Game Design Document

MIDNIGHT MEATBALL

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Version #1.0

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1. Introduction

MIDNIGHT MEATBALL   **CONTENTS**

1. Introduction

"Midnight Meatball" is a single player and co-op 3D physics simulation game where players play as a meatball named Olaf who steals furniture from his work to pay off the mafia. Set within a furniture store called "Okea", players must move furniture from the display room to the mafias loading truck in order to earn money before time is up.

1.1 Scope

In a Isometric Top Down view the player controls the character. The character can walk or run around the available area, grab, push or pull furniture to get it to move. The objective of each level is to bring enough furniture to the mafia within a time limit. The game will have a simple cartoon look, as well as controls.

2. Overview

2.1 Concept

The player controls a meatball character to steal furniture from an Ikea like store called Okea. The objective is to move enough furniture to the back within the time limit, to complete the level. As the player continues new challenges and areas are unlocked in the game.

2.2 Core X Statement

The player plays as an OKEA employee who steals furniture to pay back Mafia, sacrificing themselves to save their children.

2.3 Game Pillars

- Sacrifices and risks must be made
    - Stealing furniture to pay off the mafia to save children
    - Must meet quota in time or something bead happens to the child
    - If caught the player gets put into jail
- IKEA
    - Showrooms with furniture
    - Two floor buildings
    - Carts and baskets
    - Security and security cameras
- Simple
    - Easy controls
    - Easy to get back into
    - Difficulty comes from obstacles

3. Gameplay

Player grabs and moves furniture as quickly as they can to a truck in the back.

3.1. Player Controls

Title	Description	Keyboard and Mouse Controls	Controller Controls

Movement	Character runs in the direction it is facing	WASD	Left JoyStick
Grab/Drop	Character Grabs the item that is in front of them	Left Mouse Button	A Button
Push/Pull/ Carry	Character carries, pushes or pulls the item, depending on size.	WASD	Left Joystick
Throw	Character throws carried item in direction they are facing	Right Mouse Button	X Button
Jump	Character jumps	Space Bar	B Button

3.1.1 Movement Details

Character should always be at a running speed. Grabbing an object will affect movement based on the size.
- Carrying Small Object: 75% speed movement.
- Pulling/Pushing Medium Object: 50% speed movement.
- Pulling/Pushing Large Object: 25% speed movement.
- Pulling/Pushing Flatbed Cart:
    - 0/4 storage: 90% speed movement.
    - 1/4 storage: 75% speed movement.
    - 2/4 storage: 60% speed movement.
    - 3/4 storage: 45% speed movement.
    - 4/4 storage: 30% speed movement.

3.1.2 Carry, Push and Pull Details

- Small Furniture: Can only be carried and thrown.
- Medium Furniture: Can only push, and pull can't be thrown.
- Large Furniture: Can only push, and pull can't be thrown.

3.1.3 Throwing Details

- Small furniture can only be thrown.
- Small furniture can not be thrown onto the cart.
- Small furniture can be thrown in the truck.
- Small furniture makes a sound hitting walls, floor and other furniture.

3.2. Animation

3.2.1 Character
- Running Animation

- Jump Animation
- Small Furniture Related
    - Picking Up Animation
    - Dropping Animation (Reverse of Picking Up)
    - Carrying Movement Animation
    - Throwing Animation
- Medium and Large Furniture Related
    - Pull Animation, animation speed affected if medium or large
    - Push Animation, animation speed affected if medium or large
    - Grab Animation
    - Let Go/Drop Animation (Reverse of Grab)
- Dying Animation
    - Getting hit by guard, character should get squished
- Victory Animation
    - Timer ends and you reach your goal, victory dance.
- Clicking elevator button animation

3.2.2 Guard

- Walking Animation: Base speed and walking
- Searching Animation: When it loses sight of character, looks around on the spot
- Running Animation: When sees character chases, him
- Hitting Animation: When close to the character, guard would hit them with a club
- Alert Animation: When hearing a sound or sees character should be alerted and start chasing
- Clicking elevator button animation

3.2.3 Camera

- Back and forth: Camera should turn back and forth.
- Alert: THe camera should stop moving and flash red, if it spots the character.

