Game Design Document

For

Café Conundrum

By

Atomic

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Revisions

Version	Author	Date	Comments
v1.00	ALL	20 May 2024	Initial Version
v1.01	Dylan de Jong, Ayden Shaw	16 June 2024	UI rework
V1.02	Katleho Machobane, Ayden Shaw	17 June 2024	Audio Details Specified
V1.03	Wikho Doman, Corbin Mercuur	17 June 2024	Level Design Improvements

Game Overview

Concept
Café Conundrum puts you in the shoes of a new small business owner in central Johannesburg, South Africa where you must effectively manage your newly opened café. This arcade, management game aims to keep players thinking on their feet by throwing various challenges relating to the government's poor service delivery.

In order to run the café, players will be required to take orders from their customers, prepare drinks and serve their customers. In addition, they will need to cope with challenges that could affect the efficiency. These challenges can include no water, no electricity, service delays and other unpredicted trials.

Theme
Café Conundrum aims to address themes of poor service delivery in South Africa, in regards to small business owners.

Genre
Casual, management game with elements of wave survival and strategy.

Gameplay Summary
Players' primary goal is to ensure their café runs smoothly; this is done by serving the customers. Players are able to move around their café and approach customers sitting at tables. Here they will then receive the orders of the customers, which they must then enter into the point-of-sales system. Then players will go on to prepare the requested drinks, while the kitchen prepares the meal. Once completed, the player can then serve the customer with their meal.

The end of the business day will mark the end of that level. Before the start of the new level, players will have a brief period to prepare for that day. They can purchase additional items to make the day easier or prepare for any sudden cuts in water, electricity, etc. Players can be notified by some of these challenges by reading the daily newspaper.

Purpose
By placing the player in the shoes of a small business owner, we can not only show the effects poor service delivery has on businesses, but also prepare potential new business owners of the possible challenges they might face throughout the business's lifespan.

Target Platform
The game will be primarily targeted to PC but could be ported to consoles depending on overall success.

Gameplay

Core Gameplay

The core gameplay revolves around the following elements:

- Collecting orders from customers.
- Processing orders received.
- Delivering orders.
- Collecting tips.

Game Flow

The game will comprise of multiple days, representing the levels. At the start of the level, players are given a set amount of time (2 – 5 minutes) as preparation time. During this preparation time, players will be able to read the daily newspaper, start preparing meals and purchasing additional items. By reading the daily newspaper, players can be informed of the possible challenges they may face throughout that day. If players are made aware of possible electricity cuts, they can start pre-preparing meals. Finally, players can use this time to purchase items that may help them with that specific level.

After the preparation time, the café is opened, and customers start to enter. At random intervals of the day, customers will enter (in groups, or alone) and take a seat at a table. Players will then be required to approach a table, where they will then take the order of the customers. Then players will enter all of the food into the POS (point-of-sales) system, which will then begin to be prepared by the kitchen. While this is happening, the player will go on to prepare/collect the drinks ordered. Once all elements of the order is complete the player will give it over to the customer, where they will enjoy it and leave. When customers leave, they will leave money on the table, and it is the responsibility of the player to collect it before the end of the day (or before something happens to it). This cycle repeats until the day ends.

In addition to the main gameplay players will also need to deal with challenges thrown at them throughout the day.
Once the day is complete, the number of customers served, XP gained, and current level is calculated together to add to the current score of the player. Then the entire cycle repeats on a new day.
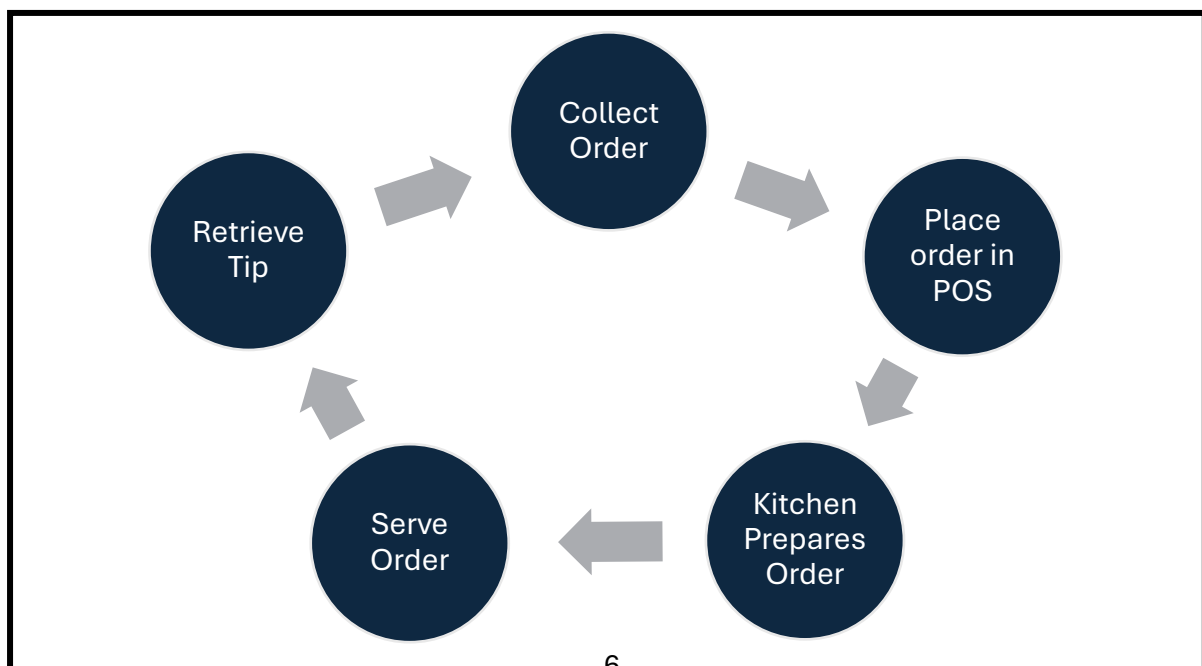

Figure 1: Shaw, A. 2024. Gameplay Flowchart.

