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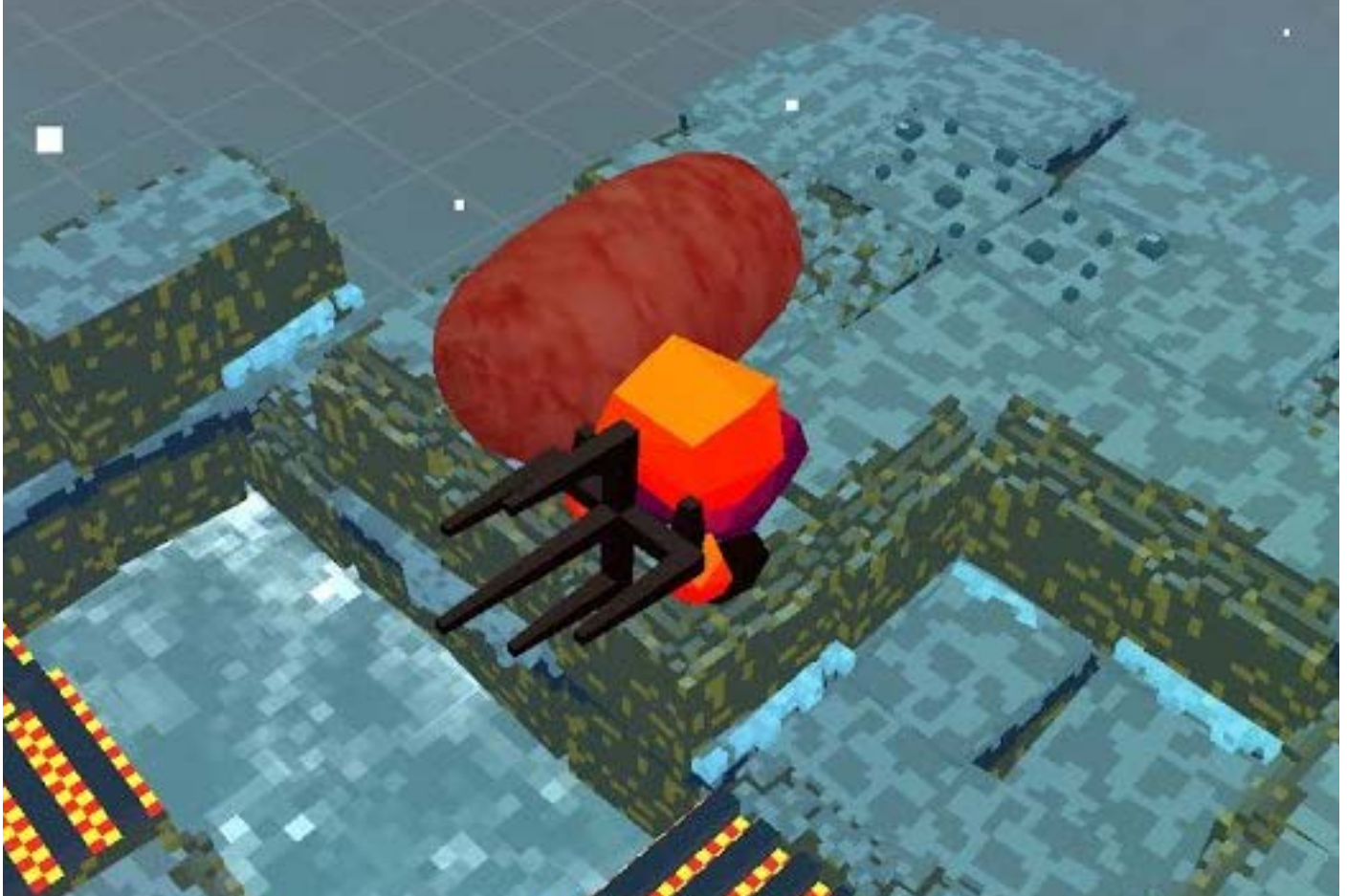
# DESIGN DOCUMENT

# SUSAN

# SAUSAGE ROLL

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*Prototype*



Project by:  
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# Overview:

Susan Sausage Roll is a direct clone of Stephen Lavelle’s puzzle game, Stephen’s Sausage Roll. The game involves rolling sausages onto grill tiles until they are perfectly cooked on each side. The challenge comes from manoeuvring the sausages around tiny islands without dropping them in the water or letting burn by rolling over the grill tiles more than once on each side.

