



Game Design Document

Eden V

Version_1.0

Position Title	Name	Signature
Level Designer	Alex M.	<i>Alex Maddox</i>
Level Designer	Franklin W.	<i>Franklin Wu</i>
Programmer	Carlotta G.	<i>Carlotta Guan</i>
Programmer	Shangqi C.	<i>Shangqi Cai</i>
Artist	Jean Y.	<i>Jean Yuan</i>

Document Revisions Table

Version	Description	Requestor	Date
0.5	Initial Document Draft	Professor Karl Steiner	11/19/2024
1.0	Final Document Deliverable	Professor Karl Steiner	12/6/2024

Table of Contents

- Table of Figures.....4
- Table of Tables.....5
- Concept.....6
 - High Concept.....6
 - Game Pillars.....6
- Game Description.....7
 - Game Goals and Features:.....7
 - Context:.....7
 - Style and Tone:.....7
- Gameplay Loops.....8
 - Core Loop:.....8
 - Secondary Loop:.....8
- Target Player.....9
- Gameplay Minute.....10
- Gameplay.....11
 - Hierarchy of Epics (Core Gameplay Mechanic Breakdown).....11
 - Player’s Objective.....14
 - Camera/HUD.....14
 - Controls.....15
 - Game Metrics.....15
 - Communication/Conveyance Mechanisms.....15
 - Player Movement/Interactions.....16
 - Health System/Checkpoint System.....16
- Gameplay Details.....16
 - Backstory (if applicable).....16
 - Main Character (if applicable).....20
 - Concept(s) (if have main character).....21

Weapons (<i>if applicable</i>).....	21
Skills System (<i>if applicable</i>).....	21
Enemy/Secondary Character(s) (<i>if applicable</i>).....	21
Concept(s).....	22
Enemy Movement/Interactions (<i>if applicable</i>).....	22
Objects System (<i>if applicable</i>).....	22
Pickups System (<i>if applicable</i>).....	31
World Layout.....	32
Game World Overview.....	32
Level Progression.....	34
Environments.....	35
Concept(s).....	35
Level Details.....	37
Level 1:.....	37
Level 2:.....	39
Level 3:.....	42
Level 4:.....	44
Level 5:.....	46
Menu System.....	50
Menu Flow.....	50
Menu Descriptions.....	50
Menu Details.....	51
Installation.....	51
Title Splash Screen(s).....	51
Main Menu.....	51
Options/Controls Screen.....	51
Credits Screen.....	51
Exit/Pause Screen.....	51
Game Over Screens.....	51
Intro/Level-to-Level/Outro Cut-Scenes (<i>if applicable</i>).....	51

References.....	52
-----------------	----

Table of Figures

Figure 1: Level View.....	6
Figure 2: Game Pillars.....	6
Figure 3: Core Loop.....	8
Figure 4: Secondary Loop.....	8
Figure 5: Pressure Plates and Gates.....	10
Figure 6: Picking up and Carrying the Cube.....	10
Figure 7: Putting down the Cube.....	11
Figure 8: Building a Dam and Hurting the Evil Tree.....	11
Figure 9: Storyboard Images.....	19
Figure 10: Main Character Description.....	20
Figure 11: Original Concept Draft - Final Choose: 02.....	21
Figure 12: Main Character - Beaver_Justin.....	21
Figure 13: Basic 2 Kinds of cubes [Blue & Red] (Pressure Plate Abandoned).....	22
Figure 14: 2 Unused Cubes (Abandoned).....	22
Figure 15: 3 Kinds of Walls: Tile Map [Stone & Bush & Evil Ivy].....	23
Figure 16: Door of Stone Wall - Ver2.0_Raisable Wall.....	24
Figure 17: Pressure Plate of Door (Raisable Wall).....	24
Figure 18: In Game: Pressure Plate & Door Connected by Antline.....	24
Figure 19: Tile map of Antline (straight & Corner & Faded & Cross).....	25
Figure 20: Door of Bush Wall with fireflies dancing Animation (Abandoned).....	25
Figure 21: Door of Stone Wall - Ver1.0_Breakable Wall (Using in Load Page).....	25
Figure 22: Wood Bundle & Collection UI.....	26
Figure 23: Dam Building Animation.....	26
Figure 24: River Tile Map & Highlight Flowing Animation.....	27
Figure 25: Riverbed Tile Map.....	27
Figure 26: Evil Tree & Dead Sprite.....	28
Figure 27: Trees01.....	28
Figure 28: Trees02_Group & Fallen leaves.....	29
Figure 29: Flowers.....	29
Figure 30: Puzzle Gate & Ivys Tile map [Stright & Corner & Top].....	30
Figure 31: Early Function (Abandoned).....	30
Figure 32: Wood picks up UI.....	31
Figure 33: Tutorial level 01.....	32
Figure 34: Level 02.....	32

