Malltopia Design Document

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Overview

Malltopia is a mall management game with the core components being: running a mall to generate income, encouraging the player to rearrange their mall to adapt to different situations, experiment with building with a variety of objects, and light-hearted humour.

Game Loops

Primary

- Build rooms
- Earn money

Secondary

- Get more customers
- Customers issues
- Resolve customer issues

Tertiary

- Decorate the mall

Inspiration

- Two Point Hospital/Campus

- Theme Hospital

- Planet Zoo

- The Sims

- Startopia

Mechanics

Building

Room Creation
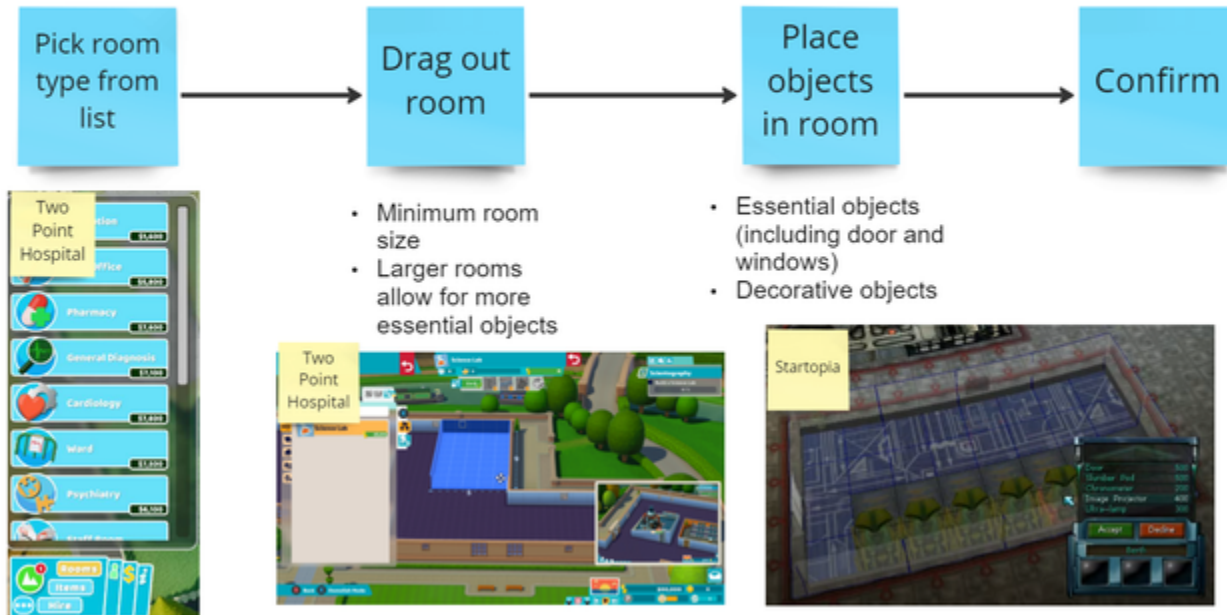
- Pick a room type
- Click to drag out the room area, click again to finish designating the area
- Contextual build menu opens
- Place the **key objects** on the list, these are required for the room to function.
  - One of these objects is a **product object**, customers will interact with this object before deciding whether or not to purchase it. Having more product objects will make customers able to get to the till quicker
    - Depending on what works in code, customers will either be *required* to check products before taking them to the till, or will just check them occasionally to make it look interesting
- Place optional decorative objects (AKA: any object that isn't specific to a room)

- Confirm room placement

Editing Rooms

After clicking on a room, a contextual menu pops up allowing you to edit it.

This will pull up the left panel which now functions as an editing panel.

Walls, Floors, Doors, and Windows

Walls

The colour of room walls can be changed.

Floors

The pattern of the floors and walls can be changed from their respective tabs on the edit room menu.

Doors

When the room build menu is opened, doors can be placed like objects, they create an opening in the wall. At least one door is required, but multiple doors can also be placed.