The game has a very surreal, almost Dadaist visual aesthetic, consisting of mismatched geometry, colours and textures. The alienating controls are a big part of the game’s challenge and consist of the arrow keys to move around the grid and ‘Z’ to undo an action. This clone of Stephen Sausage Roll should last from 2 to 4 hours, depending on the player’s level of understanding. Although there is no specific target audience, this game appeals to a very niche group of players who love puzzle games and are ready for a challenge. Due to the lev-



# Key Features

## Clone

This game prototype strives to be a direct clone of [Stephen Lavelle's, \*Stephen's Sausage Roll\*](#).



## Obscurity

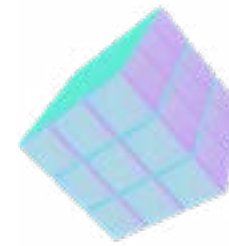
The game's surreal visual aesthetic, setting and obscure controls



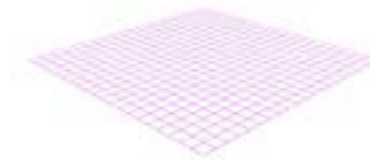
## Tutorial

The game throws the player in and lets them gradually discover what they can and cannot do without any instruction.

# Summary



### PUZZLE GAME



**GRID BASED**  
2D Grid, Movement in 4 directions



**FOR PC**  
Single player, use keys only



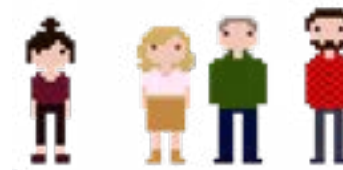
**SURREAL LOOK AND FEEL**  
Strange mix of mismatched patterns



**COMPLETE PUZZLES TO PROGRESS**  
Game driven by completion of puzzles



**LEARN AS YOU GO**  
No formal tutorial level



**NO AGE RESTRICTION**  
Preferred by millennials

# Framework

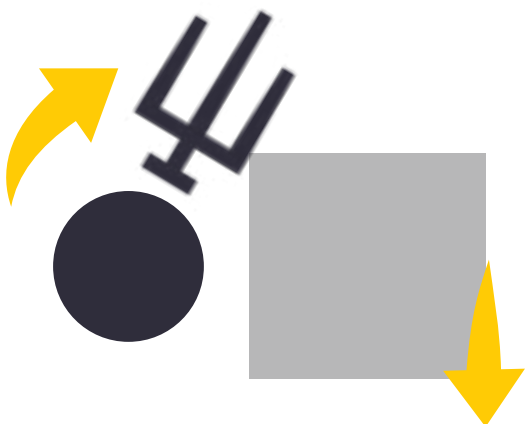
## Mechanics

The game is made up of a handful of simple mechanics. The player may move in four directions on a **grid** in order to push sausages around.



*Move forward*  
*Push sausage forward with fork*

*Move backwards*  
*Push sausage backwards with back*



*Turn 90 degrees*  
*Push sausage in that direction*

## Dynamics

Pediction	The player must think several moves ahead in order to solve a puzzle.
Spacial Reasoning	The player should utilize the limited space wisely and consider how their rotation impacts the space.
Behavioural Momentum	The puzzles should initially seem very difficult, but as the player gets used to the controls and the mechanics, The solutions should come more naturally.
Progression Dynamic	The player should be driven by progression of levels and stages in the game.

## Aesthetics

Discovery      Challenge



# Gameplay

## Progression

The game starts with no instructions, so the player is forced to experiment with controls and movement around the grid to start puzzles. The puzzles should initially seem very difficult due to the confusing controls and lack of mechanical knowledge, but as the game progresses and more levels are complete, the puzzles become more natural to solve, yet more complex.

## SCREENS



### MENU

Player navigates menu with arrow keys. This introduces them to the controls.



### LEVEL SELECT

The player solves the first puzzle of getting into one of the puzzles. This shows them how the grid system works.



