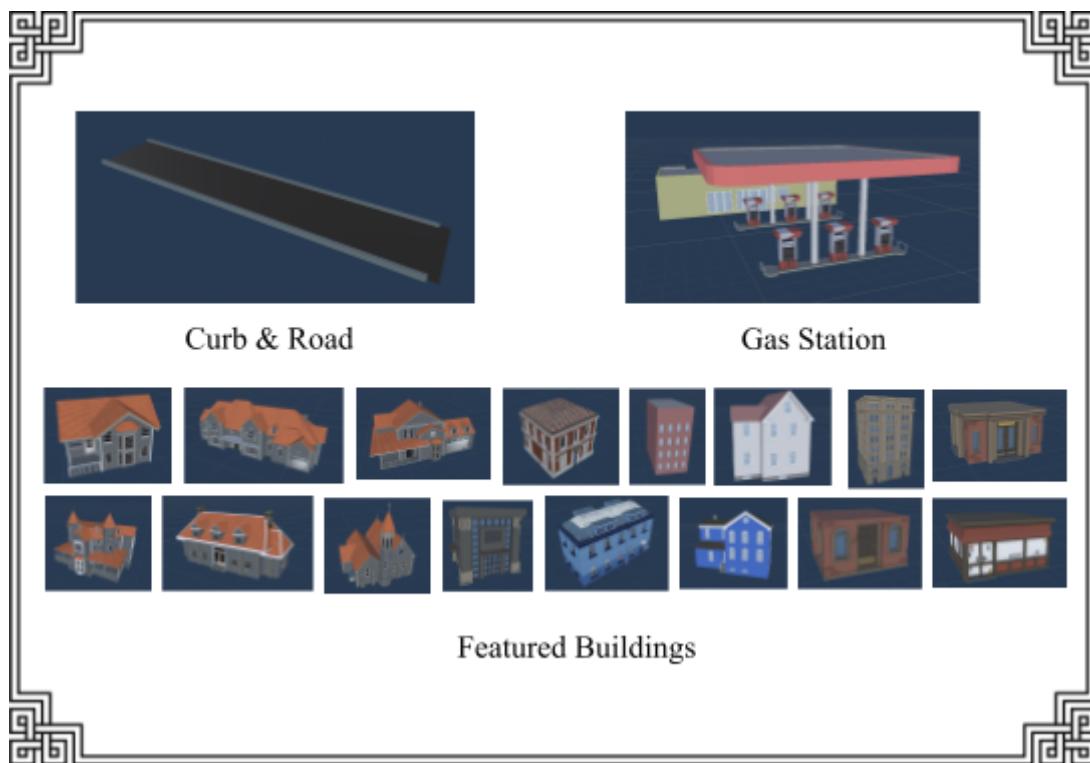
Flower Bunches

## **Exterior Architecture and Engineered Forms:**

In Beep Beep! the three main exterior architectures include gas stations, city buildings, and the streets and curbs. They come together to create a laid-back yet immersive experience, where players can effortlessly dive into the life of a delivery driver by driving through a city environment centered around the player and their driving. Furthermore, each element serves a distinct purpose in terms of the game's flavor, shaping the gameplay and storyworld into a playful yet convincing city that feels natural and engaging.

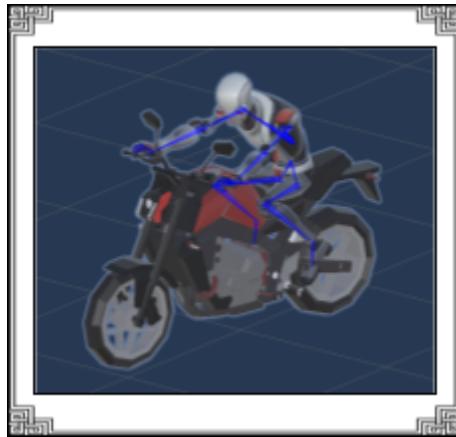
As players cruise through the urban landscape, they'll encounter the gas stations that allow them to refuel and manage resources. They appear as a simplified model of real-life gas stations, with six visible gas pumps, a storefront, and large canopy overhead. City buildings, on the other hand, set the stage for diverse pickup and drop-off points, offering varying visual stimuli that keep players engaged as they explore. The curbs provide guidance, outlining the street and visually indicating to the player that they cannot drive offroad. As players interact with gas stations, buildings, and sidewalks, they'll find themselves fully immersed in the day-to-day experiences of a delivery driver, encountering various other non-player characters interwoven with these constructed environments.