Objectives

The overall objectives for *Café Conundrum* are:

Last as Long as Possible

A wave survival system is implemented in *Café Conundrum*, rewarding players with a high score for the longer they "survive". Each day will be counted and when the player eventually loses, this will be their "max wave survived".

Maintain Café's Reputation

The café's reputation will be a bar, visible at all times, indicating how customers see the experience of the café. Once this bar reaches zero, the game ends. Factors like not serving customers, too much wait time and wrong order all influence this bar negatively.

Gain Money and XP

Throughout the level players will obtain money and experience points (XP), which can be used to unlock/purchase different items, upgrades and more.

Game Progression

Café Conundrum features various elements that contribute to the overall progression of the game.

Day Count
Each day survived, represents one part of your score. The day count will be kept track of for the entire playthrough and will only stop counting once you lose.

Money and XP
Money and XP also serves as a way to track your progression and will also be represented in your high score, once the game is completed. XP allows players to unlock certain items later in the game, this also serves as a method to track progression.

Difficulty Scaling
The more days that the player survives, the difficult the game will become. Factors like customer spawning, complex orders, customer patience and satisfaction, and more challenges will all be altered for difficulty.

Challenges

The number 1 challenge that players will face, is ensuring customer satisfaction. This will require players to deliver the proper orders to their respective customers in a timely manner. Failing to so, will result in the café's reputation lowering. If the café's reputation reaches 0, the game will end.

In addition to this, the following challenges will influence what players do to reach their objectives:

Loadshedding
Players will be notified at the start of the day (through reading the daily newspaper) if

they will have a power cut, and when. During this time the kitchen will completely stop working. Therefore, players must pre-order food, enough to satisfy customers.

Lack of Clean Water

Players will also be notified if their water will be unavailable. This will prevent players from preparing hot drinks. They will need to come up with a different plan for hot drinks.

Sewerage Problem

At any point in the day sewerage problems can arise. While it is in progress, the customers' satisfaction meter will decrease faster.

Road Maintenance

At any point throughout the game, the roads can become damaged. This will eventually cause less customers to enter the café, resulting in less tips.

Crime

If a player leaves their tip on the customers table for too long, thieves may enter the café and steal it.

Refuse Removal

Players will be made aware if their refuse is not collected, this will result in the faster decay of the customers satisfaction meter.

Gameplay Elements

POS System

Players will be required to go to the POS System to enter the customers' orders manually. This will cause the kitchen to start cooking the meal.

Figure 2: Doman, W. and Mercuur, C. 2024. POS System.

Hotplate

Once orders are completed, they will be placed on the hotplate, where the player will collect it in the order that the order was entered.

Beverage Dispensers

When customers order cold drinks, the player must get it from the fridge. This is an instant process and can immediately be served to the customer.

If the customer orders a hot drink, the player will need to prepare it using the barista machine. The process to prepare the drinks will be between 5 and 10 seconds.

Figure 3: Doman, W. and
Mercuur, C. 2024. Drinks Disp.

Figure 4: Doman, W. and Mercuur,
C. 2024. Barista Machine.

Money and XP

Money is earned through tips from the customers, based on their experience. Money can be used to purchase various unlockables. In order to gain access to the unlockables, players will also need to gain the required experience points (XP) to unlock it.

Unlockables

Unlockables can be accessed through the telephone of the café. Unlockables are split into temporary and permanent upgrades. Temporary fixes are once-off purchases that either fix an existing problem for that day or unlocks an upgrade that only lasts that day. Permanent upgrades last the entirety of that current playthrough of the game.

Figure 5: Doman, W. and
Mercuur, C. 2024. Telephone.

The temporary fixes/upgrades include:

- **Generator** – supplies power to the café when it experiences a power-outage (loadshedding). Allows meals to be prepared during a power-outage.
- **Water Dispenser** – supplies a limited amount of water to the café if it experiences water cuts. Allows various drinks to still be prepared during a water cut.
- **Bodyguard** – Protects the café from thieves.
- **Sewerage Fix** – Fixes the sewerage problem, therefore slows down the customers' satisfaction diminishing rate.
- **Road Maintenance** – Fixes the access to the café, resulting in more customers entering the café.
- **Refuse Removal** – Removes the refuse from the front of the café. This slows down the customers' satisfaction diminishing rate.

Permanent Upgrades include the following:

- **Upgraded Shoes** – Allows the player to move quicker.
- **Professional Chef** – Meals are prepared 50% faster.
- **Upgraded Barista Machine** – Hot drinks are quicker to prepare.

Additional Systems

AI Customers

Spawning

Customers will randomly be spawned outside of the café and walk in. The spawning rate will be determined by number of empty tables in the café as well as the road's maintenance. Customers can spawn in groups between 1 and 4 characters, they will all sit at the same table.

Satisfaction/Patience

Each individual customers will have a satisfaction and patience meter. The satisfaction meter will determine the tip that the player will receive at the end of their meal and is influenced by the quality of the café (Sewerage and Refuse). The patience meter will cause the customer to leave if it reaches zero, and they have not received their meal. It can be slightly increased by serving them drinks.

Tips and XP

The player will receive XP for every meal and drink served. The amount is constant throughout the game.

Tips are the primary and only source of income for the player. After a customer has finished their meal, they will leave a tip on the table for the player. The tip will be determined by the satisfaction and the patience of the customer.

Story

Background

The year is 2024 in Johannesburg, South Africa. Due to the economic downturn, many government services have begun to break down and cause issues in the daily lives of citizens. These issues ranging from load shedding, bad road infrastructure and water shortages, cause interruptions and in worse cases can negatively affect the livelihood of people. This lack of basic services mostly ends up impacting business owners as they struggle against these issues to keep their business afloat, especially smaller businesses.