### PUZZLE

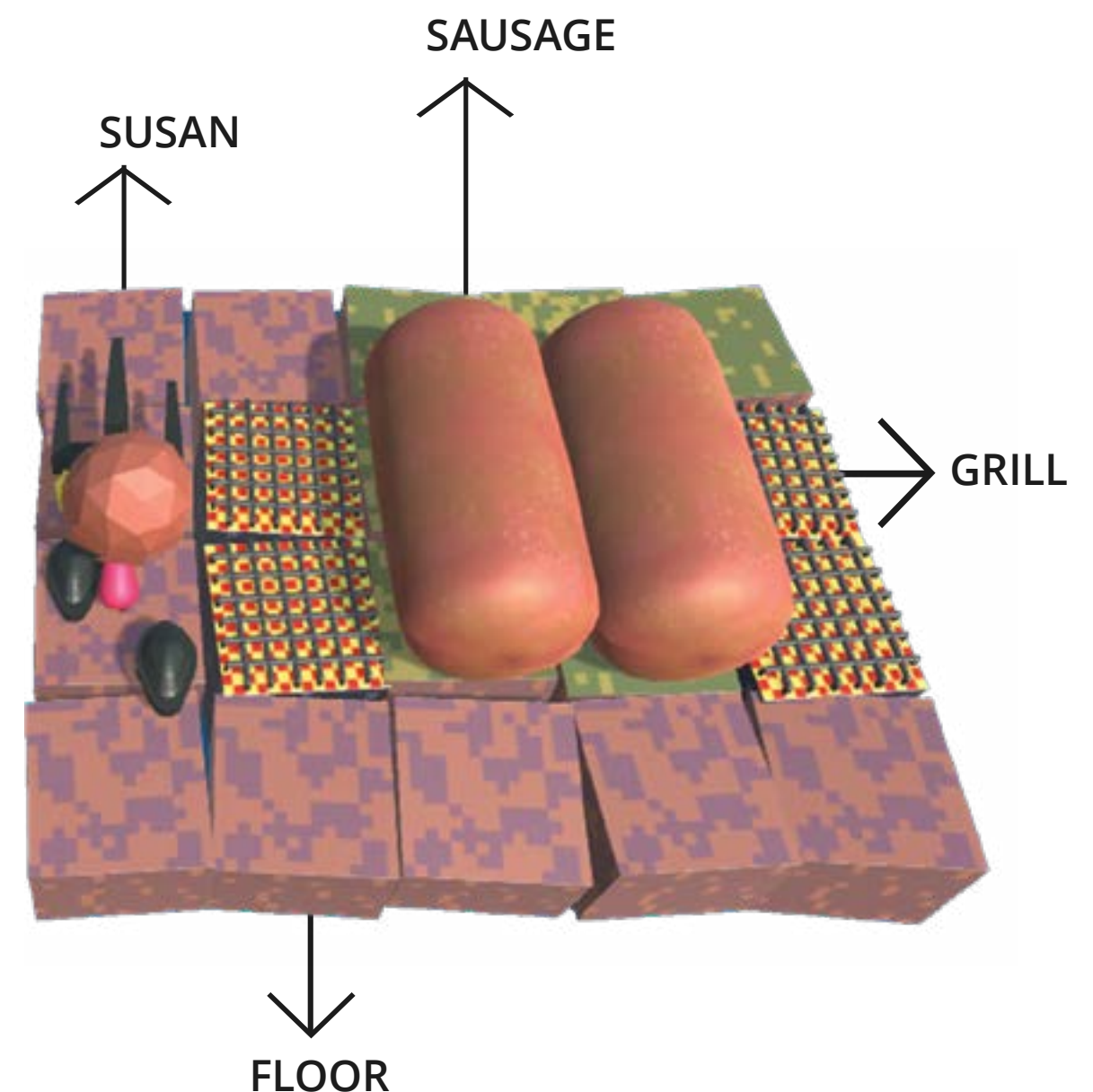
The player can maneuver around the grid, trying not to burn or drop the sausages. "Z" allows them to undo a move.

## Objective

# FINISH ALL THE LEVELS

## Puzzle Structure

A puzzle consists of four main elements, Susan, one or more sausage(s), grill tiles and floor tiles. The player controls Susan's avatar who is holding a giant fork. Susan is only allowed to move on the floor tiles. If she stands on a grill tile, she bounces back to a the previous floor tile. The player must push the sausages around the grid so as to roll each side of the sausage on to a grill one time respectively. Cooked sides will turn brown. If the sausage is pushed off the edge or gets burnt, the player should undo the action of pushing by pressing 'Z' one or more times.