3.2.4 Flatbed Cart

- Filling the Cart: As the cart is filled the animation or model of the cart gets more and. more boxes appear on the cart. Boxes will be different sizes.

3.2.5 Truck

- Truck door closing, and driving away at the end of the timer.
- Truck shakes to show furniture has been put into the truck.

3.2.6 Sauce Pipe

- Flow of the liquid sauce out of the pipe.

3.3 Furniture

3.3.1. Types

The different types of furniture are divided into living room, bedroom, cafeteria, children's area, and kitchen.

3.3.2. Weights

The different types of furniture are divided into light, medium and heavy. Light items are the only ones that can be thrown. The others are dragged on the ground, heavy items such as couches are the slowest to move, but are worth the most.

4. Character

Olaf, the main character, was a loving father, husband and loyal Okea employee. His life changes after his wife dies from hitting her expiry date. Now in debt to the mafia who helped pay for her medical bills, he must steal furniture from Okea to repay them and to get his son back- of whom was taken as a hostage. If Olaf gets caught stealing by security guards or cameras he will be sent to jail. If he doesn't fulfil his quota, the mafia will kill his child.

4.1 Character Camera

The character camera will be top down at an angle of 30 decrease, back 400 cords and up 500 cords.

CHARACTER CAMERA

30° CAMERA ANGLE
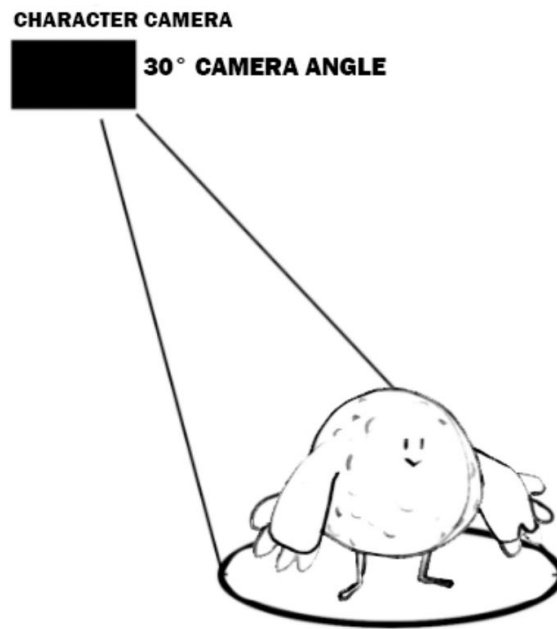
4.2 Character Concept and Models
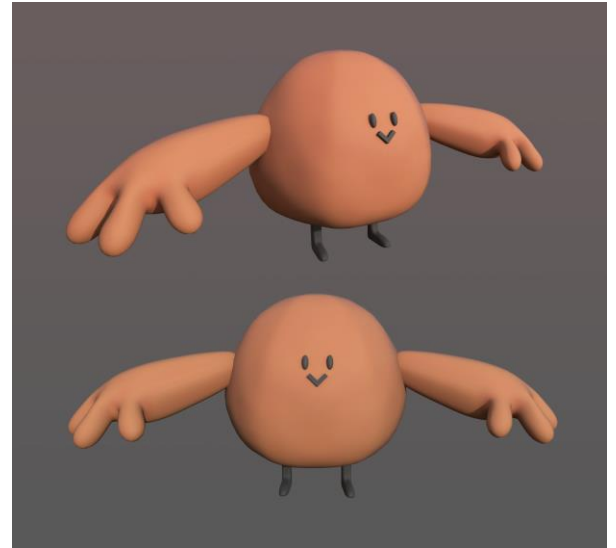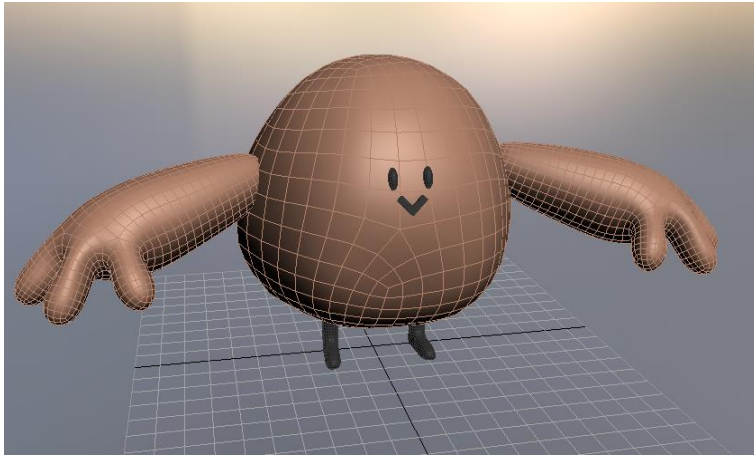
5. Mechanics

