KUBRIX
HUD Research

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Overview

Super Mario Odyssey is a 3D platforming game where the player controls Mario as he travels through various worlds and environments to save Princess Peach from Bowser.

The reason this game's HUD was chosen is because of its simplicity while adhering to the theme and style of the game without overwhelming players with too much information such as control schematics.

Specific Analysis

Platforming Overlay

To keep information from flooding players, Super Mario Odyssey keeps the HUD clean of anything deemed unnecessary. Standard HUD information such as health and gold are substituted with easily recognizable icons. Borders are non-existent, and to prevent the plain white HUD from getting mixed into the background, the text are given subtle shadows that help them stand out even in bright environments.

HUD

1. Shadows behind the white HUD keeps them from getting mixed into bright environments
2. Objectives and resources are kept as Icons rather than text
3. Feedback is provided when updating the HUD.
   a. When collecting coins, the number rises similar to a slot machine to the desired number
   b. The coins icon and numbers are temporarily highlighted yellow
4. Missing objectives are given a dotted outline to inform players that there are still objectives to be obtained in the level
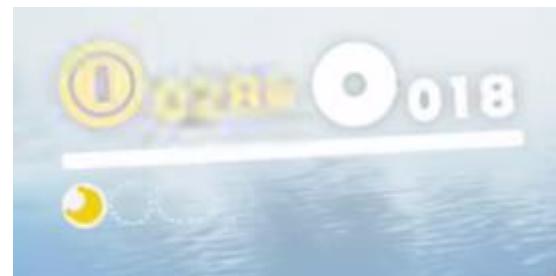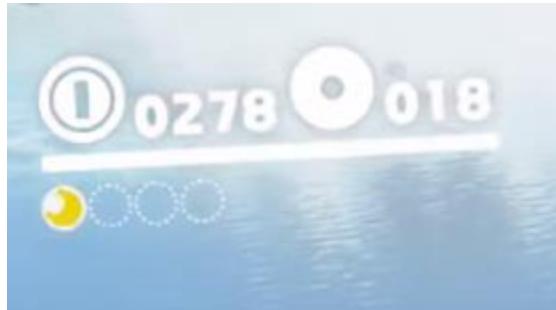
Controls

1. Shadows behind text keep them from blending into white background
2. Icon of the buttons used to minimize information on screen
3. Kept at bottom of the screen to minimize information on screen
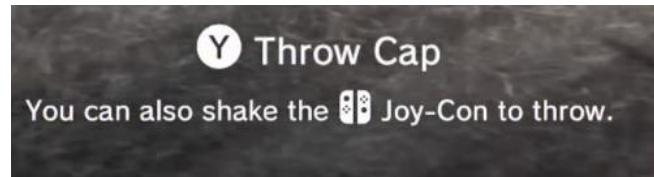
Direction

1. Displayed as a compass so players know where they are currently facing
2. The needle faces the direction the player is facing, while the Red ring is where north is facing
3. Keeps players informed of their current direction without flooding the HUD.

Overview

Poly Bridge is a 2.5D Isometric bridge building simulator-puzzle game. The objective is to sequentially design bridges to lead vehicles from one side to the other under various obstacles and situations.

This game was chosen for its design theme during its construction mode. The information present helps the player build their solution as clearly as possible while allowing players to view their objectives.
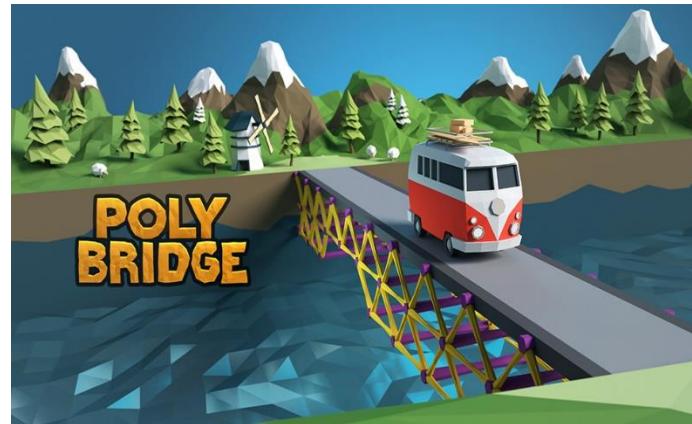
Specific Analysis