As planned, Level 1 will feature approximately 15 buildings, Level 2 will have around 25 buildings, Level 3 will include 35 buildings, and Level 4 will contain about 45 buildings. We offer a diverse selection of houses, apartments, and buildings to choose from, which have been imported from various packages available on the Unity Asset Store.



## **Transportation:**

We selected this particular character as our main character because it features a red seat on the motorcycle, closely resembling the delivery personnel in Seoul. Additionally, the motorcycle model, which we obtained from the asset store, includes realistic movement such as tilting when steering and turning of the front wheel. The wheels also spin when the player presses the acceleration key. Due to its high level of detail and resemblance to real-life motorcycles, we decided to use this model as the main character in our game.



## **Props:**

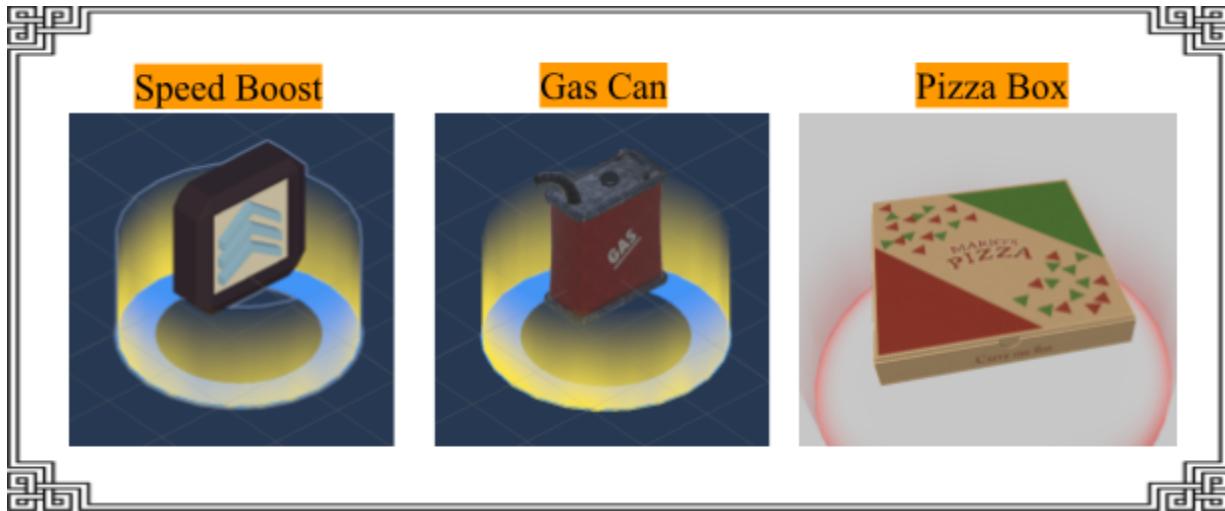
The props featured in Beep Beep! are used to represent objects that the player interacts with as they navigate the map and complete objectives. The three props found in Beep Beep! are the speed boost indicator for the speed boost powerup, gas can model for the gas replenishment powerup, and the pizza box found at the pickup location.

Each 3D model was curated for abundant visual clarity, efficiently communicating to the player what each object's purpose is even if they did not or could not read the information panel at the beginning of the level. The speed boost shows blue, upwards arrows, indicating a boost of some kind. Seasoned gamers may instantly deduce that it is a speed boost, but the asset universally indicates a positive boost of some kind to all players.

The gas can follows suit, as a red can of gas with the word "gas" written on it communicates an everyday object that players will either have encountered in real-life, or seen in a TV show or movie. The visual directness of this asset allows the player to immediately understand what the object does given the context of the gas meter on the left side of the HUD.