5.1 Security Guard

5.1.1 Movement

The security guard will travel through the available areas except the loading dock. There will not be a set path for the guard, it will walk on the main walkway paths, but will randomly decide which direction it will take. Making each run through a bit different. With being a bigger meatball they are restricted in where they can go. Furniture can block their path.

5.1.1.1 Walking

Unless chasing the player the guard should be walking the available areas at 50% of the characters movement speed.

5.1.1.2 Running

Seeing the player or hearing sound will cause the guard to run. The running speed will be 120% of the character's movement speed.

5.1.2 Sight

The security guard will see at a distance of **15 Unreal Units (15 cm)**.

5.1.3 Chasing

The security guard will chase the player if they spot them. They will chase them until they lose sight of the player, or gets tired. The security guard will get tired after 30 seconds of chasing the target. If they catch the player they squish him with the beating stick, causing the player to lose. The security guard will ignore camera alarms as they will be chasing the character already.

5.2 Security Camera

5.2.1 Rotation

The cameras are attached onto the walls and ceilings and stay stationary but rotate on the spot. They can rotate from 90 degrees to 180 degrees, depending on their positioning.

5.2.2 Sight

The cameras have a sight range of 10 Unreal units (10 CM), with a circle of light on the ground of a diameter of 5 Unreal units (5 cm), to represent the current focus of the camera. See diagram for more clarity.
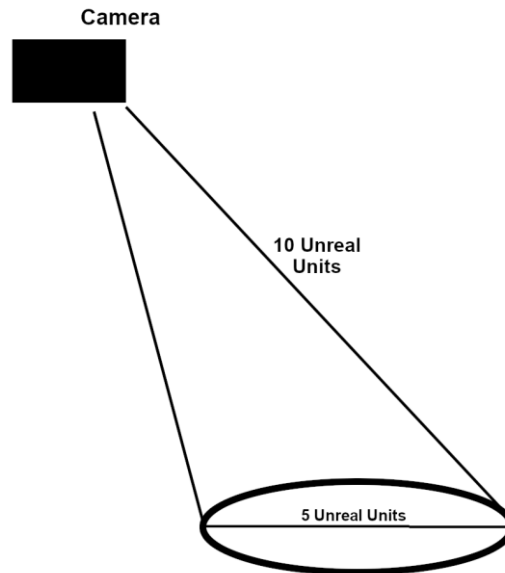
5.2.3 Alarm

If the camera spots the character an alarm will go off. Causing the player to lose time.

5.3 Flatbed Cart

5.3.1 Maneuvering

The flatbed cart is designed to help carry items to the truck. The cart is always a set size, almost as big as a couch. The difficulty is the back wheels of the cart are the ones that turn, making maneuvering challenging.

5.3.2 Storage

The flatbed cart has 4 storage slots for furniture.The slots are taken up determined by the size of the furniture. Small furniture takes up 1 slot, medium furniture takes up 2 slots and large furniture takes up 4 slots.

5.3.3 Movement

The flatbed cart can not move on it's own, and must be pushed or pulled. The speed of the cart is determined by how many slots are taken up in the cart. See 5.1.1 for details.