Construction Mode Overlay
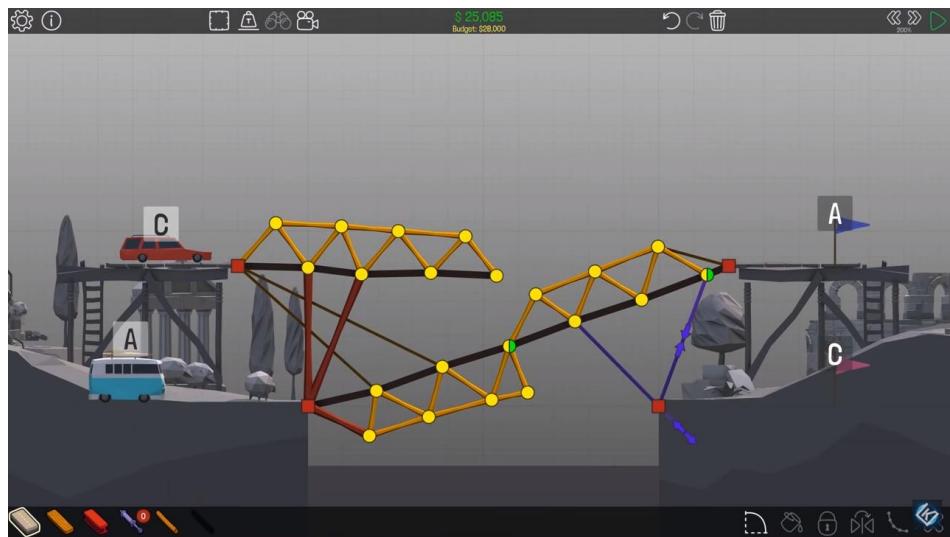
Only important information is kept on the screen with as little text as possible to keep the HUD clean so the player can focus on the puzzle. During this mode, everything is greyscaled except for objectives and the player's placed puzzle pieces. Most information is kept as icons rather than text, and any information that needs to explain itself does so in a tooltip that appears only when the icon is highlighted / chosen.

Tools

1. Puzzle Pieces are kept as icons.
2. Available pieces for use are colored while unavailable pieces are darkened
3. Tooltip is provided when hovered over to explain what that tool is

Interface

1. Buttons kept as recognizable icons
2. Objectives are colored so players can focus on them
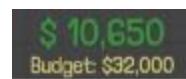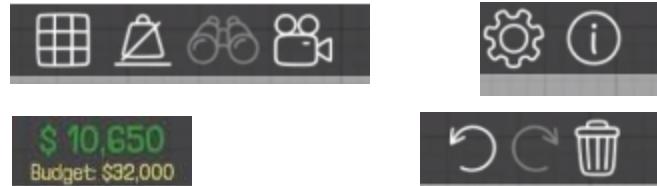
Display

1. Objectives and tools placed are kept colored while environment is greyscaled
2. Background has a blueprint scale so players can measure their placement properly
3. Tooltip is displayed when using tool to show their tool's properties as it is used
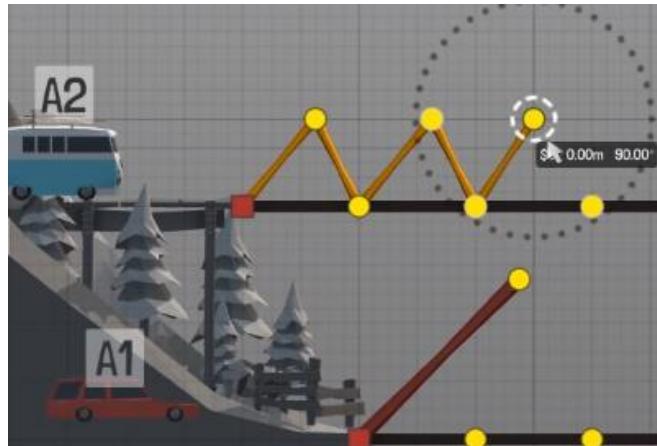
## Game #3: Mario + Rabbids Kingdom Battle

Overview

Mario + Rabbids Kingdom Battle is a 3D tactical strategy game where Mario has to team up with various characters to defeat various enemy rabbit-like creatures called Rabbids.