Figure 35: Level 03.....33
Figure 36: Level 04.....34
Figure 37: Level 05.....34
Figure 38: Early In Game Layout Draft_Ver1.0.....36
Figure 39: In Game Layout_Ver2.0.....36
Figure 40: In Game Layout & UIs_Ver3.0.....37
Figure 41: Level 1 Walkthrough.....38
Figure 42: Level 2 Walkthrough.....40
Figure 43: Level 3 Walkthrough.....42
Figure 44: Level 4 Walkthrough.....44
Figure 45: Level 5 Walkthrough.....47
Figure 46: Menu Flow.....50

Table of Tables

Table 1: HUD Components and their Descriptions created by Shangqi Cai..... 14
Table 2: Control Actions and Gestures. Created by Shangqi Cai.....15
Table 3: Level Progression.....35

Concept High Concept



Figure 1: Level View

Beaver Quest is a puzzle game where you play as a beaver who moves cubes onto pressure plates to collect wood to solve puzzles.

Game Pillars

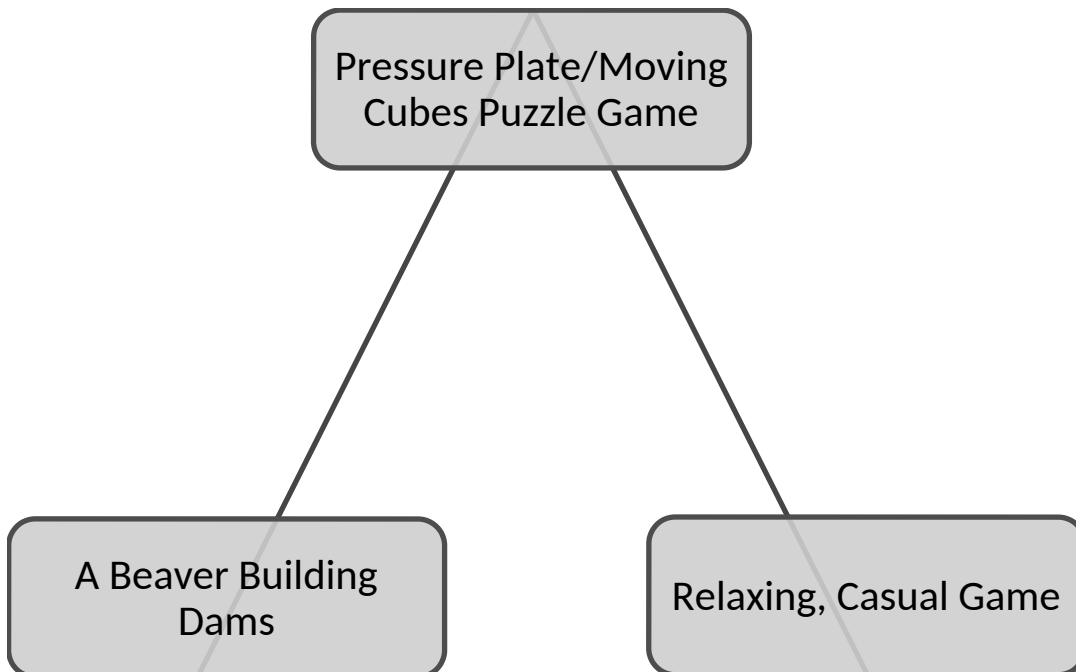


Figure 2: Game Pillars

Game Description

Game Goals and Features:

The goal of Beaver Quest is a simple one, build dams on rivers to complete all the levels. The player achieves this by placing cubes on pressure plates to lower gates that inhibit access to certain areas of the map. Within these areas there are bundles of wood the player needs to collect. Once the player has collected 3 bundles of wood by completing the levels various puzzles, they have enough to build a dam at the river and move on to the next level.

The compelling features of the game are the main character as well as the puzzle solving. The players get to challenge themselves with fun relaxing puzzles while walking around as a cute beaver! The game at its core is trying to provide the player with a sense of accomplishment when solving the various puzzles throughout the game. The player should take away with them a sense of pride and happiness for completing the games as there is no timer or “enemy” the player needs to face; they can take their own time and use their own intelligence.

Beaver Quest is unique from other games via its combination of theme and gameplay as there are not many games that combine being a beaver doing beaver things and building dams as well as solving puzzles. The features of picking up cubes, interacting with pressure plates, collecting wood, and building dams make Beaver Quest stand out from the rest of all the good puzzle games out there.

Context:

The base plot of the game that the player sees upon loading the game is that they play as an adorable beaver. This beaver was living his life with his other beaver friends when an evil tree destroyed all the beaver dams to hoard all the water in the rivers for himself. Training every day the main character, set out on a journey to rebuild all the dams lost to devoid the evil tree of all its water to kill it and save the day. The player interacts with these story elements in the levels by building dams in each of the levels to move to the next level.