5.3.4 Controls

Title	Description	Keyboard and Mouse	Controller
Unlocking	The player needs to use a coin to unlock the cart	E Key to unlock cart	Y Button
Grab, Push and Pull	The player walks to the back of the cart, and clicks the grab button. The character then grabs the handles and is able to move around with their movement controls. Clicking the grab button again will let go of the cart.	WASD, to move Left Mouse Button to grab and let go.	A Button to Grab Left JoyStick to move
Store Item	The player moves beside the cart while holding furniture will receive a prompt to store the item onto the cart.	E Key	Y Button
Grab Item	The player walks to the cart with no furniture, and will receive a prompt to retrieve an item. A hud will appear over the cart, where the player can select what item to get. It then appears into the character's hand as if they were grabbing it.	E Key to open/close hud A and D Key to select item from hud Left click to select item	Y Button to open/close hud Left Joystick to move in hud A to select item

5.3.5 Hud

When retrieving an item from the cart a hud will appear on the screen above the cart. 1-4 circles with a mini picture of the item(s) currently in the cart will appear. The currently selected item will appear highlighted and slightly bigger than the rest.

5.4 Elevator

5.4.1 Purpose

The elevator is designed to help bring furniture and carts up and down from the second floor. It also moves the character and security guard from the two floors.

5.4.2 Controls

5.4.2.1 Riding Elevator

The elevator doors will always be open unless it is being moved. The player walks into the elevator, and presses a button in the elevator. The elevator doors will close and move up or down depending on its current location. To press the button the player will need to face it and click E.

5.4.2.2 Summon Elevator

To summon the elevator, move to the button on the outside of the elevator door, press the button, which will close the elevator doors and start to bring the elevator to the level you are at. The doors will open when it reaches your floor.

5.4.2.3 Rules of Elevator

- If there are characters or furniture blocking the doors, the doors will not close, and the elevator will not move. The player will need to move the obstruction and press the button again.
- If the elevator is in use, the elevator will finish its current travel, and then have a 5 second cooldown, before the player or security guard can use it again
- The security guard can summon and ride the elevator like the player.

5.5 Thrown Object

- Only small furniture can be thrown.
- If a piece of furniture is thrown it will cause a noise, that will alert the security guard. Making the security guard take the shortest route to the noise.
- Throwing furniture at the guard will alert them to your exact location.

5.6 Truck

- The location to drop off the furniture,

- The truck is stationary until the end of the timer where the doors close, and drive away animation occurs
- There is no limit to dropping furniture into the truck
- When furniture is added into the truck your goal meter will go up by the value of the furniture
- Once the item is in the truck it can't be taken out

5.6.1 Controls

Title	Description	Keyboard and Mouse	Controller
Drop	The player drops small, medium or large furniture into the truck. A prompt will appear over the truck when the player is close, with a piece of furniture in hand.	Left Mouse Button	A Button
Throw	When a small piece of furniture is thrown into the truck. If the player throws the truck and lands or is still in air near the truck door, it will automatically go in.	Right Mouse Button	Throw

5.7 Coins

5.7.1 Purpose

Coins are hidden within furniture and have a chance to fall out when the character picks up the furniture. They are used to unlock the **Flatbed Cart** within level 2 and up. Any extra coins will go to the final total of the level at the end.

5.7.2 Design

The coins are cartoon like big circles that are gold, and when they fall out of the couch they fall to the floor like normal coins.

5.7.3 Details

- Each coin is worth one dollar.
- A couch can have 0-5 coins in them.
- The player walks over them to collect the coins, which immediately adds to their current progression for the level.

5.8 Sauce Pipe

5.8.1 Design

The Sauce Pipe will look like a big cartoon pipe coming from areas in the restaurant level food section. It will have flowing meatball gravy coming from it that will look sauce-like.

5.8.2 Details

- The sauce will slow the player by 40%

6. Level Details

6.1. Living Room (Level 1)

The Living Room area will have four to six display living rooms, each uniquely different. There will also be parts of the living room area just to display the different furniture in rows. We will put the more expensive furniture in the far displays to make the players try to get the larger value items. There also will be a path that goes throughout the level allowing at the start easy access but will become full of furniture if the players hit and move items while trying to get back to the loading dock.

This is the first level where the player encounters the **security camera** obstacle and will learn how to deal with it.

The **loading dock** is where the player will spawn and will have to bring the furniture within the time limit to get the value of the furniture for the mafia.