Although this game plays very differently from the chosen project, the HUD it uses during its tactical gameplay uses a grid-based movement system that can be applied to the chosen project's build mode.

Specific Analysis

Grid Based Movement

The movement system in Mario + Rabbids during combat uses a grid based system. Players move a grid around within the unit's movement range, then upon selecting that tile, the unit will automatically move to the selected tile.

Execution

1. Player controls an icon that moves freely within the unit's movement range, not bound by the grid.
2. However the range is tile-based. The location the icon is currently at will display a separate grid showing the tile that is currently selected
3. **The camera will pan over time to the icon, allowing for a smooth transition to the selected tile**
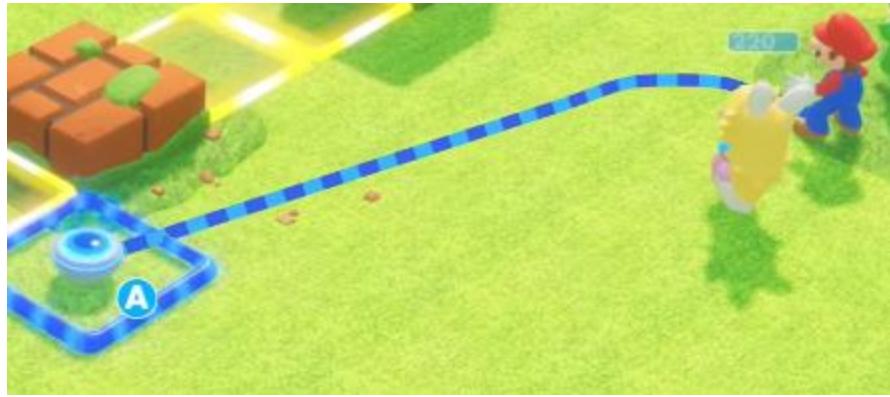
4. A line connecting the unit currently selected is linked to the current selected tile, indicating both the current unit being used, as well as the path the unit intends to take to the tile.
5. The rotation of the camera rotates around the icon as the pivot

It is important to note that despite the game uses a grid based system, the movement in the game is free, allowing a smooth transition from tile to tile without the player feeling restricted (The grid follows the player, rather than the player follows the grid). This needs to be executed just as well in the chosen project for smooth movement during the build mode.

Game #4: Stonehearth

Overview

Stonehearth is a 3D city building game where players have to manage a village by gathering resources, building up and upgrading the village, and assigning roles to the civilians.

This game is the main Inspiration for the art style of our game. The blocky look and lack of textures gives it a simple and pleasing look. The UI especially meshes well with its blocky look.

Specific Analysis

General art direction

Stonehearth's features a blocky art style with few textures on most objects. The main reason for choosing this game as a reference for the overall look of the project was mainly to compensate for the team's lack of a dedicated artist.

UI direction

Toolbar

1. Uses simply icons without text to represent submenus. This can be referenced for the project's toolbar.
2. The icon's names are displayed in tooltips momentarily when selected, so players know which submenu the icon leads to, without needing to flood the screen.

Menus

3. Square-ish design with no round edges at any point.
4. Titles and subtitles has bright colored text on dark/unsaturated background colors to make them popup.

Icons

5. Icons have to let players know their use/meaning without text.
6. Tooltips are used to display the meaning instead so as to not clutter the screen

Buttons

7. Simple buttons with bevels to give them a more solid look
8. Most likely to be used buttons are big, less likely to be used buttons are small (Nobody wants to exit the game anyways)
9. Text are kept centered

Game #5: Maplestory

Overview

Maplestory, unlike its sequel, is a 2D side scrolling adventure MMORPG. Players choose from a variety of classes to combat evil while having a carefree adventure.

The game was chosen not for any kind of gameplay, nor UI design. Maplestory was chosen for its amazing sound design and sound tracks.