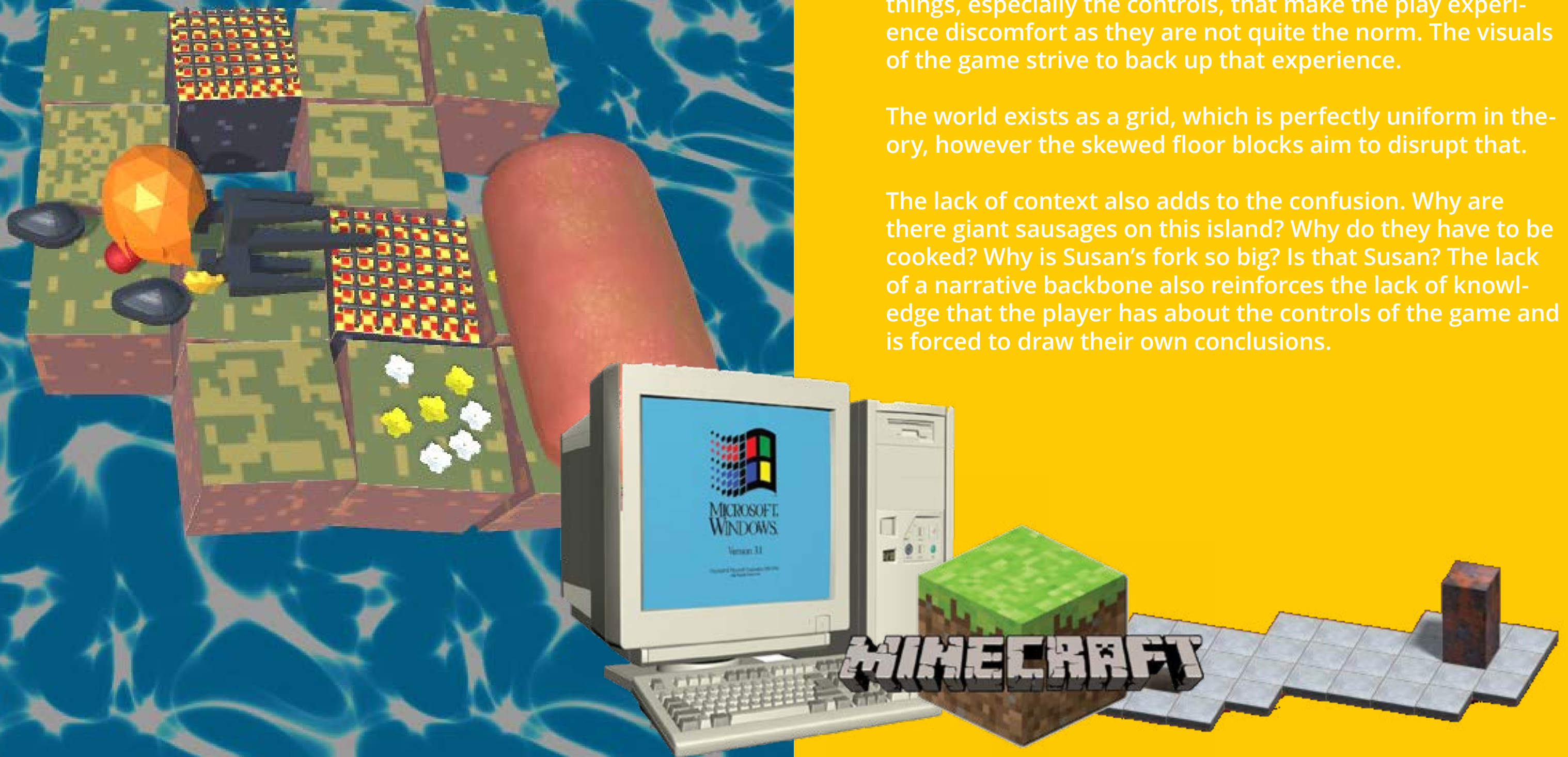


# WORLD & visuals

The mismatched, SURREAL colours, textures and patterns emphasise the obcurity of the game. There are a lot of things, especially the controls, that make the play experience discomfort as they are not quite the norm. The visuals of the game strive to back up that experience.