Windows

Windows are a wall-based item that can be placed on room walls. They can't be placed on the mall's exterior walls - even if a room is placed flush against the exterior wall.
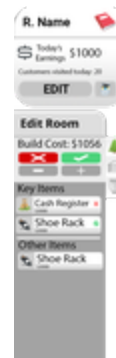
Shop Interest

Placement

Shop doors and windows generate interest over-time when a customer walks near them, the higher the interest, the more likely they are to visit that shop.

Objects

Objects can be placed anywhere in the mall. There are two types of objects, ground-based and wall-based, the latter can only be attached to walls.

Certain objects are also 'room-specific' meaning that they can only be placed within the room they're tied to, by using that room's build menu.

Mall Exterior

Mall Shape

The shape of the mall cannot be changed, it is pre-set. In sandbox mode you can choose which mall shape you start with. In campaign mode you are given one depending on the mission.

Customers

Flavour Stats

- Name

Functional Stats

- Happiness - an average of other stats
- Energy - depletes over time, restored at benches, diminishing returns each rest

Hidden Stats

- Maximum spending
- Intended spending
- Goal

Money

Customers enter the mall with an amount of money they intend to spend, and a maximum amount of money they are willing to spend. These stats are hidden to the player.

Customers will dip into their maximum money if they are sufficiently distracted with things they didn't come into the mall for.

Once a customer has hit their maximum spending limit, they will spend no more and likely make their way to the mall's exit.

Goals

Customers enter the mall with a specific goal in mind, on their way to their goal, they may get distracted by other shops and objects in the mall if they are interested enough.

Customers can have multiple goals (up to 3), but only one at a time is known to the player.

After purchasing the object, they may wander around the mall for a bit depending on their stats and goals.

Criminals

Customers who enter the mall to buy a product that is higher than their intended spending have a % chance of stealing the product instead, if their happiness is low enough and the further away the product price is from their intended spending (capping out at X% if the product is above their maximum spending).

Customers also have a base % chance of already being a criminal when they enter the mall, this % chance is increased the higher your mall's average happiness and current income is. *This % chance must not be worse than the frequency with which an unhappy, poor mall creates criminals.*

Employees

Flavour Stats
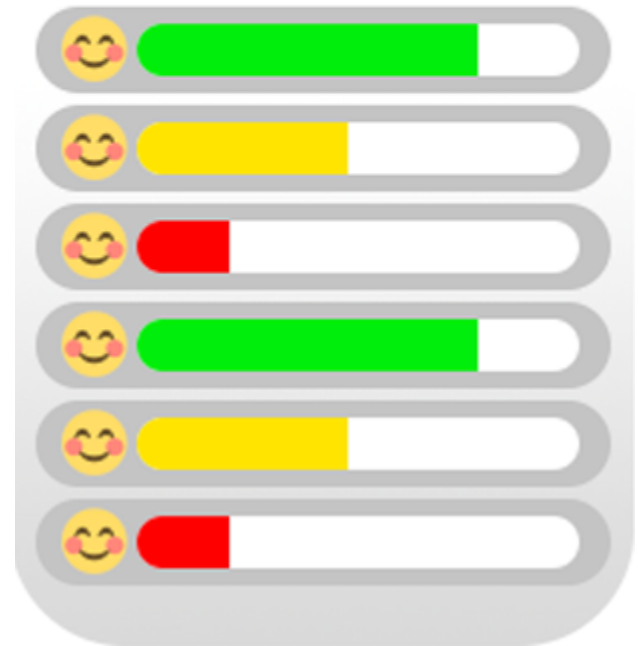
- Name

Functional Stats

- Hiring fee - how much it costs to hire them
- Wage - how much you have to pay them at the end of each day (can be changed), better staff will expect higher pay
- Energy - staff need to regularly take breaks from work, at zero energy they will stop working and either look for a staff room, or wander around and regenerate energy slower if there is no staff room

- Happiness - how satisfied the staff is with their wage, the staff member can be given a bonus (flat, one-time sum of money) to temporarily improve their happiness, if you don't want to increase their daily rate

Types

- Mall Cop - Reduce crime level in the mall by catching thieves
- Janitor - Cleans trash that customers drop on the floor

Time

The game operates on a 24 hour in-game timer (24 hours in-game is approximately 3 minutes real-time). This system allows for timed-events to operate.