Example Map For Living Room Display

6.2. Bedroom/Wardrobes (Level 2)
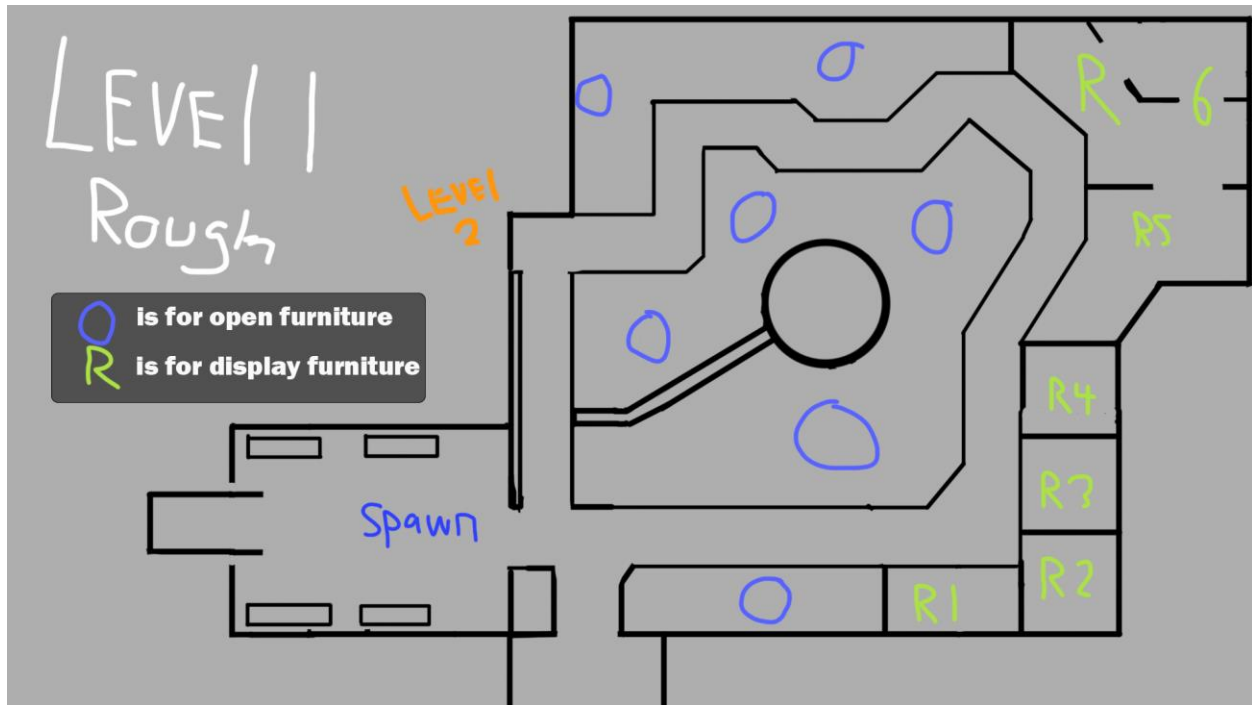
The Bedroom area will have four to six display bedrooms, each uniquely different. There will also be parts of the bedroom area just to display the different furniture in rows. There should be a big walkway in the middle of the area to move furniture.

There will also be a small Wardrobe section part of the bedroom making the space of the level 35% larger than the first living room level. It will mainly be open furniture but will have at least 1 - 2 display rooms just for wardrobes. This will also be the first level that includes the security guard.

6.3. Restaurant (Level 3)

The Okea restaurant level will have the same layout of what a normal Ikea Restaurant has with some small changes. This will be the first layout without displays but more like sections. The counter space with the lines and the drink machines will be in one part or side of the level and the seating zones will be the rest with small changes.

This level will also be on the second floor of the okea so it will give the player lots of time and the fun of using the **elevator** or stairs for the first time in the game. You will also encounter a new obstacle that will just be on this level called the **sauce pipe**.

6.4. Children's Section (Level 4)

The children's section will be on the second floor of the okea right beside the Restaurant level. In the Restaurant level you can even see this section is walled off by a door with small windows allowing the player to see the next level.

In this level the player will be going for children items and furniture and will be set up like a smaller version of the Living Room level.