Finally, the pizza box connects to the core objective of the game, and again represents an object that the player has likely encountered in real life. It is shaped and proportioned like a real pizza box, and includes colors of the Italian flag (green and red) that are often found on pizza

boxes due to the food's Italian origin.



### **Humanoid Characters:**

The humanoid characters used in the game are sourced from the Unity Asset Store, and their animations are sourced from Mixamo.com, a website with an extensive collection of animations that we were able to adapt to our various character models. They can be found in-game performing activities such as dancing, praying, wandering, talking, breakdancing, and more on the sidewalks or next to the buildings. These NPCs are included to infuse liveliness into the game environment and complete the feel of a bustling urban area. As the player passes by, they will be drawn to these characters, making the gameplay experience more engaging and less monotonous.



## **Sound Effects:**

In Beep Beep!, we have carefully designed the sound effects to create a balanced and engaging audio experience for the players. The three primary sound effects include the motor driving sound, police siren sound, and the clicking sound. The motor driving sound is intentionally kept subtle to avoid overwhelming the background music and to prevent distracting the player.

The police siren sound serves as a crucial audio cue for the player, alerting them to the presence of nearby police cars. This sound effect allows the player to strategize and find alternative routes to avoid getting caught. However, in higher levels like level 3 and 4, we have chosen to omit the siren sound effect for some police cars to increase the level of difficulty. This decision not only challenges the player but also prevents the game scene from being cluttered with constant siren sounds, which could create a distracting and chaotic audio environment that resembles a crime scene.

The clicking sound is another essential sound effect in our game, as it provides players with immediate feedback when interacting with the game's UI, such as clicking buttons. This subtle audio cue helps players confirm their input and ensures that they have successfully interacted with the intended in-game elements.

## **Music:**

The background music for Level 1 is an instrumental of South Korean rapper's 2022 song Seoul Drift. The song is a relaxing and catchy tune that sets the scene for the game by creating an engaging but laid-back atmosphere that the player is able to immerse themselves in as they learn the game's ins and outs, especially if they are already familiar with this popular artist's song.

The background music for Level 2 is an upbeat, exciting track that is befitting of the second level for the game, when the player begins to engage with the game's mechanics in earnest and develop their own strategies. It aims to put the player in high spirits, rallying them for the challenges to come.

Level 3 selected a soothing background music track that was originally created to provide a calming ambiance for people working or studying. This serene soundtrack perfectly complements the rain-soaked setting of level 3, seamlessly blending with the atmospheric rain sounds. As the players navigate through the rainy streets, they become fully immersed in this captivating scenario, and they can experience the tranquility of a rainy day while they complete their delivery tasks.

The level 4 uses an instrumental background music track that features a rhythmic blend of percussive beats. This chill and captivating tune, devoid of any lyrics, perfectly complements the gameplay by infusing it with a sense of excitement and motivation. As the players navigate the most challenging level of the game, the dynamic beats in this music track encourage them to persevere and overcome obstacles, providing a glimmer of hope and a surge of determination.

## Section 7 - Sample Game Play Description

The game starts with the main menu, where the player can select the level that they want to go to by checking the box and clicking start:



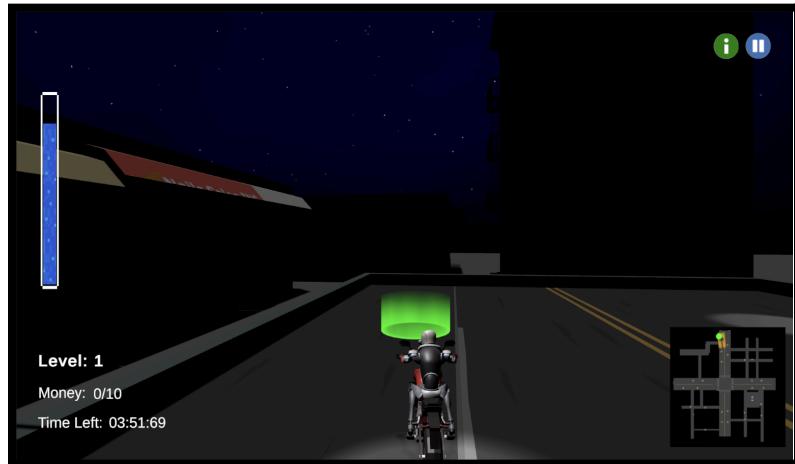
Suppose the player is new to the game and wants to start with level 1:



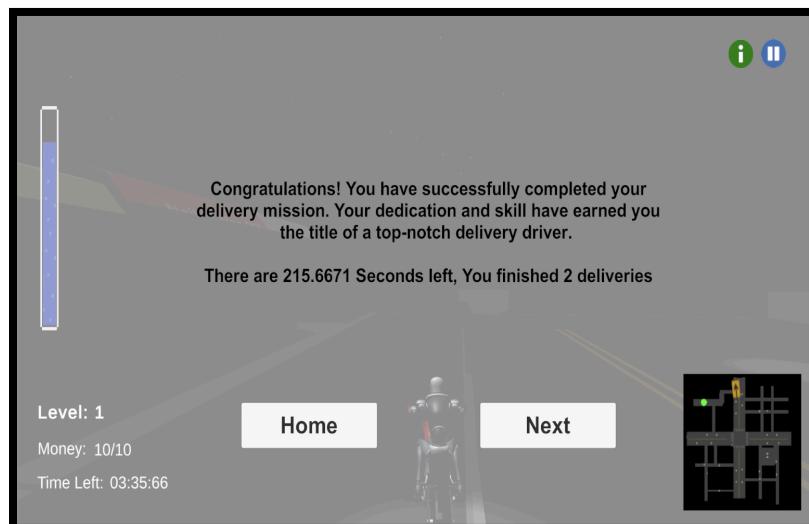
Wow it's a night scene! Let's look for the delivery:



Found the pizza box and picked it up. Then go to the green dots that is shown in the minimap:



Nice! This is the drop off points. Walk pass it and earn 5 money!. You then do one more delivery and you will pass level 1:



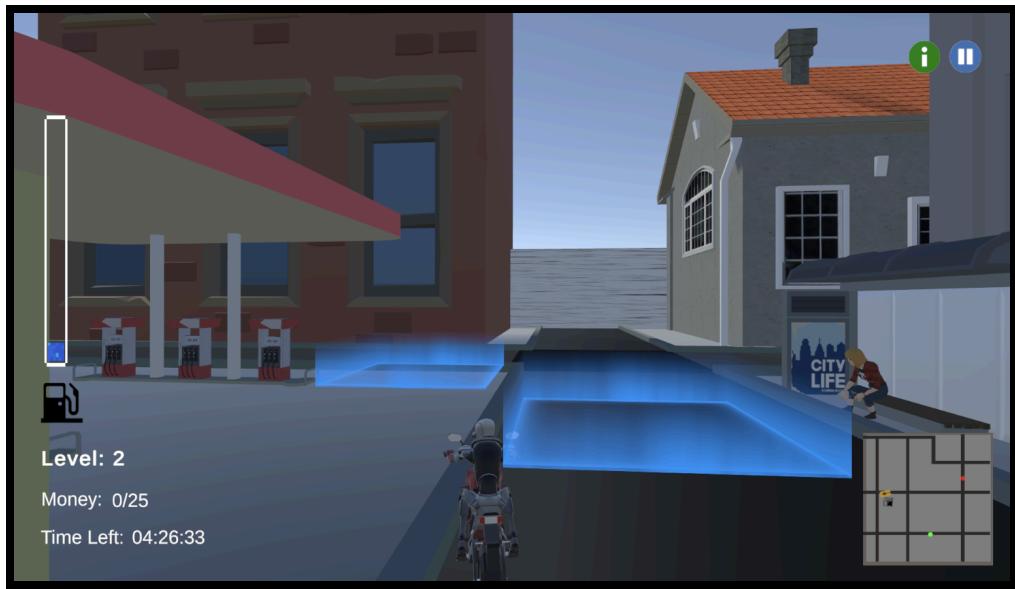
Then, click the Next button and you will be lead to level 2:



Close this green window by clicking the white cross button on the top left of the green box to continue the game:



Found a speed booster and a gas tank!