The world exists as a grid, which is perfectly uniform in theory, however the skewed floor blocks aim to disrupt that.

The lack of context also adds to the confusion. Why are there giant sausages on this island? Why do they have to be cooked? Why is Susan's fork so big? Is that Susan? The lack of a narrative backbone also reinforces the lack of knowledge that the player has about the controls of the game and is forced to draw their own conclusions.





# Levels

## Level Select

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The player selects a level by moving into the position of the the ghosts around the island. This form part of an “indirect tutorial” for movement. Once the player moves into one of these positions, everything around the selected level sinks, to expose the level. The sausages do not move and the grills are off unless a level has been activated.



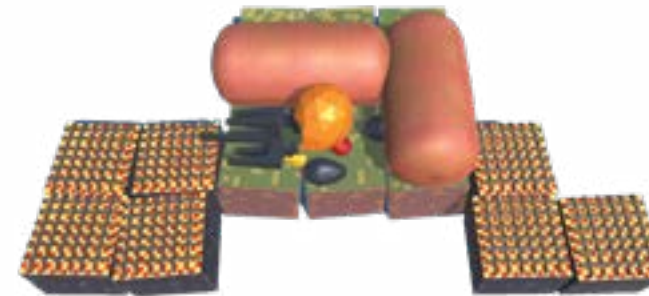
Ghosts disappear when a level has been completed. Once there are no more ghosts, the game is finished.

# Levels

## Level Breakdown

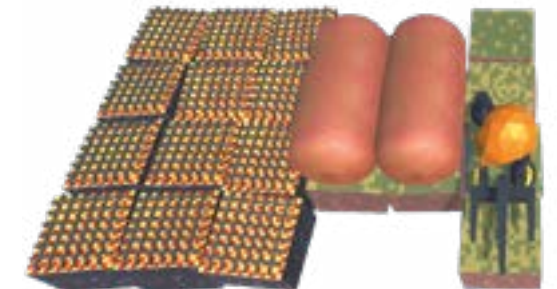
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Once a level is activated, the player is situated in the same position as the the ghost. The ghost disappears until the all the sausages are evenly browed, when it appears in it's initial spot. In order to complete a level, the player must resturn to the start position. This becomes a secondary challenge in the puzzle.The levels were taken directly from Stephen's Sausage Roll.



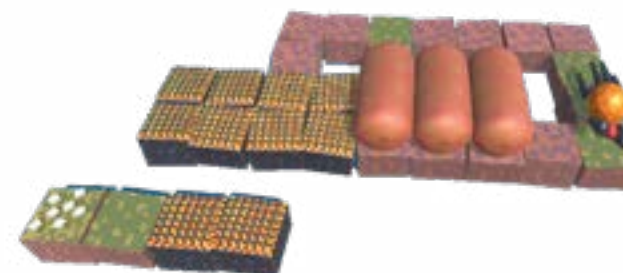
### INFANT'S BREAK

Close to the spawn point. Teaches the player to think a few steps ahead and to use the positions of the grills and rotation of the sausages as clues for an end point.



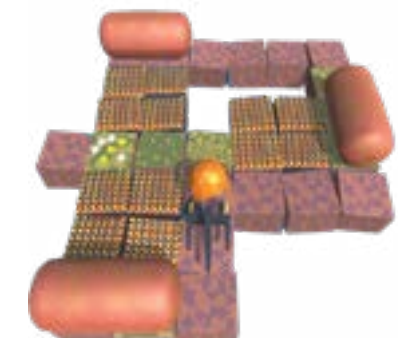
### FIERY JUT

Close to spawn point. Teaches the player to work in tight spaces and move away before cooking immediately. Involves cooking two sausages quickly so it's pretty easy and satisfying.



### ANCHORAGE

Furthest away from spawn point. Accumulation of all other levels. Involves using sausages as “tools” to push other sausages that are out of reach.