The time will be displayed on the UI in a 24hr format.

Events

Throughout the game, several types of events can occur that the player will /can deal with, or even take advantage of. It encourages the player to keep the mall layout adaptable and shuffle things around often.

When these events occur, a notification box will pop up on the right side of the screen that the player can click to get more information.

Planned Events

The player is notified of these events X days in advance. They are large enough events that the player may want to prepare for them by changing /improving their mall or hiring additional staff.

E.g. In 2 days, a Video Game convention will be in town, the mall will receive extra visitors (some cosplayers), they will be more interested in nerdy shops (video games, comics/books).

Immediate Events

These happen immediately without prior warning. They will require the player to react and adapt quickly to the situation.

E.g. A zombie invasion has broken out in the mall, hire additional security to deal with the outbreak

Triggered Events

Similar to the planned or immediate events but require the player to opt in, in-case the player doesn't want to do them. The opportunity to do the event will disappear after 3 in-game days if the player does not accept them. Alternatively the player can dismiss the event entirely if they don't want to do it within that time.

E.g. Investors believe that the mall could do with livening up, they will pay $1000 if you add 5 additional pianos and entertainers to the mall and keep them for 7 days.

Consequence Events

These occur as a consequence of your failing to keep the mall in good condition, they can help you get out of a bad situation, or put you in an even worse one.

E.g. Crime is too high! Reduce the crime rate to 10% within 3 days or 2 of your managers will quit!

Maintenance Required

These are more like mini-events. Janitors need to maintain certain objects like vending machines or fountains, if they aren't maintained, they will break and require additional money and time to fix.

Progression

Higher tier rooms will cost more per-tile and the rooms will earn more per-sale while active. This is a natural way of making it feel as if the player is working their way up without having a traditional research or unlock system (which we had initially planned).

Mall Stats & Analytics

Money

Base UI

Current money is displayed alongside income. Income is the money received every 10 seconds (record all money received within and update every 10 seconds). Duration can be adjusted at coder's discretion based on what reads best.

Happiness

The average happiness of all customers currently in the mall

Crime

The crime bar reflects how the last few products left the mall, by purchase, or theft. The greater the number of thefts, the higher the crime rating (adjust number based on what reads better).

Visuals and Audio

Camera

The game will use a 30° camera angle, the camera can be rotated with the middle mouse button and panned around using the keyboard or right click and drag. The views can be swapped between perspective and orthographic.

Style

The style is aiming for a similar look to games like Planet Zoo or Two Point Hospital, with some elements being more cartoony than others (such as the characters).

Architecture

Room walls and floors are re-texturable

Characters

Malltopia currently contains 3 models:

- Generic Male model (+ 3 different hairstyles)
- Generic Female model (+ 3 different hairstyles)
- Security Guard model

They were modelled in such a way that their different body parts can be re-coloured in order to have a larger variety of customers on-screen without having to individually render out different colour variations for the models.

Symmetry: Object X

persp1

Animation

Animations are relatively exaggerated to make them more readable and the animator kept in mind that for the most part the game will be viewed from a top-down perspective.