6.5. Kitchen/Dining (Level 5)

The Kitchen and Dining section of the Okea will be back on the first floor. This section will have around 6 - 8 displays having a lot of different kitchen designs and some will also have dining rooms as part of the displays.

There also will be a path that goes throughout the level allowing at the start easy access but will become full of furniture if the players hit and move items while trying to get back to the loading dock.

7. Art Guide

Heavily inspired by games like *Gang Beasts, Overcooked, Animal Crossing* and *Moving In* for their cute art styles, the art of the game consists of bright and pastel colours as well rounded shapes to give off a cute atmosphere for players to interact in. The art in the gameplay counteracts the dark narrative adding irony and juxtaposition (having a cute and bright atmosphere while the character attempts to steal furniture to save their child from the mafia).

7.1 Colour Palettes

The palettes for the overall game are low saturation with high contrast. Display rooms and furniture utilize a variety of warm tones, bright colours and pastels to provide the player with a cute and charming atmosphere.

A lot of the colour schemes and palettes are also taken from past and recent IKEA catalogs and room displays found on the IKEA online catalog and other internet archives.

Black is used as an accent rather than a full colour block to avoid harshness in the rooms and furniture. Darker tones are achieved with deep blues, purples, and blue-greens.

#A0C1B6	#F5D2DE	#FEE800	#EDD4B9	#DDDDE0	#1F324D	#D9A548

#BF7B9D	#AAE4E1	#69546C	#C11269	#F6D686	#E9EDF3	#2B8B32

01　02　03　04

05　06　07　08

09　10　11　12

13　14　15　16

UI

7.2 Anatomy

Characters are designed to fit within the overall cute theme of the game. Being rounded and cute meatballs, all features of the characters such as the arms and legs are rounded and limbs should be fluid, having no harsh and rough edges. The main body being the base of the meatball is round and textured invoking squishiness. The arms of the meatball are also exaggerated to emphasize interactions with furniture such as pushing, pulling and carrying being large with big fingers. Due to the perspective of the camera, the legs of the character are not always visible, thus not needing as much detail as the rest of the body.

The character size compared to the furniture mirrors reality as they are the equivalent to the average size person standing next to an average sized couch.

Enemies such as the mafia and OKEA security guards are also meatballs however utilize taboo and exaggerated costuming to differentiate who is who. The security guards have large mustaches embodying a stereotypical cop/park ranger look. The mafia bodies will have more discoloration and scars giving a rugged and beat up look like stereotypical gangsters.
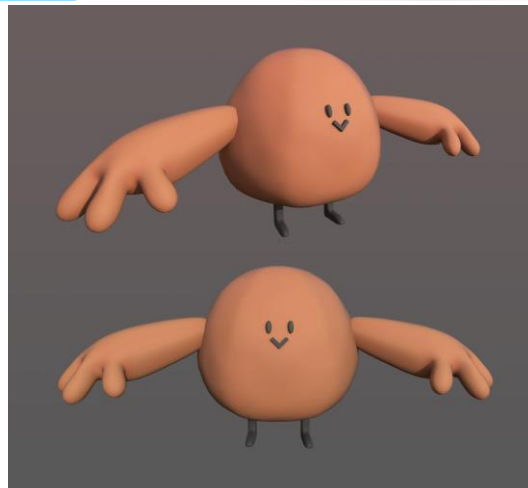
7.3 Furniture

Heavily inspired by *Animal Crossing*, furniture has a roundedness to it, avoiding harsh lines where possible. Furniture categories such as couches, chairs, tables, beds, etc. have several styles with different colour variations according to the colour palette.

Furniture and dimensions have been taken directly from the IKEA website and implemented in each model. The art style will be in between where animal crossing and Ikea meets, kinda like a 35% realism and 65% stylized.

(3D artists look at the white bed below, which is the around the style we are looking for. Use the overall pictures below of the normal Ikea to animal crossing for ideas on how you make the assets look.) https://www.ikea.com/ca/en/rooms/living-room/ follow this link for this.