You are running low on fuel. But don't worry! Drive to the blue glowing area and you can fuel your vehicle!



Great, you can try to finish level 2, and then you can go to level 3.



Welcome to level 3.



It seems like level 3 is raining, that's why you will feel a little hard to control the player.



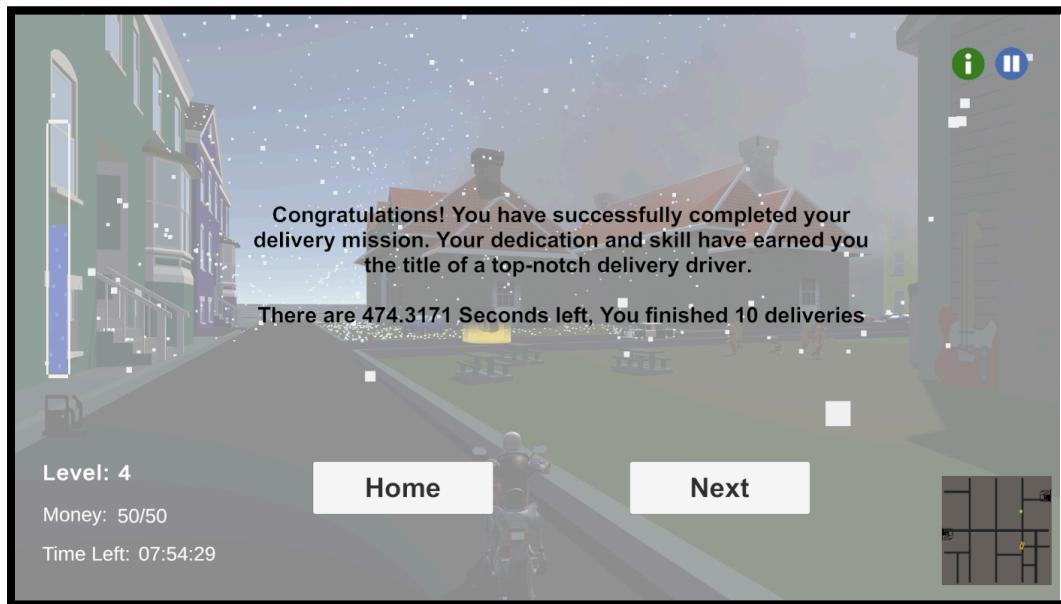
Oops, there's a police. You can't move for 10 seconds.



Okay, okay, now there is a 10 seconds cooling time for the police to catch you again. Run away and finish the delivery to proceed to level 4!



Welcome to level 4! Wow, level 4 is snowing!!! Let's complete the deliveries!



Congratulations! You won the game!!!!

## **Section 8 - Technical Features**

### **Platform:**

Our game is best suited for play on a PC, as we aim to make it accessible to a wide audience. Our targeted users are likely to own a PC, considering that it has become a necessity in modern life for various purposes, such as school and work, making it a prevalent and essential device for most people.

Compared to tablets, phones, consoles, and web platforms, PCs have several advantages in terms of user input systems. First, tablets lack the necessary keyboard inputs; using an on-screen keyboard during gameplay would reduce the visible game area and make it harder for players to navigate. For example, in Level 2, the player needs to press on the W and A (or D) simultaneously to swiftly navigate between intersections to reach the drop-off points, which would be difficult on a tablet because it would be uncomfortable for the player to do the same motion on a touch screen. Second, consoles would be overkill for our game's simple movements, which only involve driving a motorcycle and picking up props. Third, PCs generally have larger screens than phones, making it easier for players to complete levels. Additionally, our game relies on keyboard inputs, which makes it less compatible with phones. Lastly, the PC platform ensures a consistent and optimized gaming experience for our players, in contrast to web-based platforms that might face compatibility and performance issues.