Style and Tone:

The look of the game is a top-down overhead view that draws inspiration from the older Pokémon games. The tone of the game is relaxed and fun as the player should feel zero stress when it comes to playing. There are no stressors in the game thus the player can approach the game in whatever way they see fit. There is a tad element of gloominess that comes with the evil tree and the art style getting visibly more “evil” or gloomy in the later levels, as the player gets to the rivers that are closet to the evil tree. The game's art style features an engaging and cheerful design with the main character and the rest of the assets giving off a homey cute vibe.

Gameplay Loops

Core Loop:

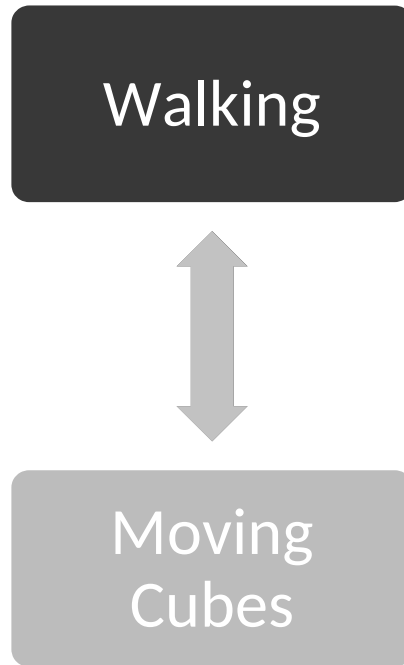


Figure 3: Core Loop

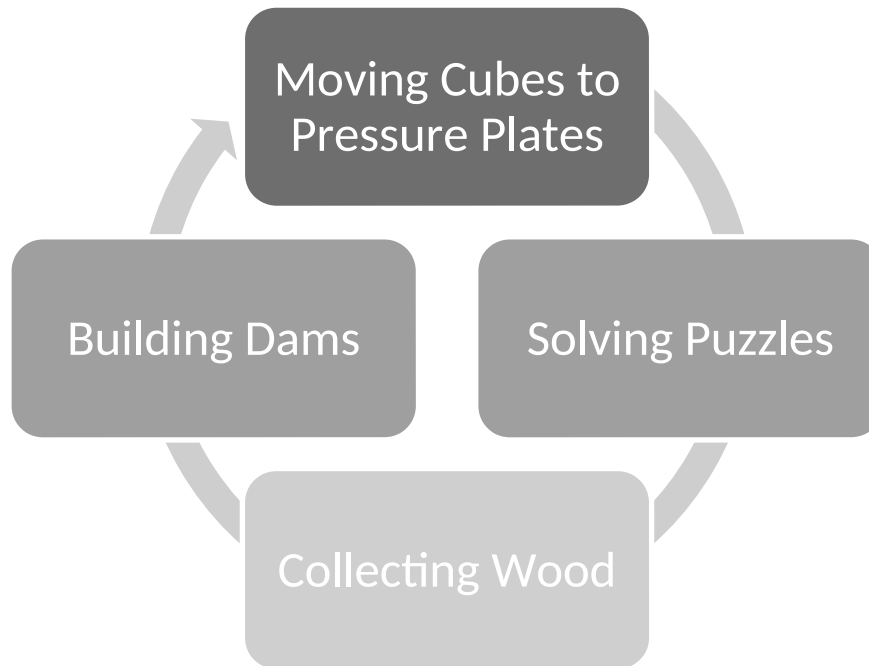
Secondary Loop:

Figure 4: Secondary Loop

Target Player

Our target player from inception was puzzle gamers who are more specifically women around the age of 35. In Japan, South Korea, US, and UK most puzzle players are women; more specifically, 66% of puzzle players in Japan are women, and 73% in South Korea [11]. In the US, 75% of matching puzzle and word/brain/board players are women. In the UK, 74% of puzzle players are women. Puzzle is the most played genre of mobile games in the US, UK, Japan, and South Korea [12]. Our target player currently reflects this data. However, with our most recently performed open beta we had around 25 participants and 53% of them were male and around 80% of our players were in the age range of 18-25. This new data indicates that our target player may be able to be expanded to a younger more diverse crowd of gamer.

Gameplay Minute

Players learn the game's mechanics in the tutorial level learning step by step mechanics as follows: tap to move the character, tap pop-up icons near cubes to pick them up, tap the character for the drop cube UI, place cubes on pressure plates to lower gates, pick up wood, tap build dam icon, and hurt the evil tree by damming water. These steps are reflected below in the following images.