Character Animations

- Idle (all models)
- Walking (all models)
- Running (all models)
- Pick up from ground (Generic male + female only)
- Pick up from shelf (Generic male + female only)
- Sitting (all models)
- Transition into sitting (all models)

UI

STAFF 👤14
☺ ▮▮▮▮▮▮▮▮▮▮▮▮
$3,200

🖌 **Bob**
$500 ☺ X

🛡 **Frank**
$1200 😐 X

💼 **Karen**
$1500 ☹ X

$3,200

$3,200
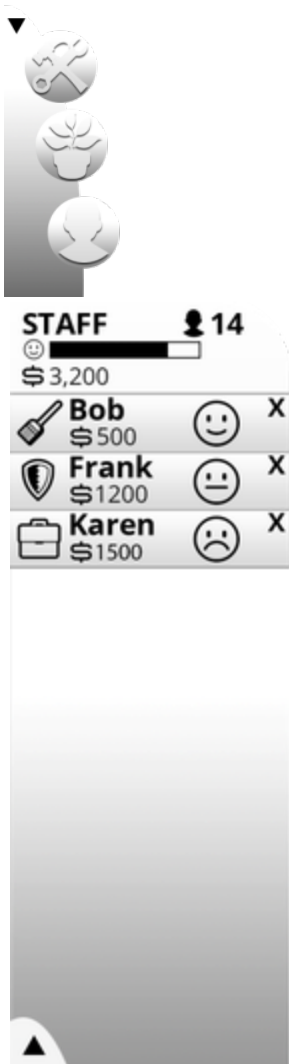
Audio

We were lucky enough to have two individuals from the sound design course work on the sound for Malltopia. They were given a list of sounds to create for the game as well as back-and-forth feedback over Discord.

[Link to audio spreadsheet]

They were given guidance on our art direction for the game so the music and sfx could match the style.

Tannoy

Periodically the player will hear a tannoy announcement in the mall. These announcements are currently just for added flavour and humour. The voices are done by members of the team and mixed by the sound designers.

Settings

Graphics
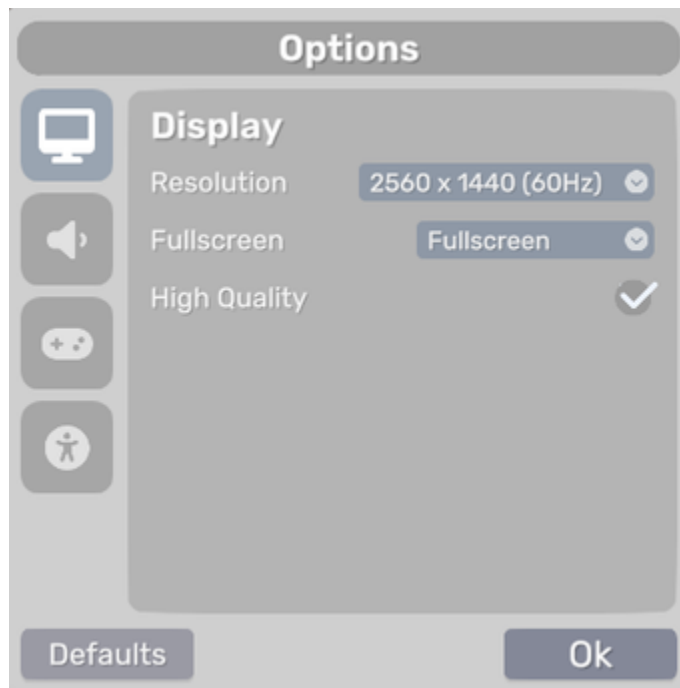
Audio
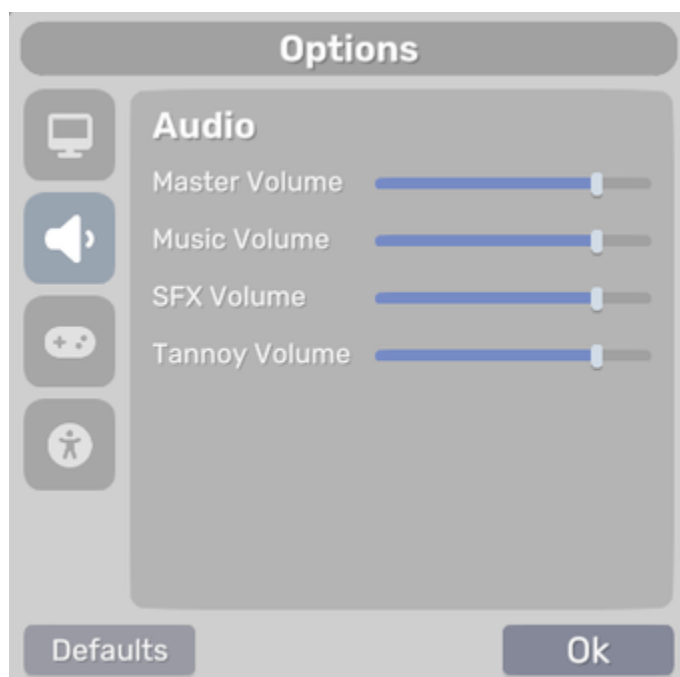
Gameplay
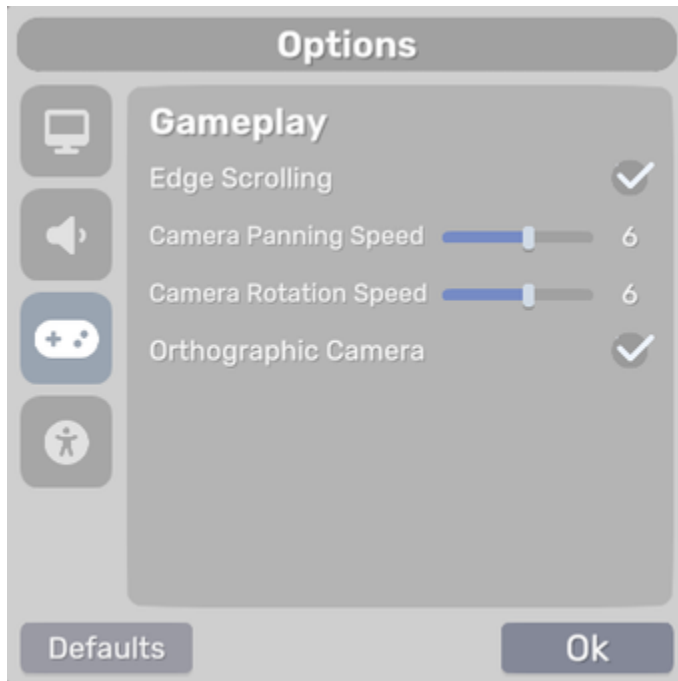
Controls