The story takes place after the untimely death of Erwin's uncle, after Erwin had been working there for 3 months. Through his uncle's will, has been given the coffee shop to own and run. Erwin applies his knowledge gained from his degree, but he struggles to work around the bad government services. This leads to him losing money and customers. With no other option, he turns to a friend of his, Mbali, who studied the same degree but was fortunate enough to find a job after graduating. Erwin asks Mbali for advice since she has work experience. Mbali helps Erwin strategies ways that he can work around the issues his coffee shop faces. Erwin now must use this new strategy to make the coffee shop the success his uncle always dreamed it to be.

Characters

Protagonist

You play as Erwin. Erwin had graduated in 2023 with a degree in business from university. He like many youths struggled to find employment and ended up doing odd jobs every here and there while still living at home with his parents. A year later, his uncle Thabo calls him to offer him a job at his coffee shop. Erwin is an eager young man who has a lot to prove and the willingness to try, but also to learn. He workers hard but struggles when it comes to leadership. He knows how to create and follow processes, but due to a lack of experience, he lacks the capability to apply that ability on a small business scale. He nevertheless always gives his best effort. He enjoys engrossing himself within whatever task he sets his mind to completing even going as far as doing research. His determination and willingness to try despite his shortcomings will be useful in making his uncle's coffee shop the best it can possibly be.

Supporting Character

Mbali is Erwin's friend who studied business with him in university. She was fortunate enough to find a job as business strategist at a restaurant chain in Johannesburg. By the time Erwin contacts her for work, she has been working there and has gained a years' worth of experience. Within the game, Mbali acts as a tutorial guide that helps Erwin understand more about how to manage the coffee shop and plan around the bad government services. After showing Erwin the ropes, she sources him his initial clientele and lets him manage the business on his own.

Game Style

Overview

The overall style of *Cafe Conundrum* will consist of a simple stylized look to appeal to the target audience of 14 to 17. The use of a hand-painterly style, with exaggerated proportions and features allows for more creative expression and also contributes to the light-hearted feel.

World Style

To properly represent the setting and feeling of the game, the inclusion of South African heritage is important. South African flags, traditional patterns, proteas and springboks are all examples of elements that will be included to represent the setting of the game.

Character Design

Body Types

In *Café Conundrum* we want to represent a diverse range of characters that will accurately represent the diversity of South Africans. We want to represent the different body types such as muscular or slender, and also body shapes (whether it is a triangle, rectangle, oval or an hourglass figure).

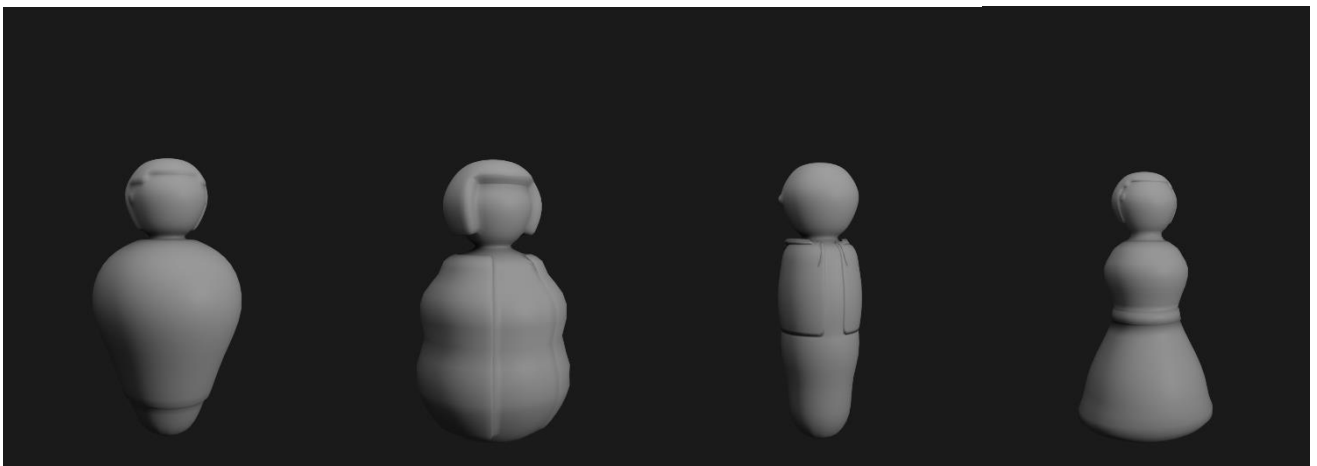Figure X shows an example of the body types and shapes that can be present in *Café Conundrum*:

Figure 6: Mercuur, C. 2024. Character Body Types.

Expressions

In addition to the characters body, we also want to represent facial features and expressions in our characters. This will be done through texture layering. Each character's expression will have a "drawn-on" style. This will allow us to dynamically change it during gameplay and will also save us time in the creation of the characters.

Figure 7: Mercuur, C. 2024. Character Expressions.

Clothing

To further experiment with the concept of diversity, *Café Conundrum* will feature a modular clothing system. Each character type will have multiple different types of clothing combinations.

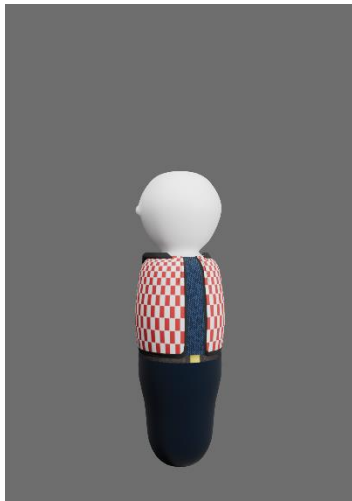Some examples of these combinations include:

Figure 8: de Jong, D. 2024. Clothing Example 1.
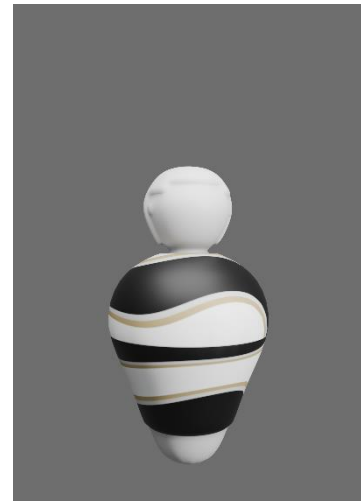

Figure 9: de Jong, D. 2024. Clothing Example 2.