Figure 5: Pressure Plates and Gates



Figure 6: Picking up and Carrying the Cube



Figure 7: Putting down the Cube



Figure 8: Building a Dam and Hurting the Evil Tree

Gameplay

Hierarchy of Epics (Core Gameplay Mechanic Breakdown)

1. 5 Levels
 - a. As a player I want to see a better conveyance of actions and results.
 - i. There should be puzzles that invoke more thought and reuse other puzzle elements.
 - ii. The level will have better conveyance of which plate is triggered.
 - b. As a player I want to solve a puzzle to build a dam.
 - i. All puzzles should have wood pieces and provide meaningful progression to building the dam at the end of the level.
2. Sound FX and Music

- a. As a player I want to have audio feedback when I pick the cube or interact with the level, also I want to have UI sound and feedback.
 - i. When the player interacts with items, there should be a sound effect, moving clicking, touching various objects should also play a sound effect.
 - b. As a player I want there to be music on the menu that I can listen to.
 - i. There needs to be music that plays while the player is in the main menu and can control with the settings.
3. Animations
 - a. As a player I want to see all animations implemented in the game
 - i. There should be a beaver move animation, water animation, wall lowering animation and a pickup cube animation in the game for the player to see.
4. Dam System
 - a. As a player I want to make dams to travel to the next level as the final goal.
 - i. There should be a dam and inventory system that collects wood pieces and allows you to build a dam at the end of the level to progress to the next level.
5. Camera zooms in & shake
 - a. As a player I want to be able to zoom in and out to better see the level
 - i. Have the camera able to zoom in and out functionality
6. VFX and Occlusion
 - a. As a player I want to have particles and conveyance when interacting with game objects such as gates lowering and cube being dropped. Also, I want game objects to highlight when interacting with them.
 - i. When the player picks up cubes and lowers gates, particles fly up.
 - ii. There should be Ant Lines that visually show what pressure plates connect to which gates.
7. Intro Storyboard
 - a. As a player I want to see an intro cut scene to explain the story of the beaver and evil tree.
 - i. There should be a few scenes explaining the story in a series of pictures or words.
8. UI and Tutorial System
 - a. As a player, I want to see all UI components done and a tutorial level to tell the rules.
 - i. There should be a main menu screen, level select screen as well as tutorial pop ups in level 1.
 - ii. There should be a main menu with start, settings and credits buttons.
9. Moving Cubes
 - a. As a Player I want to move a cube with the character
 - i. A cube that can be touched by the player to attach the cube to the player that allows them to move the cube where the player wants

10. Pressure Plate Interactions

- a. As a player I want to interact with pressure plates by moving cubes on top of them
 - i. An interactable surface that is activated by a cube that solves elements of the puzzle

11. Collapsing Wall Puzzle Elements

- a. As a player I want to utilize collapsing walls so they can help me solve the puzzle
 - i. Walls that collapse and allow the player and cube to move past them to solve the puzzle

12. Input System Improvements

- a. As a player I want to touch character and show/highlight the valid tiles that I can place the cube on to while I am holding the cube
 - i. When the player press/touches the character above 2 seconds while holding the cube, the available highlight tiles should appear in the region 3x3 centered player location that the player can choose where to place the cube
- b. As a player I want to touch and directly go to the touched position and be told whether I can go or not
 - i. When a player touches the screen, the character should find the closest path and move to the position as the position is valid. Besides, the valid position should have a different icon and FX

13. Player Motion

- a. As a player I want to tap to move
 - i. Players can do basic moves with Tap (coding) with moving animation.
 - ii. The interactive with cubes is done. The UI/Icon about holding cubes is done.
 - iii. Players can move cubes in different directions.
 - iv. Sounds effects of move cube.
- b. As a player I want to carry cubes to interact with obstacles.
 - i. A placeholder projectile shoots in a circle of dust when pushing boxes along with sound effects.

14. Player Interaction

- a. As a player I want to be able to use my finger to move a cube.
 - i. A placeholder projectile moves with a circle of dust when pushing or pulling cubes, along with sound effects. Also, there will be a slight change in the cubes such as lighting or color to indicate it was placed correctly.

15. Finalize Game Files

- a. As a player, I want to have an APK file that can be installed on my tablet.
 - i. The APK file should be downloadable and available to consumers so that they can download them on the tablet.
- b. As a programmer, I want to document all the game source files.
 - i. The game source files should be documented and complete in the Hopper Drive.

16. Finalize Game Poster

- a. As a player, I want to see a completed version of the game poster as well as all the completed art assets.
 - i. A shippable, complete version of the game poster from the playtest session.

17. Finalize Game CD Case

- a. As a player, I want to see a CD Box with complete art and advertising that makes me want to buy the game.
 - i. A shippable, complete version of a game CD case that properly displays the game in a good light.