Keyboard & Mouse

Bindings

- Camera movement - WASD/Arrow keys/Right click & drag
- Camera rotation - Middle click & drag
- Select - Left click
- Deselect - Esc/Right click (while selected)
- Pause/Close window - Esc
- Time controls (can also click UI)
    - 0x speed - Space
    - 1x speed - 1
    - 2x speed - 2
    - 3x speed - 3

Accessibility

In future versions we would like to include more accessibility settings if possible, more time needs to be spent researching what accessibility options we can implement.

Planned Features

These features were initially intended to be included in the game but due to time constraints they were cut. If the game is developed further, these features will be added.
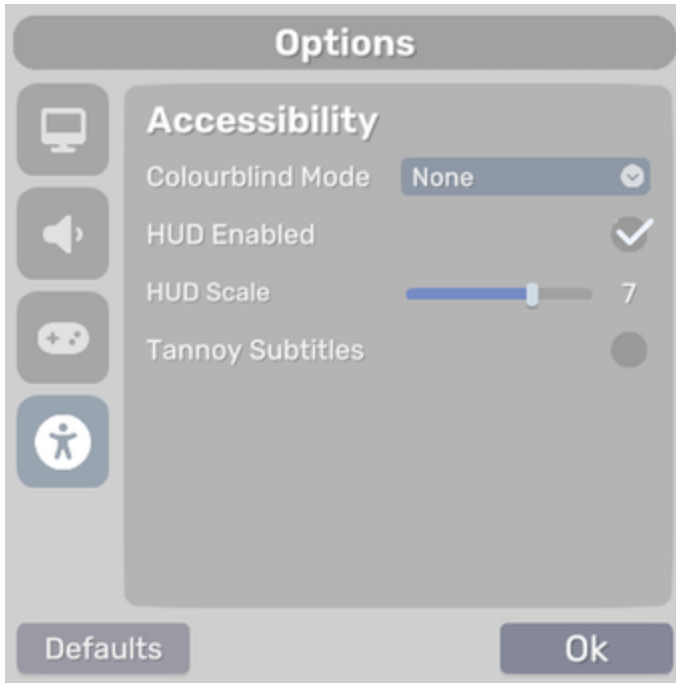
Gameplay