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窗簾能巧妙隔開臥室
讓大人們保有獨立隱私的感覺
卻依然陪伴在寶寶身旁

新品
④ PUDERVIVA
單人被套組
$2,299

⑤ FLÅDIS 置物籃
$379

亞麻布料是由天然
且可再生的纖維製成
隨著歲月流逝
它會變得更加柔軟美麗

⑦ VILTO 儲物椅凳
$990

1　AINA 布料 $300/每公尺
　　100%亞麻・寬150cm 901.598.87
2　VÅRELD 床罩 $1,699
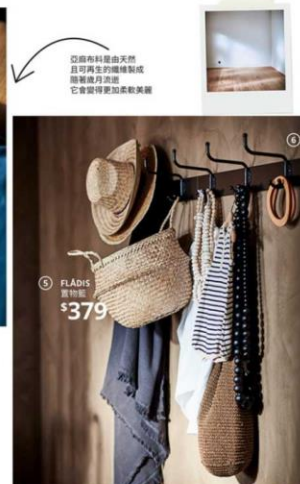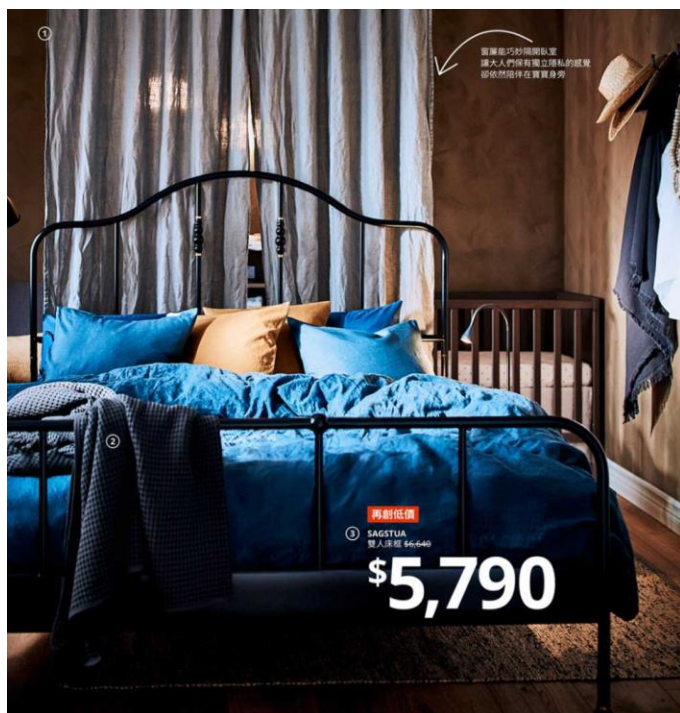　　100%純棉・寬230×長250cm 403.464.48
3　SAGSTUA 雙人床框 再創低價 $5,790
　　去年$6,640 鋼質外覆粉末塗料・
　　寬158×長208, 床140cm
　　適用床墊尺寸 寬150×長200cm
　　價格包含LURÖY床底板條；床墊及寢具需另購
　　492.689.12

4　新品 PUDERVIVA 單人被套組 $2,299
　　100%亞麻・含1件150×200cm被套
　　及1件80×50cm枕頭套・104.671.87
5　FLÅDIS 置物籃 $379
　　海草上透明漆・直徑25, 高32cm 403.221.74
6　PINNIG 3掛勾 掛架 $499/每件
　　鋼質外覆粉末塗料及鋁質・寬79×深17, 高16cm
　　603.297.92
7　VILTO 儲物椅凳 $990
　　實心樺木上透明漆・寬48×深30, 高45cm
　　203.444.50

築巢進行式 55

窗簾能巧妙隔開臥室
讓大人們保有獨立隱私的感覺
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　　603.297.92
7　VILTO 儲物椅凳 $990
　　實心樺木上透明漆・寬48×深30, 高45cm
　　203.444.50