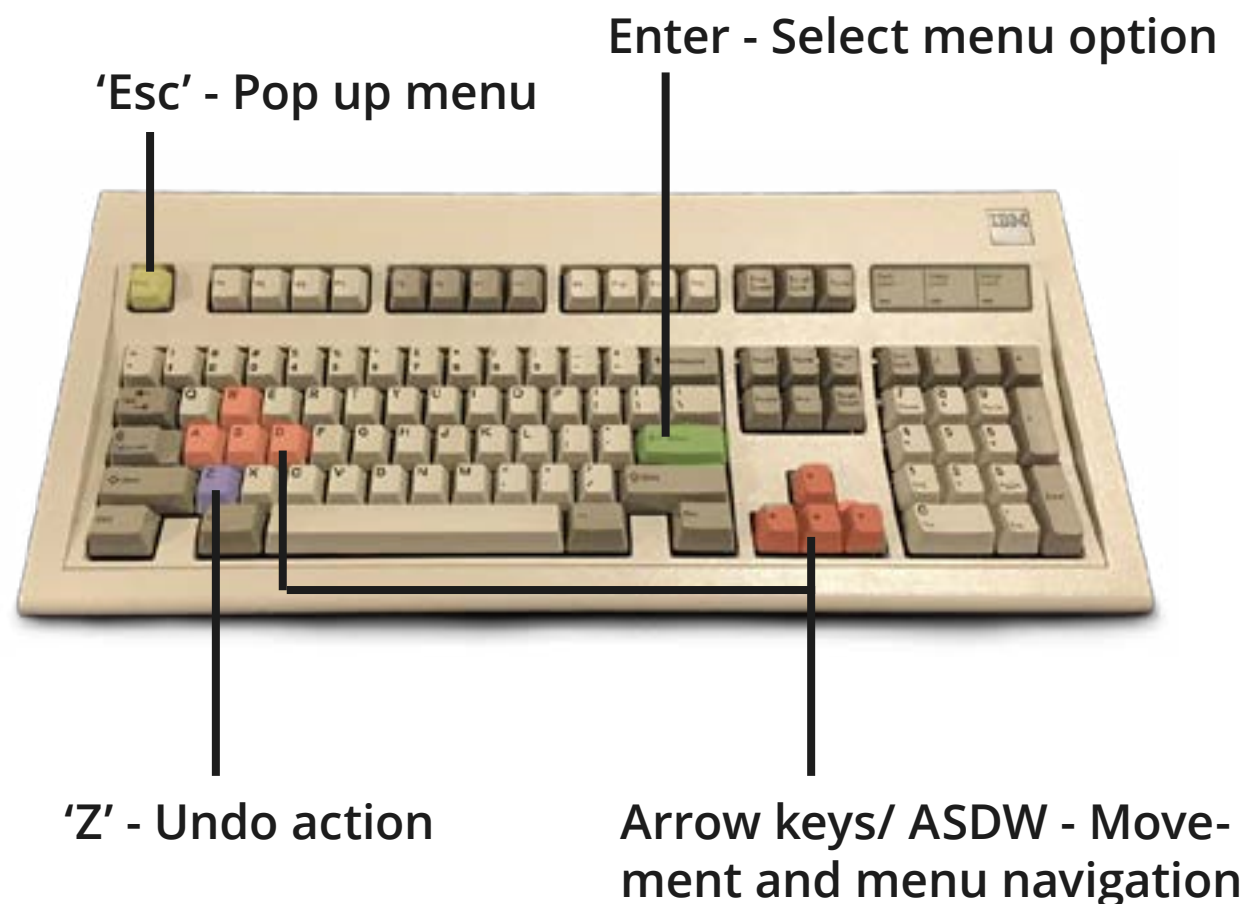
### THE CLOVER

Further away from spawn point. Really shows how ending the puzzle in the position you started in an important mechanic that adds another level of complexity to seemly simple situations.

# Interface

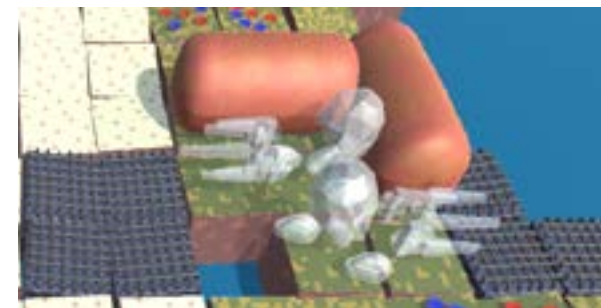
## Controls

The confusing controls form part of the challenge of the game. A player uses the arrow keys to turn and to move in that direction. Since the controls make it very easy to make a mistake, the player may undo an action at any-time by pressing 'Z'.