Room Creation

In future the room construction could be made to be more in-depth, placing individual walls instead of entire rooms, however we would need to consider how this may change the flow of the game, so it *may not* be implemented.

Floors

The mall floor itself (outside of rooms) could be customised

Play Modes

Sandbox is currently the only playmode in the game, and its parameters are not customisable, but a campaign mode and more customisable sandbox mode are planned for the full game.

Sandbox

The player can choose a starting layout for their mall as well as a few parameters to change their experience, this mode doesn't have an end-point.

<u>Parameters</u>

- Starting layout
- Starting money
    - Less
    - Default
    - More
    - Custom
- Customer frequency

- None
- Less
- Default
- More
- Bustling

Campaign

The player progresses through a series of scenarios. Each scenario you are given a mall with a different layout and starting conditions - rooms may already be placed, staff may already be hired.

The player is given a series of missions to complete, after progressing through all of them, the scenario is complete and they unlock the next one.

Time

There would be an option to change the time to a 12hr format.

We may also like to experiment with the day/night cycle having a greater effect on gameplay. For example, varying the number of customers that visit the mall based on the time of day (less customers at night).

Shop Tiers

There are 3 tiers of shop sign (1 being the lowest), each one has an increasingly extravagant visual (basic rectangular sign -> big neon sign), the player can upgrade shop signs with money.

Shops start with a tier 1 shop sign.

Objects

Certain objects will be re-colourable.

Staff

- Janitor - Is in-game but only cleans currently. We would also want appliances to break down over-time so that janitors have to maintain and fix them
- Manager - speeds up the operations of stores, keeps customers in line longer by speaking to them in the line
  - Once you go past 3 shops, you need a manager for each 3 shops you have, otherwise the shops will close
- Entertainers - Clowns, musicians, performers. They entertain customers and keep them happy

Staff Stats

- Rating (1-5 stars) - determines how quickly they perform tasks, and lowers the likelihood of mucking it up
- Traits - staff can have up to 3 traits, these can be good or bad and change how they perform at different tasks

Customer Stats

Flavour Stats

- Brief description - Would be pulled from a bank of jokey descriptions, just for flavour. For both customers and staff.
- Portrait - Displays the customer/staff appearance

Functional Stats

- Happiness - Is in the game but does not function as originally planned. The final version would be an average of all the other stats
- Food - Replenished by food stands/shops
- Drink - Replenished by water fountains/shops
- Bathroom - Replenished by toilets (toilets are in but do not function currently)
- Cleanliness - Depletes when surroundings are dirty
- Entertainment - Depletes if the surroundings are bland or no entertainers are nearby

Mall Exterior

Additional Floors

You can purchase a second floor of the mall, depending on which mall layout you started with, the second floor will have a different amount of space. Most malls will not have the second floor be the same shape as the first floor, they will often have gaps in the floor that the customers can look over.

Some malls allow you to purchase an underground floor.

Parking Lot

Outside the mall is a parking lot, you can choose the price of parking tickets. Too high a price will deter customers, too low a price will congest the parking lot. The ideal price depends on current events and the overall quality of your mall.

Customer Goals

If there are signs that are on the way to their goal, they will have an easier time getting to it. A lack of signs may make it hard for the customer to find their goal, which will make them more likely to get distracted, but also more likely to leave early out of frustration.

Likewise a customer leaving a shop will have the same issue, taking longer to find the exit, but being likely to get distracted.