18. Complete Marketing Assets

- a. As a player, I want to be able to read a quick game synopsis on what the game is about, as well as view a game trailer that lets me see gameplay.
 - i. Make a complete trailer that shows all the necessary logos and gameplay footage of the game, as well as write a game synopsis that goes into written detail about the game and mechanics that might be found in it.

19. Create Developer Wiki

- a. As a player, I want to check the developer wiki to know the game setting, background, and other useful features about the development of the game.
 - i. The Developer Wiki should include game story, background, how to play, inspiration, necessary references files and images, as well as mechanics and features.



Player's Objective




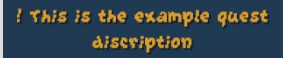

The player needs to collect a specified amount of wood on the map and attempt to build a dam. Along the way, the player must move cubes and place them on pressure plates to activate obstacle walls, allowing progress toward the dam.

Camera/HUD

See fig. 2.

Table 1: HUD Components and their Descriptions created by Shangqi Cai

COMPONENT		DESCRIPTION	LOCATION
PAUSE BUTTON		The button is used to open the pause menu.	Bottom-left corner of the screen.
WOOD COUNT INDICATOR		Displays the amount of wood the player has collected, and the total amount needed to collect.	Top-right corner of the screen.

PLACEMENT POSITION INDICATOR		Indicates where the player can place a box during placement operations. It aligns the available placement positions and displays location-specific feedback.	player's current position. (3x3)
CUBE PICKUP INDICATOR		Appears when the player can pick up a designated Cube. The indicator will not appear if the Cube is outside the interaction range.	Position relative to the Cube.
FOREGROUND DISPLAY INDICATOR		Appears around the edges of the screen and adjusts dynamically with camera zooming or panning.	Around the edges of the screen.
DAM BUILDING INDICATOR		Displays when the player is near the location to repair or build a dam. The indicator pops up and shows different visuals depending on the dam's state.	Dam location
QUEST INDICATOR		Displays the player's current quest information.	Center-top of the screen.
QUEST MARKER INDICATOR		The Quest Marker appears when a quest is triggered, guiding the player towards the objective.	Quest objective location.

Controls

Table 2: Control Actions and Gestures. Created by Shangqi Cai.

ACTION	GESTURE	DESCRIPTION
MOVE WITHIN WORLD	Tap	Tap on the map to move to the desired location.
PICK UP BOX	Tap the Cube's interactive button	Tap the interactive button that appears when near the box to pick it up.
PLACE BOX	Long press on the player	Long press on the player for 1 second to bring up the placement panel, then tap to choose a placement grid.
ZOOM OUT CAMERA	Pinch gesture, two fingers moving apart	Zoom out the player's camera view.
ZOOM IN CAMERA	Pinch gesture, two fingers moving closer	Zoom in the player's camera view.
DRAG CAMERA VIEW	Drag with two fingers	Drag the player's camera view until reaching the edge of the map.

Game Metrics

In the game 1 unit length of 1 is used as the base metric.

Communication/Conveyance Mechanisms

- The first level has a tutorial section where popup messages appear and provide quest like indicators that guide the player to interacting with the game's base elements.

Player Movement/Interactions

The main character relies on the A-star path-finding system to move around, where the player simply clicks on the location they want to move to, and the game will give hints based on whether they can move to that location. If it is possible to move to the location, the beaver will automatically move to that location, if it is not possible to move to that location, the beaver will not move.

Health System/Checkpoint System

N/A

Gameplay Details

Backstory (if applicable)