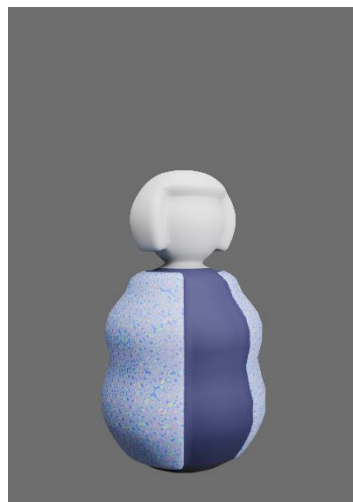Figure 10: de Jong, D. 2024. Clothing Example 3.

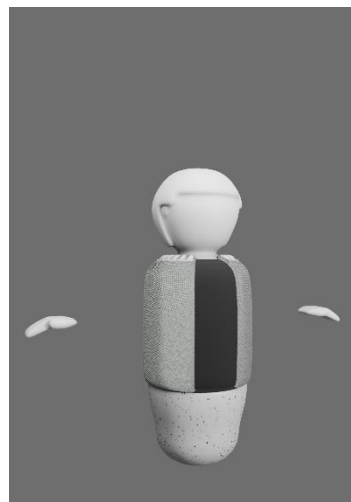Figure 11: de Jong, D. 2024. Clothing Example 4.

Figure 12: de Jong, D. 2024. Clothing Example 5.

Level Design

Overview

Café Conundrum will feature one static level. This level will consist of tables and chairs, the hotplate, beverage dispenser, refrigerator/storage, telephone and POS machine. We want to embrace South African style, while also optimizing the layout for gameplay purposes.
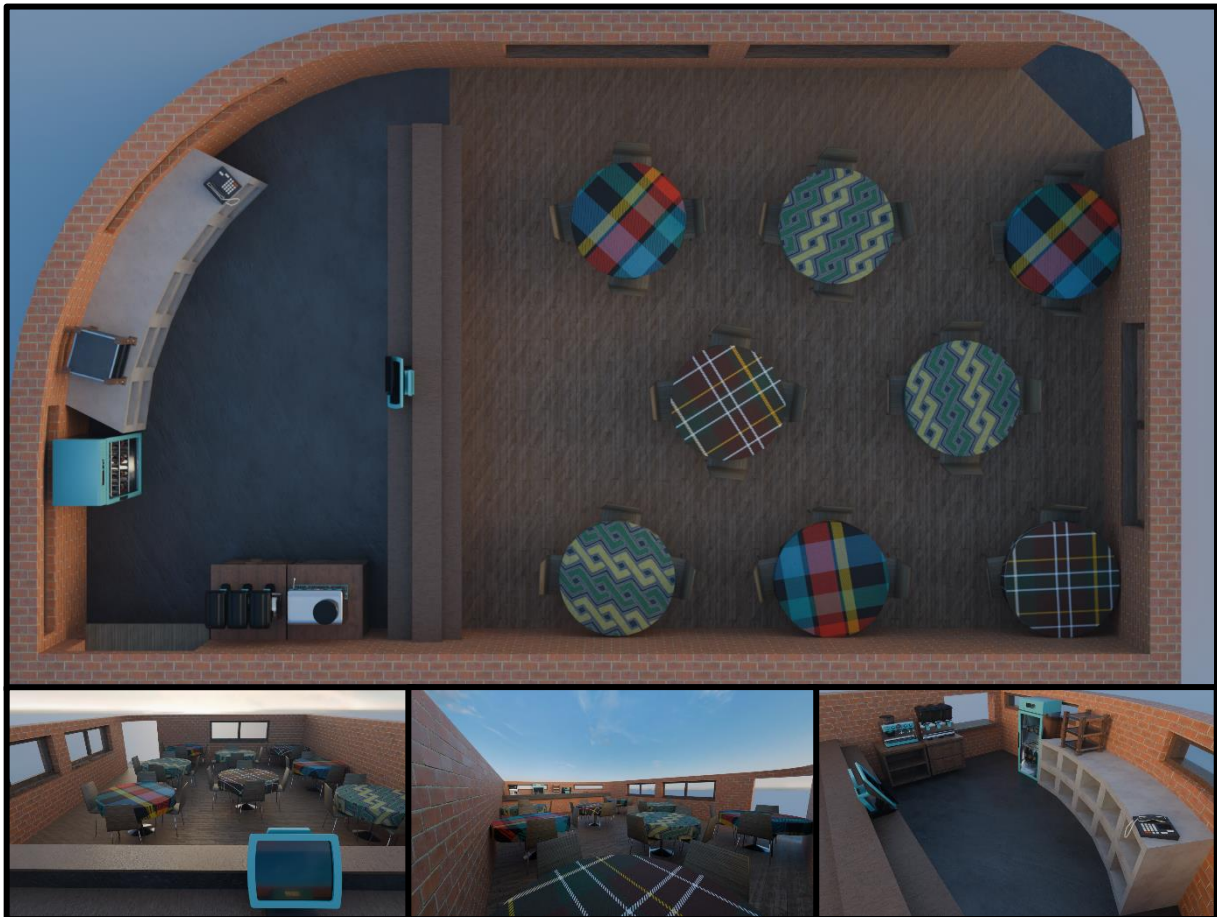
Layout

Figure 13: Doman, W and Mercuur, C.
2024. Café Layouts.