E.g. Purchase shoes/browse/look for entertainment/eat/steal

Analytics
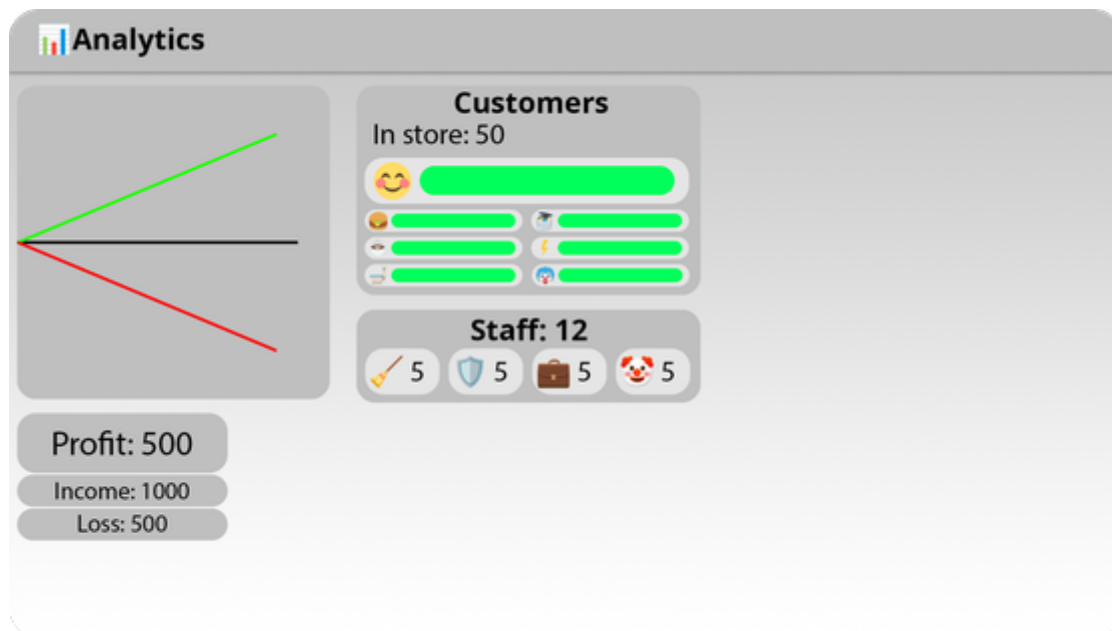
An analytics window was planned to be implemented that displayed the mall's overall statistics, this would go into the full game.

Analytics

- Graph displaying Income, Profit and Loss for today so far
- Yesterday's profits displayed as a number
- Profits so far today displayed as a number
- A log of all transactions (purchases, thefts, building)

Visuals

Character Animations

Semi-completed animations that weren't included:

- Angry reaction (Generic male only)
- Surprised reaction (Generic male only)
- Talking (Generic male only)

Incomplete animations:

- Laughing reaction

Character Expressions

The model will be designed in such a way that the character's face can be deformed in-engine for creating expressions.

The expressions are as follows:

- Neutral blinking
- Excited (mouth open, smile, brows up)
- Angry (furrow brow, mouth frown)
- Surprised (mouth open, brows up)
- Smile

Settings

Controller

When in controller mode, there is a semi-transparent white circle that the camera centres on (to indicate the cursor location).

When menus are selected it might be good of the menu pulses (enlarges and returns to normal) very slightly to indicate that we're on that menu (probably more of a UI consideration though)

Bindings (Xbox/PS5)

- Camera movement - Left analog stick
- Camera rotation - Right analog stick
- Select - A/X
- Bottom left menu - LB/L1
- Top right menu - RB/R1
- Pause - Start
- Cancel/deselect - B/O
- Change tab (while in menu)
  - Left - LB/L1
  - Right RB/R1
- Time Controls
  - 0x speed - D-pad down
  - 1x speed - D-pad left
  - 2x speed - D-pad top
  - 3x speed - D-pad right

Customisation

- Camera panning speed (slider)
- Camera rotation speed (slider)
- Invert rotation direction