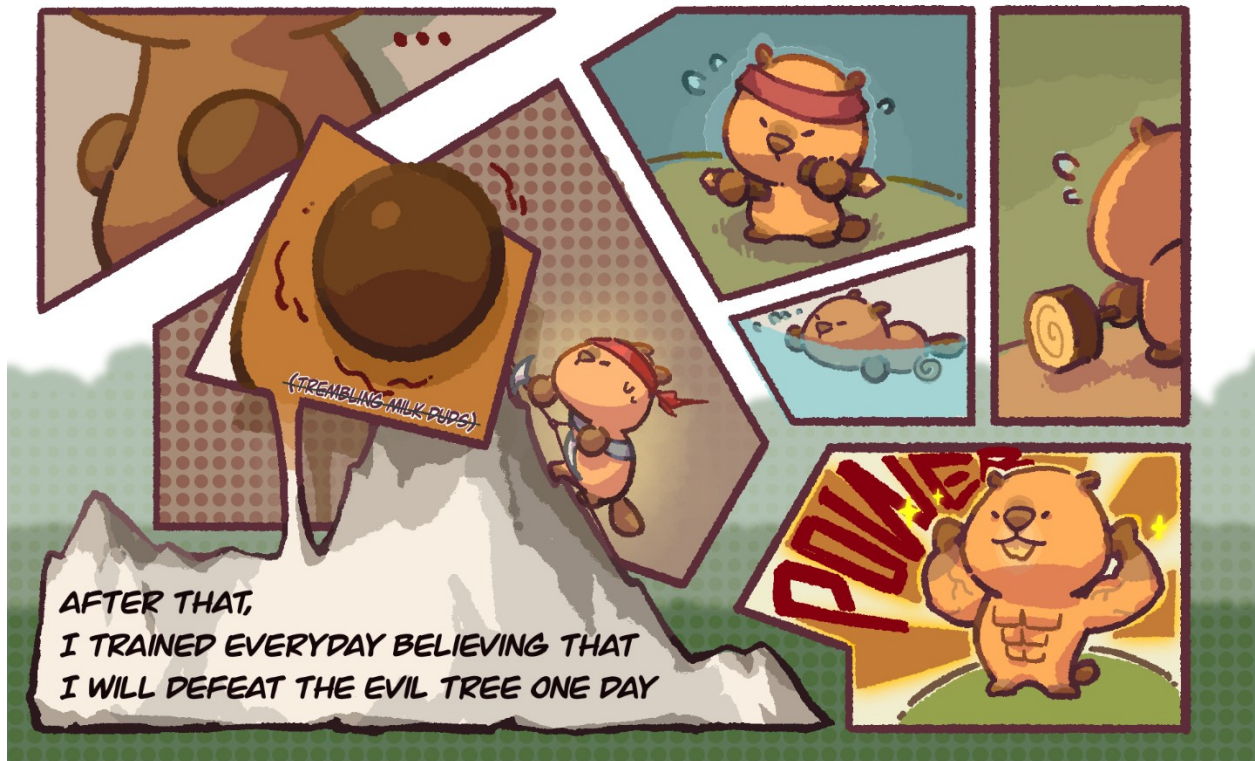






Figure 9: Storyboard Images

Main Character (if applicable)

Justin Beaver - LinkedIn Page



LinkedIn

Justin Beaver  · 2nd

Gender:  Height: 21.81 Inches Weight: 38.8 Lb

Dam 234, Eden V, Guildhall Forest [Contact info](#)

500+ connections

About

- Dam Architect, Engineer
- Good at cutting trees
- Fitness fanatic

- Suuuper smart
- Warm-hearted

- Love Organic branches
- Hate Evil Tree

Figure 10: Main Character Description

Concept(s) (if have main character)



Figure 11: Original Concept Draft - Final Choose: 02



Figure 12: Main Character - Beaver_Justin

Weapons (if applicable)

N/A

Skills System (if applicable)

N/A

Enemy/Secondary Character(s) (if applicable)

N/A

Concept(s)

N/A

Enemy Movement/Interactions (if applicable)

N/A

Objects System (if applicable)

- **-Cubes & Pressure Plates**
Place Cubes on Pressure plates to target mechanisms.

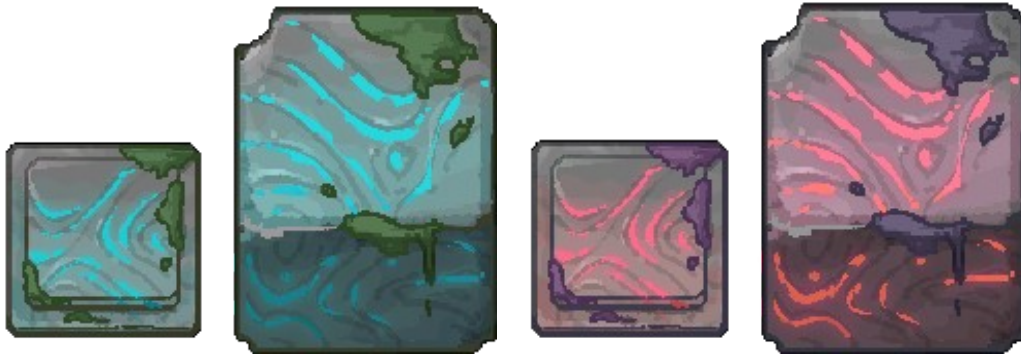


Figure 13: Basic 2 Kinds of cubes [Blue & Red] (Pressure Plate Abandoned)



Figure 14: 2 Unused Cubes (Abandoned)

Walls

Wall: Prevent passing

Door: After solving the puzzle can pass



Figure 15: 3 Kinds of Walls: Tile Map [Stone & Bush & Evil Ivy]

[- Tile Map Direction Diagram Sample for LDs]

- **-Doors & Doors Pressure Plates**

Door: After solving the puzzle can pass



Figure 16: Door of Stone Wall - Ver2.0_Raisable Wall



Figure 17: Pressure Plate of Door (Raisable Wall)