Figure X shows a basic layout of the café. The café is divided into two sections, the staff area and the customer area. The staff area will be the area the player uses to place orders, prepare drinks, retrieve orders, and activate upgrades. The customer area will gradually be filled with customers, where the player must obtain their orders, serve their orders and collect their tips.

All of the gameplay elements within this scene are strategically placed.

Tables
All of the tables are placed in such a way that allows the player to properly navigate through the level.

POS System

The point of sales system is placed fairly central as this is a key component of the game, and players will be accessing it regularly.

Hot Plate

The hotplate is positioned towards the back of the café. This is done for two reasons. Firstly, it implies that the kitchen is located near that area. Secondly, it allows players to make strategic decisions on their walking path, they may choose to first enter in another order before collecting an already made order.

Beverage Dispenser

The beverage dispenser is also located between the POS system and the hotplate to be easily accessible to the player.

Storage

The storage area completes the area allowing players to collect other drinks from there.

Windows

The windows present have a sole purpose to allow natural light into the café. This contributes to the overall aesthetic and completes the café look.

Interface

Main Menu

The main menu UI panel is the first UI panel that will appear when players start the game. This panel allows players to enter gameplay, change the game's settings to their preferences, as well as exit and close the application.

The main menu is vitally important not only for menu and scene navigation, but also serves as the perfect opportunity for positive first impressions, such as showcasing game art and the overall theme of the game.
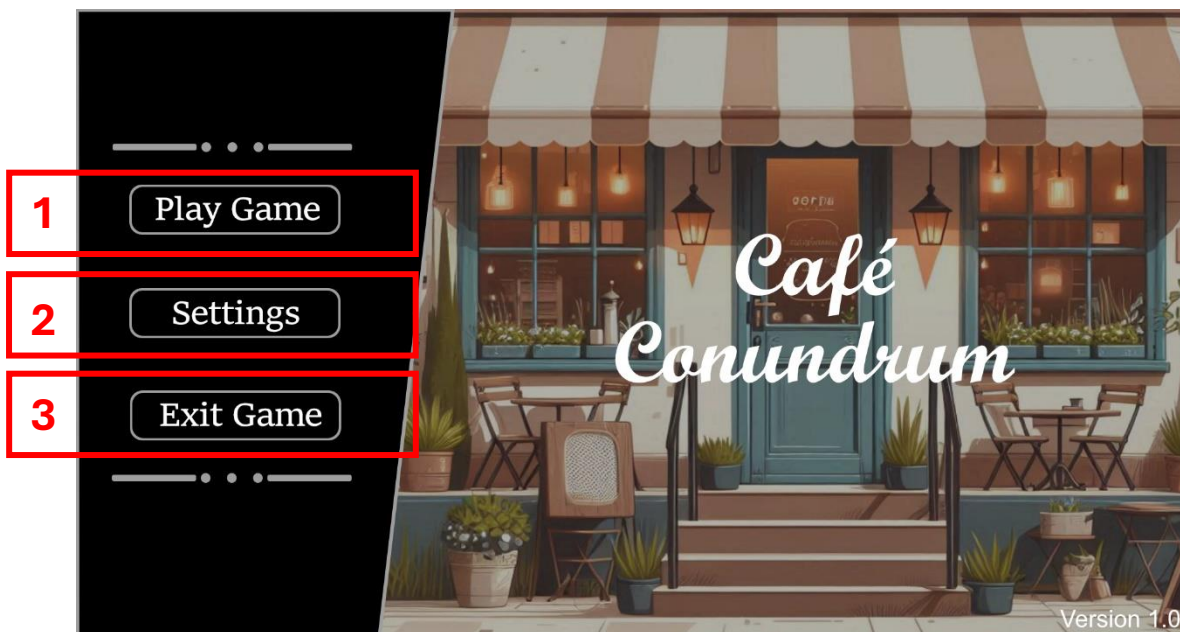

Figure 14: de Jong, D. 2024. Main Menu
Interface. [Adapted from Bing Image Creator].

1. **Play Button:** This button begins the game for the player.
2. **Settings Button:** This button enters the game settings.
3. **Exit Button:** This button exits the game.

Settings

The settings menu allows players to fine tune the game to their personal preferences. The settings menu allows players to change how the game visually perform and presents and can change the resolution, frame rate and graphics quality settings to match their device and display.

Additionally, players can change control sensitivity as well as the key binds assigned to different in-game actions to match their preferences in the controls tab of the settings menu.

In the sound tab, players can change the volume of various game sounds to be more audible or less audible to fit their personal preferences.

The final tab of the settings menu allows players with certain health conditions such as visual impairments, to fine tune how the game performs visually to help them play the game easier.

Figure 15: de Jong, D. 2024. Settings
Interface.

1. **Apply:** Button to apply selected settings.
2. **Navigation:** Prompts for menu navigation.

Loading Screen

The loading screen UI panel give players feedback visually that the game loads the next scene. The loading screen presents a visual appealing background, presenting game art to entertain players while they wait for the game to finish loading the next scene.

Figure 16: de Jong, D. 2024. Loading
Screen. [Adapted from Bing Image

HUD

The heads-up display (HUD) UI panel is the most important UI panel to navigate during gameplay. This UI panel gives players visual feedback for game progression, allows players to navigate to different menus, as well as keep track of variables, such as the time of the business day, the current in-game day and currency amount.

This UI panel overlays the main gameplay, giving context to the player to what is happening in the background of the gameplay.

The HUD also allows players to open other UI panels, such as the order menu, upgrade menu to ultimately progress in the game.

Figure 17: de Jong, D. 2024. HUD Interface.
[Adapted from Bing Image Creator].