Specific Analysis

General Music direction

Maplestory's music direction was chosen because it fit the project's direction into a carefree cartoony feel.

Maplestory features many scores with calming serene music performed either with a guitar or piano, and sometimes is accompanied by ambience sounds of the environment like leaves shuffling and birds chirping.

Music

1. Main Menu BGM – Features a serene and relaxing guitar/piano/flute intro music. Not only is it pleasant to listen to, it doesn't pressure players into logging in, and provides an initial impression of a relaxing game.

2. Lith Harbor BGM – Features a piano/flute composition that gives a carefree and adventurous feel. Allows players to feel like they're starting an adventure.

SFX

3. Button SFX are cartoonish and slightly exaggerated. Fitting for Maplestory's theme. However we're likely to select a more solid and serious SFX for the project's buttons to better fit a construction feel.

Audio

4. Movement and Jumping SFX are cartoonish and exaggerated. Given the project's platforming portion, these SFX are suitable and may be referenced.

HUD Style Guide

Color

Build Mode Colors

#ffba00	#1b2d58	#686768	#58678e

Menu Colors

#ffba00	#1b2d58	#f7ffc0

Play Mode Colors

#8b6d4e	#c4ac45	#f7ffc0

The color of the blocks in the chosen project's game are bright, vibrant, and colorful. To prevent the HUD from clashing with the bright color, the chosen colors for the HUD are highly under-saturated allowing the vibrant colors of the level to shine.

Intro Title	
Aa Blockt	THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890
Title Text	
AA BLOCKED	THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890
Body Text	
Aa Pokemon Classic	THE QUICK BROWN FOX JUMPED OVER THE LAZY
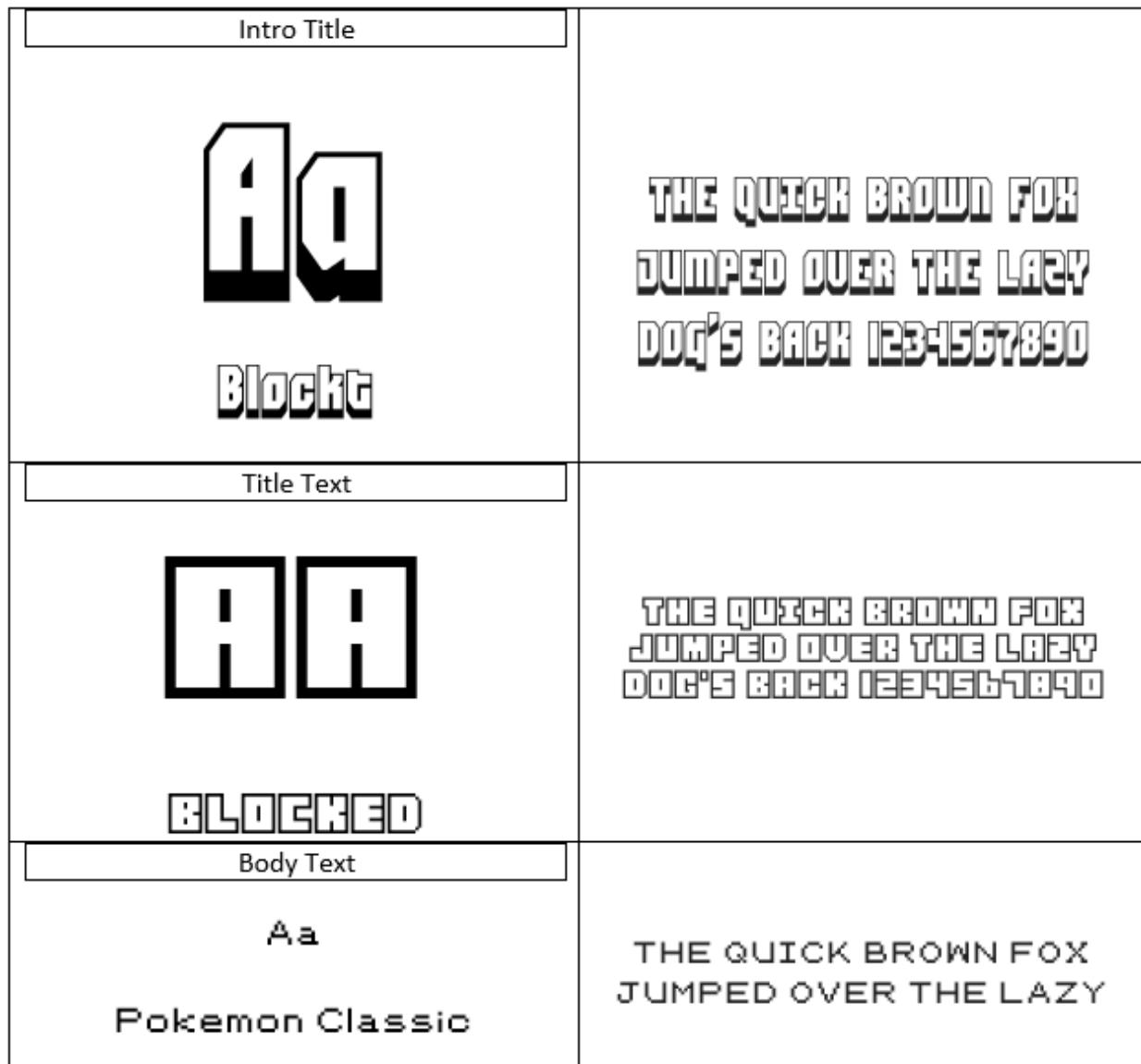
Kubrix