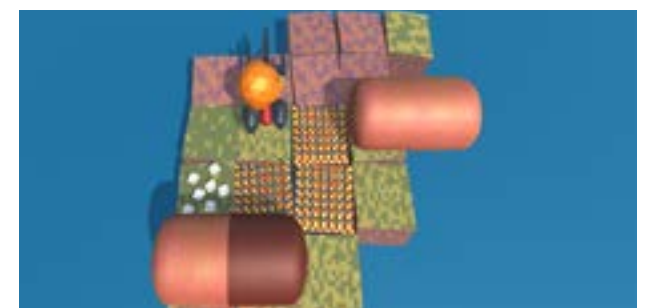
# Interface

## HUD



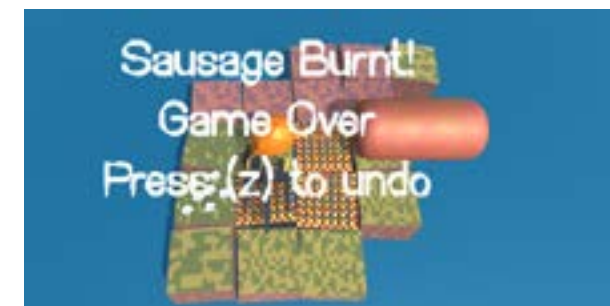
### GHOSTS

Indicate where a level starts. The player acts like a key to unlock the level by standing in the same position.



### BROWNING

Sausage browning lets the player know which side of the sausage is already cooked and cannot be cooked again.



### GAME OVER SCREEN

Game continues when sausage is lost or burnt. Game Over screen makes the player aware that they can no longer win the level without undoing actions.



### GHOST

The ghost of a level reappears once all the sausages are evenly browned. This reminds the player that they need to go back to the start point to officially finish the level. *The Clover* level emphasises how important this can be as a



# Interface

## Audio

The sounds in the game emphasis actions and create an atmosphere. The following is a list of sounds required in this prototype:

Sizzle

Character Turn

Push with Fork

Button Hover & Click

Sausage Falling in Water (plop)

Footsteps

Walking on Grill (Ouch)