1. **Day Timer:** This timer indicates the current time of day and is also a visual indicator of how much time is left for that level.
2. **Current Day Indicator:** This indicates the current day (level) the player is currently on. Day of the week is purely aesthetic.
3. **Money Counter:** Shows the current amount of money the player has.
4. **Orders Prompt:** When opened, displays current progress of orders players have placed (with the kitchen).
5. **Upgrades Prompt:** When players are near the telephone, this will pop-up to show that they are able to purchase upgrades.

Pause

The pause menu UI panel allows players to stop the game at any time to take a break or navigate to different menus of the game. The pause menu allows players to pause and resume the game, enter the settings menu to fine tune the game to their preferences, enter the help menu if they get stuck playing the game, as well as quit the game and return to the main menu of the game.
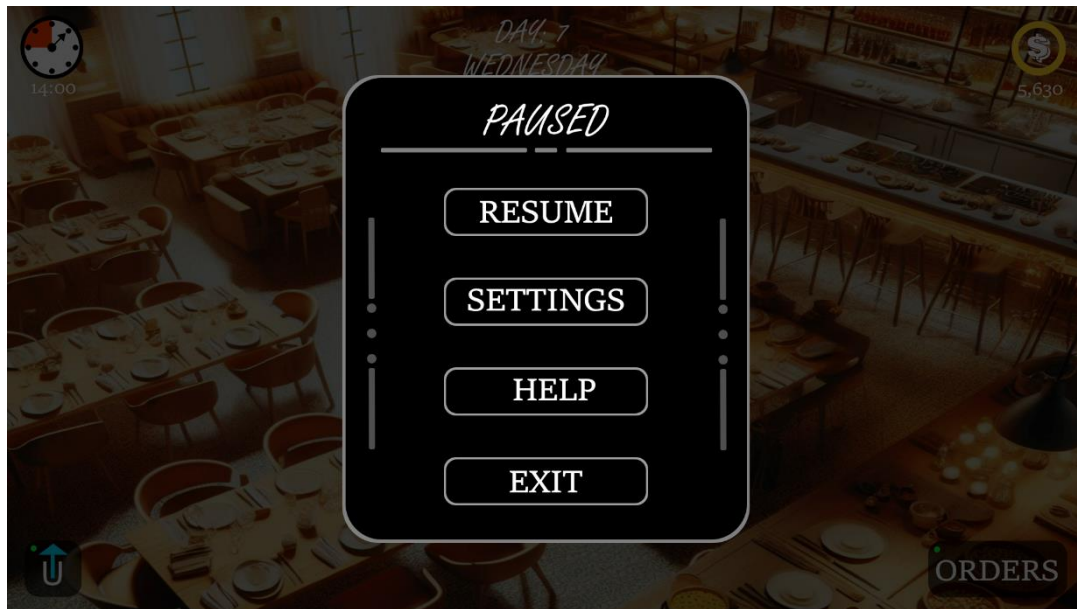

Figure 18: de Jong, D. 2024. Pause Screen.
[Adapted from Bing Image Creator].

Help Menu

The help menu UI panel allows players to view the goal of the game, as well as the controls of the game if they get stuck playing the game. This panel informs players about these two aspects to help guide them to get unstuck during gameplay.

This menu can be accessed at any point of gameplay within the pause menu UI panel.
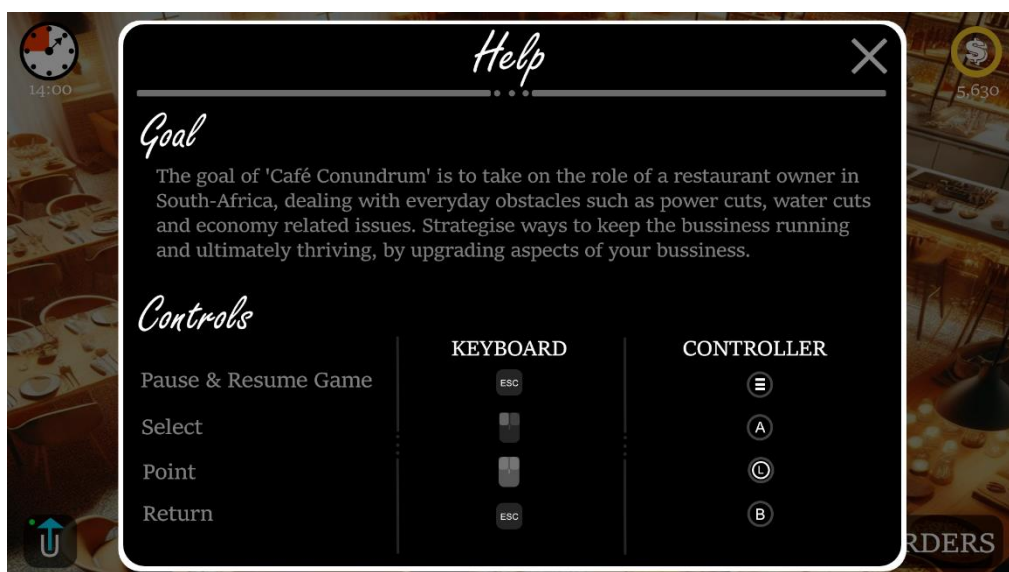

Figure 19: de Jong, D. 2024. Help Screen.
[Adapted from Bing Image Creator].

Upgrades

The upgrades menu UI panel allows players to spend their in-game currency on various upgrades in order to improve their business and how it is running. This UI panel ultimately allows players to progress within the game, and beating the game the more upgrades they perform.