0 1234567894X

Iconology

Buttons

Title Screen

Asymmetrical placement, place all buttons and title to the right.

Focused/highlighted buttons have to have a more brighter and saturated color.

135 px

Kubrix

190 px

160 px

Start Game

20 px

How to Play

20 px

Scoreboard

75 px

| Options | Credits | Quit |

25 px   25 px

Build Mode

Show Controls

25px

45px

25px

205 px

Platform

45 px

TOOLS

15 px

25 px

Delete

10

20

30
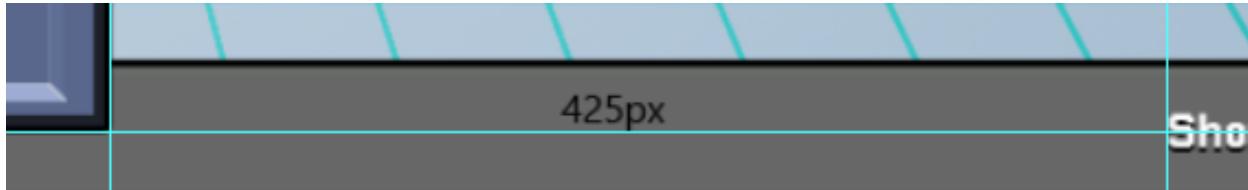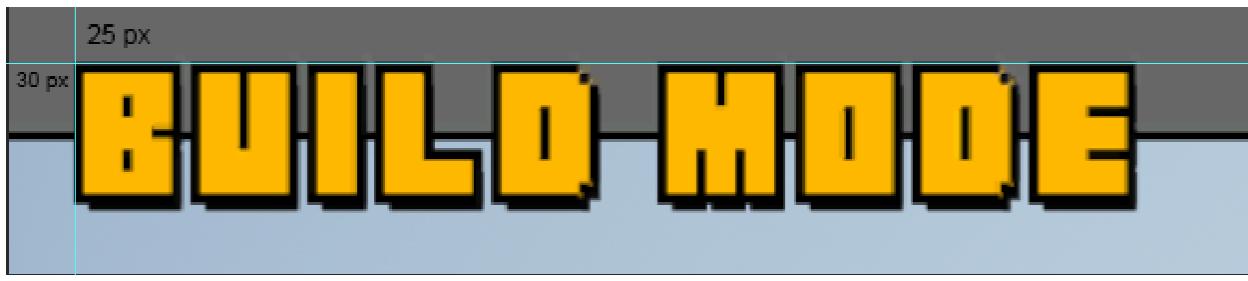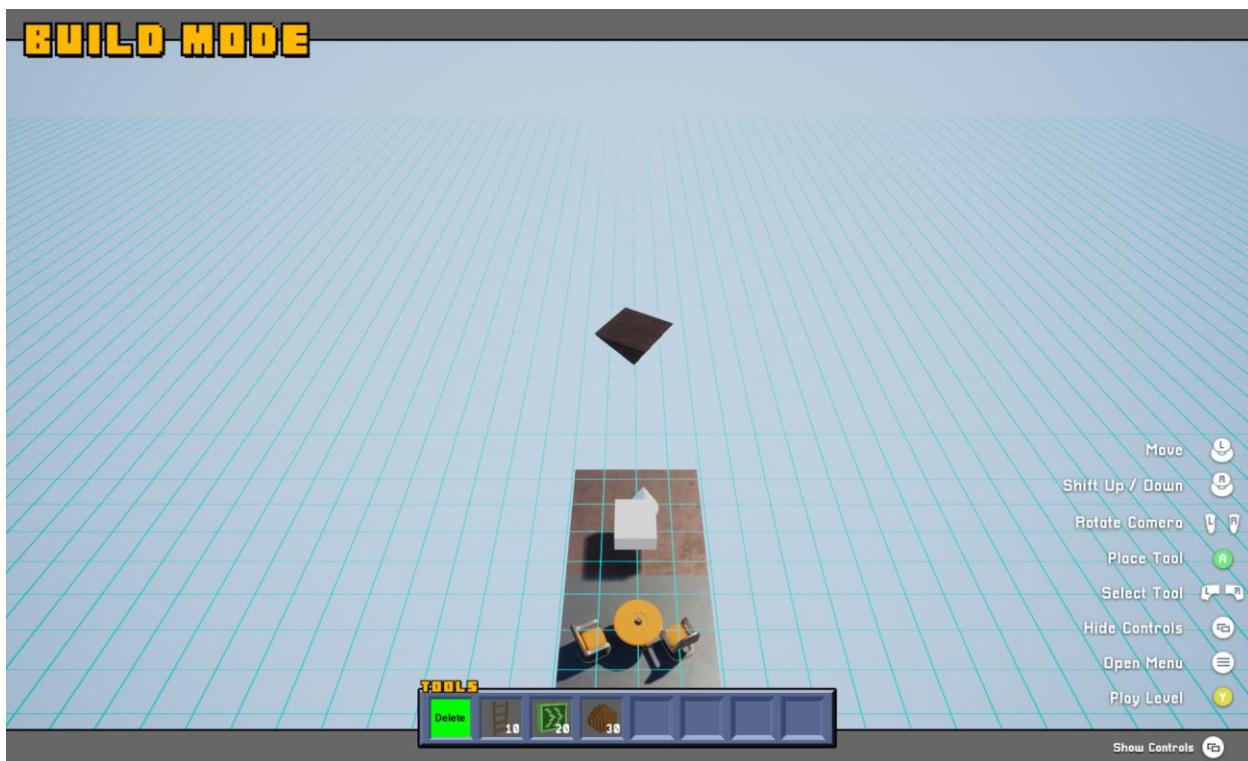
Change icon to hover state when selecting tool. Display tooltip display for tool name.

Move — 60px, 50px, 53px, L

Shift Up / Down — 50px, 53px, R

Rotate Camera — 50px, 53px, R

Place Tool — 50px, 53px

Select Tool — 50px, 53px, R

Hide Controls — 50px, 53px

Open Menu — 50px, 53px

Play Level — 50px, 53px

25px   25px   50px

Show Controls

Height between the top of the screen and bottom of the screen is variable depending on the resolution of the screen.

However the controls window should try to remain equidistant from the top and bottom, remaining in the center.