Sad/Lose Level

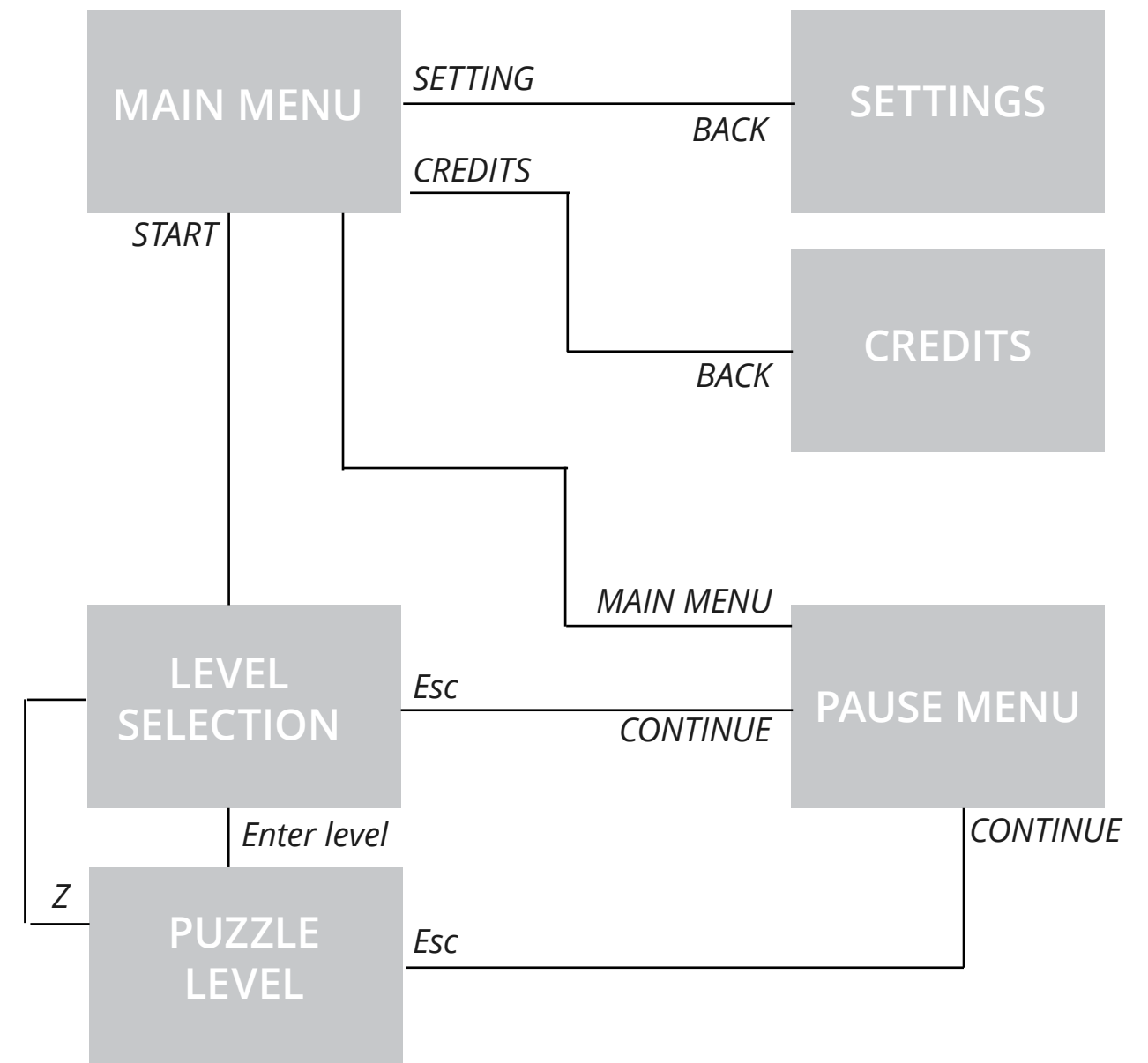
Happy/Complete Puzzle

Background Music - Game

Background Music - Menu

# Interface

## Screen Flow



# Game Options

## Menu Settings

The game menu provides several game settings for the player to customise their own experience. The player is able to change the following settings:

- Resolution
- Graphics
- Music volume
- SFX volume
- Full Screen

# Art Assets

## Development

The prototype requires several three dimensional assets in a mismatched style in order to achieve the desired visual aesthetic. To achieve this level of variation in style, the development should be split between team members.

2D Assets	3D Assets	Particles/ Shaders	
Cooked Sausages (Menu's)  Uncooked Sausages (Menu's)	Character Fork 'Ground tiles Grass x3 Dirt Sand Grill x2 Sausages Split into 4 Flowers	Cooking  Burning  Level disappear  Moving Water	
Style	Mix of low-poly and smooth	Pixel/Voxel	Windows95
Tools	Blender	Unity	Photoshop /Krita/Gimp



# Coding

## Level Loading

The map as well as the different levels are created using a bit map. An image created using single pixels with different RGBA values is created. The code scans this image and places a block corresponding to each value. The RGB value determines which block should be spawned and the alpha value determines what should be placed on top. This allows for easy additions to levels and details on the map.

Asset	a	R	G	B
Floor 1	xx	00	ff	01
Floor 2	xx	00	ff	02
Floor 3	xx	00	ff	03
Floor 4	xx	00	ff	04
Floor 5	xx	00	ff	05
Grill	xx	ff	00	00
Sausage A	a0	xx	xx	xx
Sausage B	b0	xx	xx	xx
Level Select A	70	xx	xx	xx
Level Select B	80	xx	xx	xx

# Coding

## Undoing Actions

All the actions in the game have inverses and stem from movements only. All other actions (level starting, sausage moving, sausage cooking, sausage falling, player burning) are sub-actions. When you undo one action all subactions inverse with it at the same time.

# Technical

### Target Hardware

Windows 7 SP1+,  
Graphics card with DX10 (shader model 4.0) capabilities.

### Development Hardware

DELL Inspiron 15 70000 Gaming Laptop

### Development Software

Unity v.2019.1.11f1  
Blender  
Krita, Paint.NET, Photoshop  
JetBrains Rider