Figure 18: In Game: Pressure Plate & Door Connected by Antline

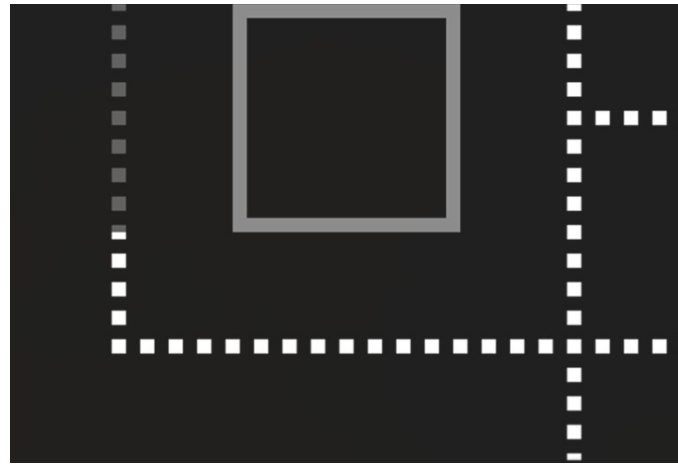


Figure 19: Tile map of Antline (straight & Corner & Faded & Cross)



Figure 20: Door of Bush Wall with fireflies dancing Animation (Abandoned)

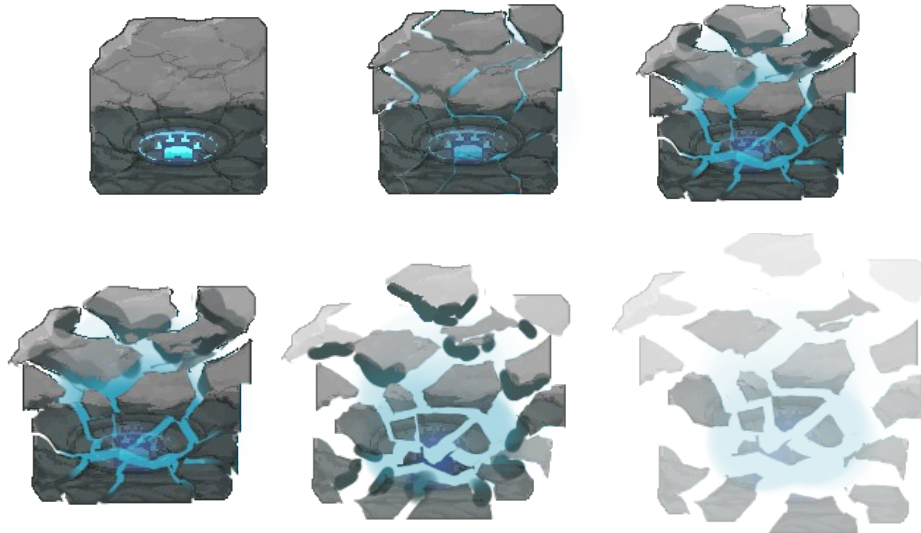


Figure 21: Door of Stone Wall - Ver1.0_Breakable Wall (Using in Load Page)

- **-Bundles & Dam**

Wood Bundle: Can be picked up in scene.

Dam: Made of Bundles that cut off Evil Tree's water supply.



Figure 22: Wood Bundle & Collection UI



Figure 23: Dam Building Animation

- **-River**

- Supply water to Evil Trees.

- Player passes the level when the water is cut off by Dam.