Play Mode

45 px

50 px

50 px

Move	60px	50px	
	53px	L	
Rotate Camera	53px	R	50px
Jump	53px		50px
Reset Camera	53px		50px
Scale Objects	53px		50px
Build Mode	53px		50px
			50px
	78px	78px	

Move ⊙
Jump Ⓐ
Rotate Camera ⊙
Reset Camera Ⓑ
Scale ✛
Build Mode Ⓨ
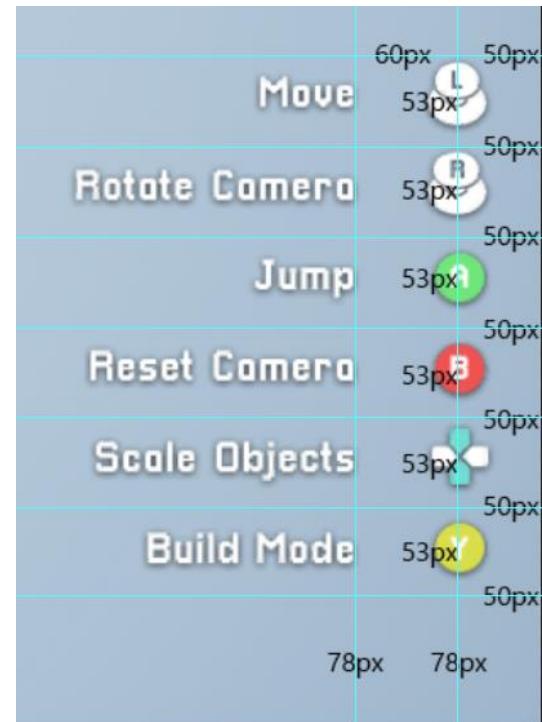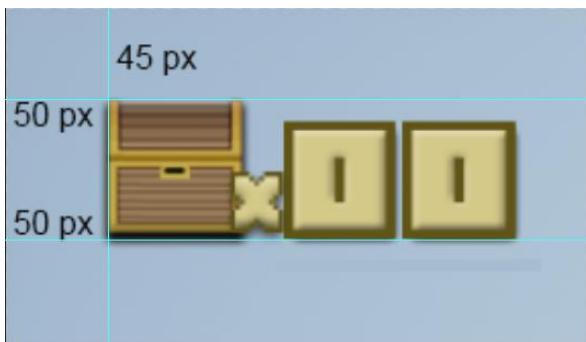
Pause Menu
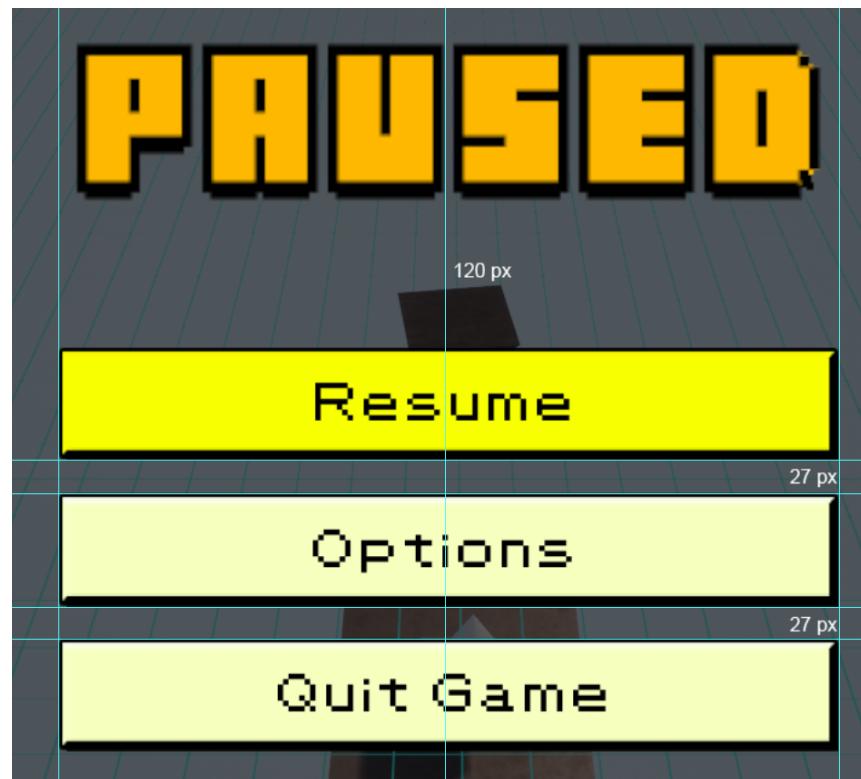
Paused Screens need to have a black overlay to show that game is paused.