This UI panel does not stop the gameplay from running in the background, it simply overlays the gameplay.
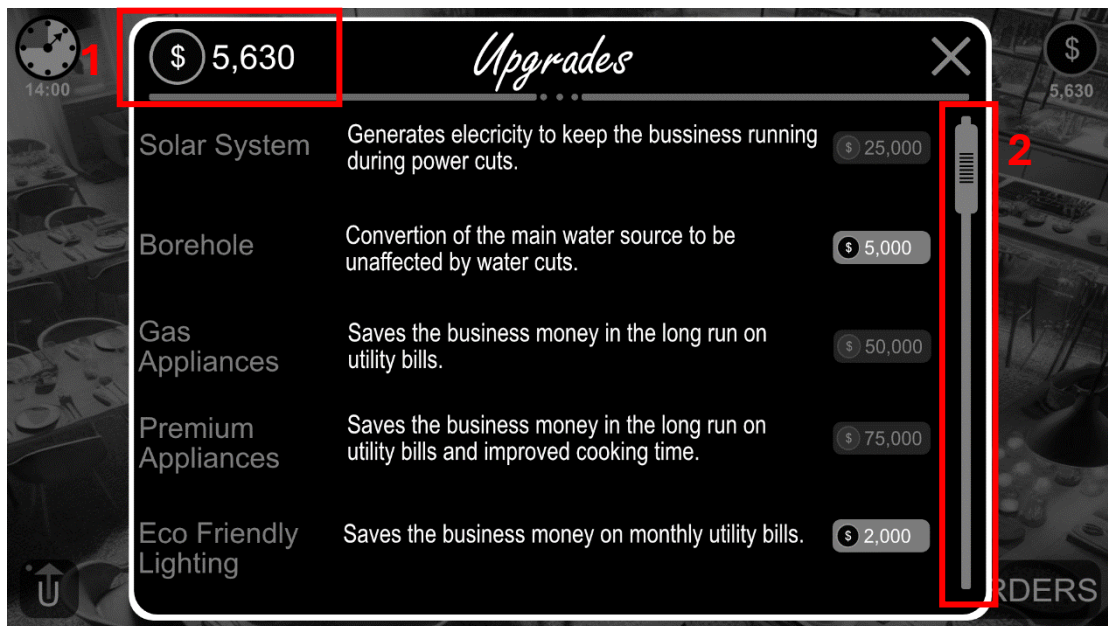

Figure 20: de Jong, D. 2024. Upgrades Screen.
[Adapted from Bing Image Creator].

- **Current Money:** Indicator of player's current balance.
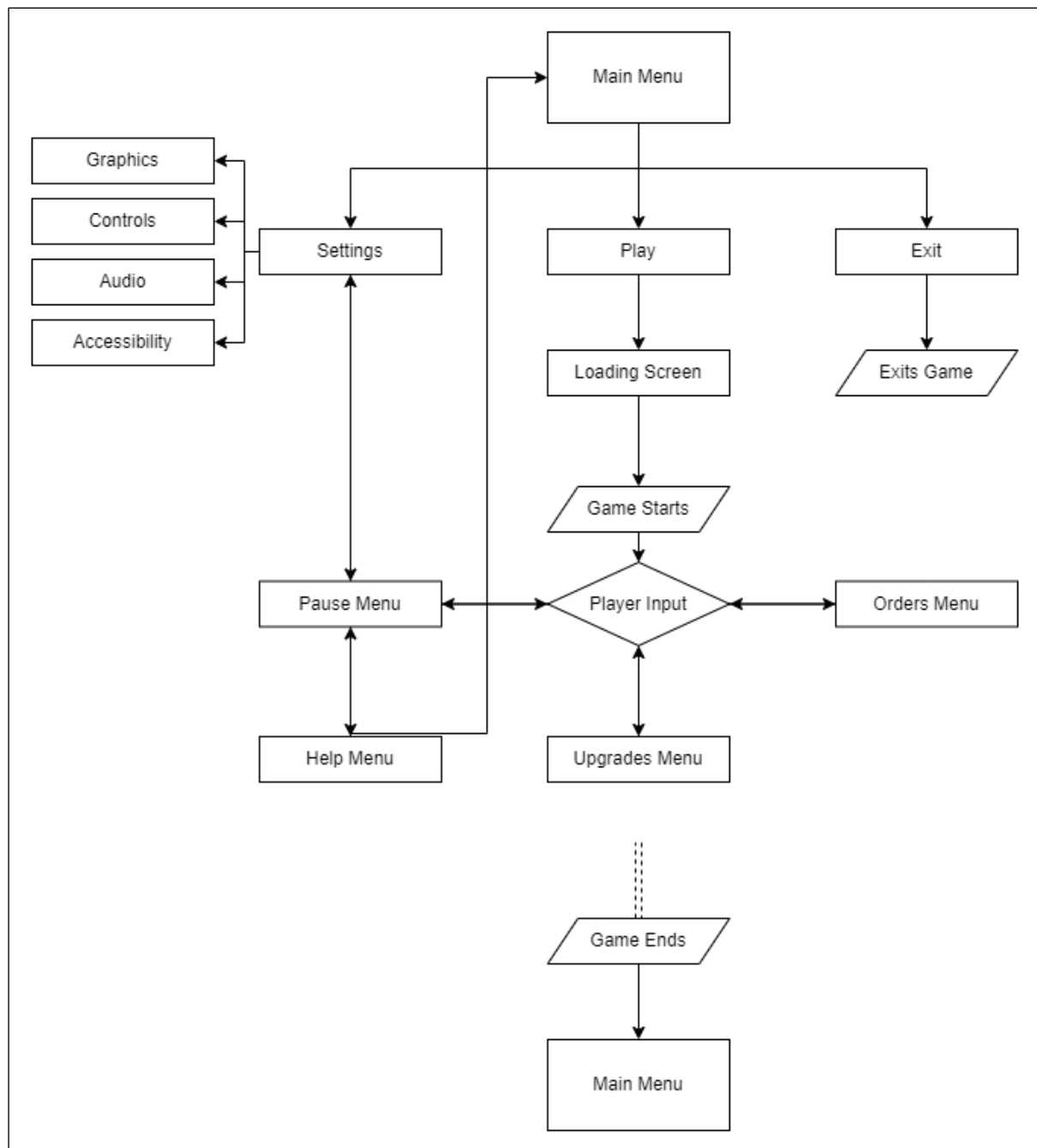- **Scroll bar:** Used to navigate through menu.