We anticipate that the ideal screen size will be at least 13 inches with a 1920x1080 resolution, as these are common specifications among PCs, allowing more people to enjoy our game.

### **Input System:**

The keyboard would be the primary input system for the player to play our game. The player can use the WASD keys for character movement, providing a familiar and intuitive control scheme for navigating the game world. The mouse would be the other primary input method that the player can use to navigate the game's UI, using the left click of for actions such as choosing the levels, and proceeding to the next level. This input method allows for accurate point-and-click functionality, enabling players to easily target objects and complete tasks within the game.

### **Memory and Processor Speed:**

Given that the lowest-spec computer we were able to smoothly test and play our game on was a 2020 MacBook Air, we recommend the minimum memory and processor speed to be an 8-core CPU, with 4 high-performance cores operating at up to 3.2 GHz. This is because we want to ensure a smooth and enjoyable gaming experience for our players without requiring them to have the latest high end hardware.

In Beep Beep!, there could be a few situations where the GPU calls might slow down as the game is played on slower machines, which might affect the overall gaming experience. One potential situation arises when there is a high density of NPCs performing various animations. On slower machines, rendering these animations simultaneously might strain the GPU, causing a slowdown in performance. Additionally, as the game progresses to higher levels, the maps become more intricate, with more intersections and a denser road network. Rendering these complex environments could lead to a decrease in performance on slower machines due to increased GPU workload. Finally, large draw distances in some levels might require the GPU to render a large number of objects at once, further contributing to potential slowdowns. To mitigate these issues, we recommend optimizing the game settings for slower machines, or operate the game using a high-performance laptop that meets or exceeds the quality specifications we mentioned earlier. This can ensure a smoother and more enjoyable gaming experience.

### **Animation:**

Our game will use 3D animation, as 3D animation provides a more immersive and engaging experience for players, and allows for a deeper sense of spatial awareness and interaction within the game world. The 3D animation will provide us with special visual effects, such as realistic physics when the player moves past the buildings or hits the curb, dynamic lighting and shadows that enhance the game's atmosphere, and decoration details on the environment, characters, and also the motorcycle to make our game scene more realistic and attract the player's full attention.

Our game art will have a balance between photorealism and visual minimalism. While we aim to create visually appealing and detailed city environments in each level, we will also focus on maintaining a clean and minimalist aesthetic for the roads on which the player will ride. This is to ensure that the player can clearly see the road and easily identify their target destination. Additionally, we will design the core mechanics to be simple and intuitive, allowing players to understand their purpose and functionality through common sense.

An example of an intuitive core mechanic in Beep Beep is the use of the red glowing pick-up point. The red color signifies urgency, prompting the player to approach it for an important action. As the player reaches the red glowing pick-up point, they can collect the package they need to deliver. This mechanic is intuitive because the red color and glowing effect indicate that it is a crucial part of the gameplay, and its placement on the map encourages players to navigate towards it. Moreover, as the player enters the gas station and fuels their motorcycle, they can observe the blue bar on the HUD filling up, providing instant visual feedback that the refueling process is occurring. This simple and easy-to-understand mechanic helps players

quickly grasp the concept of refueling their vehicle and prepares them to head out immediately when they see the blue bar is filled, optimizing their time usage.

### **Sound:**

PCs typically have decent built-in speakers or can be connected to external audio systems, allowing for a rich and engaging sound experience. As a result, our game will feature high-quality sound effects and music that complement the platform's audio capabilities, ensuring the best experience for our players.

Regarding the audio channels used in our game, we utilize a maximum of three simultaneous audio channels at any given moment. This includes one channel for background music, another channel for the motorcycle's driving sound, and a third channel for sound effects, such as the clacking sound when clicking on GUI buttons and the siren sound for the police car. This balanced use of audio channels allows for an immersive and engaging sound experience without overloading the player with too many sounds at once.

To address potential GPU slowdowns on slower machines, we have optimized the game's audio settings to reduce the impact on performance without sacrificing the quality of the sound experience. Lastly, it's worth noting that our game does not include any dialogue, focusing instead on the sound effects and background music to create a compelling and immersive auditory experience.