1 STENMÄTARE 窗枕套 $200
   100%純棉．長50×寬50cm 404.725.16

2 VIGDIS 靠枕套 $300
   100%純棉．長50×寬50cm 504.326.81

3 BILLY 系統書櫃 $1,990/每件
   鋼皮表面．寬80×深28，高202cm 103.515.68

4 BERGSHULT/SANDSHULT
   掛牆式層架 $715/每級
   鋼皮表面．寬120×深30cm 093.260.23

5 BESTÄ 系統附門電視櫃 $5,700
   鋼皮表面及玻璃板．寬120×深42，高74cm
   白色/Lappviken/Stubbarp 白色 491.863.27

6 LANDSKRONA 三人座沙發 $25,990
   皮革及椅背外圍架墊為人造皮/厚胺纖維。
   寬204×深89，高78cm
   Grann/Bomstad 金棕色/木質 692.702.97

7 OMTÄNKSAM 萬用毯 $990
   100%羊毛．寬60×長160cm 304.237.53

8 POÄNG 扶手椅 $3,995
   55%椿葉．25%聚酯纖維．8%合板．
   12%貼皮樺葉積層板．寬68×深82，高100cm
   實木貼皮．樺木/Hillared 灰色 291.977.51

9 OMTÄNKSAM 咖啡桌 $5,990
   高壓美耐板及實心樺木。
   長115×寬60，高55cm 704.238.45

10 STOCKHOLM 地毯 $14,900
   平織毯．毯面：100%純羊毛。
   經線：100%純棉．寬250×長350cm
   802.290.32

新品
STENMÄTARE
窗枕套
$200

以顏色 一統天下

如果你和這個家一樣
擁有橫跨數十年的混搭家具
為磨磨上湯，正聚讓所有一切
和平共處的想法方式
關愛的綠、灰及藍色或為這個家的主調
散發更從容、沈靜的舒適感

哈囉、別LLY！
這個書櫃系列已經陪伴我們超過40年
至今依然廣受大眾喜愛

$5,700

92 家 完美成雙

$5,990
新品
OMTÄNKSAM
咖啡桌

第一張原為人命POÄNG椅子
靈和簡潔以POEM之名於空氣的
在靈日本設計師Noboru Nakamura
在1976年型錄中首度亮相

7.4 Environment

Following the inspiration of an IKEA, the walls of the warehouse will mostly be white with the floors being grey. Display rooms will have coloured walls as well as varying sets of furniture corresponding to the associated room (bedroom displays have a bed, side table, closets, etc.).

8. Development Software

8.1 Unreal Engine 4

We will be using the Unreal Engine because of its visual scripting language and material set ups. It also has better performance and visuals then its competitor Unity.

9. Target Systems

- PC (Steam and Epic Games Store)
- Hand held devices (Steam Deck and Switch)
- Consoles (Xbox and Playstation)

10. Audio

The audio for this game is inspired by games like *Moving Out, Human Fall Flat*, *Gang Beasts*, and *Animal Crossing*. We choose these games for inspiration because of the cute feel to the sounds.

10.1. Player

- Running
- Pushing
- Pulling
- Throwing
- Panic sound
- Caught/Dying sound

10.2. Security Guard

- Walking
- Running
- Alert
- HIt

10.3. Camera

- Beeping
- Alarm when spotting the player

10.4. Cart

- Loading
- Unloading
- Pushing
- Pulling
- Bumping into items
- Cart being bought by coins

10.5. Coins

- Coin falling out of furniture

10.6. Truck

- Idle truck sound
- Loading furniture into truck
- Door closing
- Driving away

10.7. Elevator

- Doors opening ding
- Buttons pushed ding
- Elevator moving sound

10.8. Sauce Pipe

- Sauce coming out of pipe
- Character walking on Sauce

10.9. Ambience

- Ambient music
- Being chased music
- Running out of time Music
- Restaurant music
- Restaurant sounds near food section

11. Team

Creative Director	Luke Hodinka
Producer	Sam Mohan
Lead Level Designer	Michael Downing
Tech Director	Luke Hodinka
Test Lead	Sam Mohan
Art Director	Jackson So
Concept Artists	Anda Lu Sung Young Chung
Character Artist	Sara Noel
Environment Artist	Yahya Kassab
Prop Artist	Malka Finkelstein Simon Torchetti Ivy Chau Rachel Medeiros Ashfi Reza
Programmers	Andrew Boulanger Phu Mark Pham Lucas Krespi DosSantos
Animators	Chris Phillips
Riggers	Pratik Batavia