UI Relationship

Figure 21: Shaw, A. 2024. UI
Relationship Diagram.

Audio

Sound Effects

The game will not feature any spoken dialogue, but instead will use various sound effects to convey emotions and expressions. Additionally, the use of exaggerated and comedic sound effects will add to the overall style of the game. The following are examples of different sound effects that can be present in the final game.

Interactions

- *glass-clink-7-188132.mp3* - this sound will play whenever the player picks up or puts down the beverages. This is used to further immerse the player within the game, and also to provide an audible que that the player is interacting with the beverages.

- *cash-register-purchase-87313.mp3* – this sound is used whenever the player is interacting with the POS system. This sound is an audio que to show that the player is interacting with the system. This also provides further immersion for the player.

- *felt-tip-pen-drawing-arrow-03-103685.mp3* – this is an audio que that plays when the player is taking orders from customers. This is used to indicate to the player that they are taking orders. This sound also immerses the players in the game.

- *handle-paper-foley-2-172689.mp3 –* this audio que is used in the menu. When the player changes to a new tab, this audio queue will play to indicate that. This que also helps immerse the player in the game.

- *analog-appliance-button-15-186961.mp3 –* this audio que assists in helping the player know that they have pressed the button.

Background

- *footstep-1-83098.mp3 –* the footsteps sound effect are for the player and for the customers as they walk through the café.

- *store-entrance-bell-188054.mp3 –* this sound effect plays when new customers come into the café. This que makes the player aware of new customers while also immersing the player in the game.

Music

The music will be very casual and calm, to contrast the possible chaos that might ensue. The music may occasionally ramp up to add more pressure to the player.

Ideally music will be selected from a library of about two or three tracks and will be looped throughout the gameplay. Some examples include:

- ***tvari-tokyo-cafe-159065.mp3*** - This is the main track that plays in the background. It is meant to imitate the calm nature of a café while sounding appealing to the gamer. This genre of music also supports the visual style of the game and creates cohesion.

- ***06-slow-battle-194016.mp3*** - This track is an indicator that plays when the level is close to ending. It is meant to get the player to act faster to complete remaining orders. It also creates tension and as the player begins to rush to complete orders.

All audio files can be found under …\SoundFiles\…

List of References

Bing Image Creator. 2024. *Stylized semi realistic, cozy, outside front view of restaurant business, no people, no signs, no words.* [Online]. Available at: https://www.bing.com/images/create/stylized-semi-realistic2c-cozy2c-outside-front-view-/1-666ec9246f3d4e8e87c7e36016cc2d0e?FORM=GUH2CR (Accessed 16 June 2024).

Bing Image Creator. 2024. *Warm pixar stylized art style kitchen restaurant no people*. [Online]. Available at: https://www.bing.com/images/create/warm-pixar-stylized-art-style-kitchen-restaurant-n/1-663d368ea96c48008c01127ac1a3acb6?id=dYEUsTyUOG5Krarsn0p0fg%3D%3D&view=detailv2&idpp=genimg&thId=OIG4.R0nRV2vLsXZj4kIUjqRV&FORM=GCRIDP&ajaxhist=0&ajaxserp=0 (Accessed 9 May 2024).

Bing Image Creator. 2024. *Warm stylized themed restaurant no people*. [Online]. Available at: https://www.bing.com/images/create/warm-stylized-themed-restaurant-no-people/1-663d41fd8b6e42a1b926b4cdf19e5213?FORM=GENCRE (Accessed 9 May 2024).

Bing Image Creator. 2024. S*tylized restaurant warm colors ¾ top view full view of restaurant*. [Online]. Available at: https://www.bing.com/images/create/stylized-restaurant-warm-colors-32f4-top-view-full-/1-663dfa63193441358f70b7d24aa06bfe?id=uyuyvVgHxRSmhlHnHcS6HQ%3D%3D&view=detailv2&idpp=genimg&thId=OIG4.77gqIkFPT7OYK2RJ3f.8&FORM=GCRIDP&ajaxhist=0&ajaxserp=0 (Accessed 9 May 2024).

Pixabay. 2024. 0.6 Slow Battle. [Audio Asset]. Available at https://pixabay.com/music/video-games-06-slow-battle-194016/ [Accessed 15 June 2024].

Pixabay. 2023. TVARI – Tokyo Café. [Audio Asset]. Available at https://pixabay.com/music/beats-tvari-tokyo-cafe-159065/ [Accessed 15 June 2024].

Pixabay. 2022. Footsteps 1. [Audio Asset]. Available at https://pixabay.com/sound-effects/footstep-1-83098/ [Accessed 15 June 2024].

Pixabay. 2022. Felt tip pen drawing arrow 03. [Audio Asset]. Available at https://pixabay.com/sound-effects/felt-tip-pen-drawing-arrow-03-103685/ [Accessed 15 June 2024].

Pixabay. 2023. Handle Paper Foley 2. [Audio Asset]. Available at https://pixabay.com/sound-effects/handle-paper-foley-2-172689/ [Accessed 15 June 2024].

Pixabay. 2022. Cash Register Purchase. [Audio Asset]. Available at https://pixabay.com/sound-effects/cash-register-purchase-87313/ [Accessed 15 June 2024].

Pixabay. 2024. Glass Klink 7. [Audio Asset]. Available at https://pixabay.com/sound-effects/glass-clink-7-188132/ [Accessed 15 June 2024].

Pixabay. 2024. Store Entrance Bell. [Audio Asset]. Available at https://pixabay.com/sound-effects/store-entrance-bell-188054/ [Accessed 15 June 2024].

Pixabay. 2024. Analog Appliance Button 15. [Audio Asset]. Available at https://pixabay.com/sound-effects/analog-appliance-button-15-186961/ [Accessed 15 June 2024].