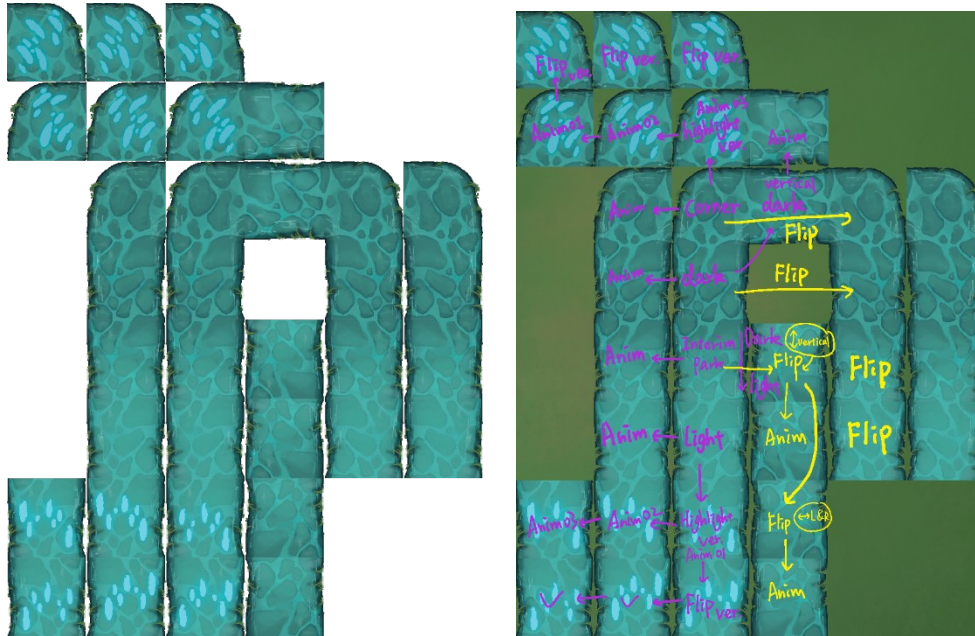


Figure 24: River Tile Map & Highlight Flowing Animation



Figure 25: Riverbed Tile Map

- **-Evil Tree**



Figure 26: Evil Tree & Dead Sprite

- **-Environment Decorations**



Figure 27: Trees01



Figure 28: Trees02_Group & Fallen leaves



Figure 29: Flowers

- **-Puzzle Gate & Ivys (Abandoned)**
Indicates the player's quest progress.



Figure 30: Puzzle Gate & Ivys Tile map [Stright & Corner & Top]

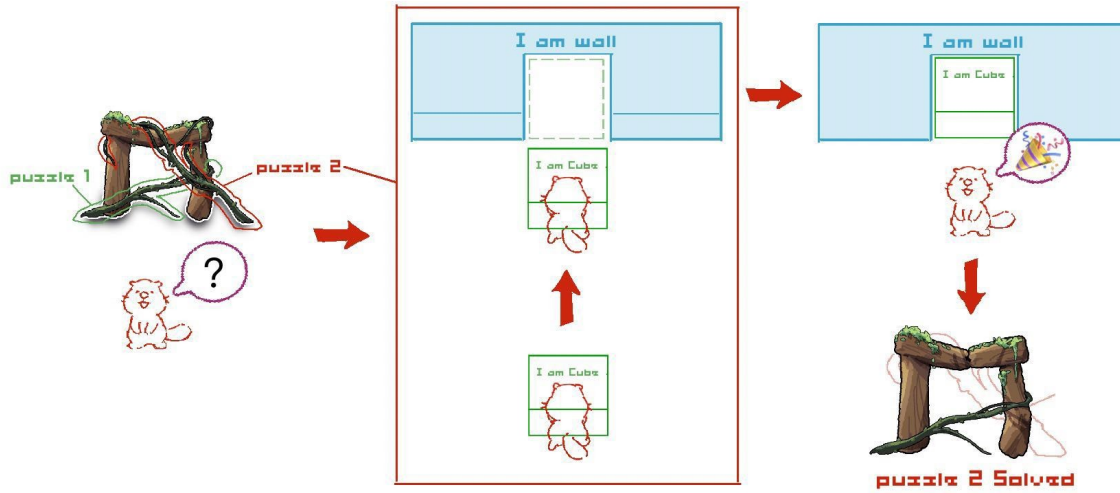


Figure 31: Early Function (Abandoned)

Pickups System (if applicable)



Figure 32: Wood picks up UI

The player collects wood by taps on the wood by finger, causing the beaver to move toward its location. After triggering a collision between the Beaver's collider and the wood's collider, Beaver successfully picks up the wood.

World Layout

Game World Overview



Figure 33: Tutorial level 01



Figure 34: Level 02



Figure 35: Level 03



Figure 36: Level 04



Figure 37: Level 05

Level Progression

Table 3: Level Progression

Level	Mechanics Introduced	Mechanics Reinforced	Difficulty (1-10)
Level 1	Blue Cube, Blue Pressure Plate, One-Plate Blue Gate, Wood Piece		1
Level 2	Red Cube, Red Pressure Plate, One-Plate Red Gate, Two-Plate Blue Gate, Reusing Cubes	Blue Cube, Blue Pressure Plate, One-Plate Gate, Wood Piece	3
Level 3	Two-Plate Red Gate	Red Cube, Red Pressure Plate, One-Plate Red Gate, Two-Plate Blue Gate, Reusing Cubes	5
Level 4	Three-Plate Blue Gate	Reusing Cubes	7
Level 5	Three-Plate Red Gate	Three-Plate Blue Gate, Two-Plate Red Gate	10

Environments

- Every Level is surrounded by a variety of tree assets that serve as border decoration.
- Every Level is surrounded by stone walls which serve as border for the levels.
- Every Level has bush walls within the level that are used to prevent the player from accessing without using the gates.
- The first 3 levels have a softer healthier looking green tile that is supposed to be like grass.
- The later levels 4 and 5 have a browner tile that is supposed to be an unhealthy eviler looking grass, signifying getting closer to the evil tree.
- The later levels also have some evil branches serving as walls

Concept(s)



Figure 38: Early In Game Layout Draft_Ver1.0



Figure 39: In Game Layout_Ver2.0



Figure 40: In Game Layout & UIs _Ver3.0

Level Details

Level 1:

Level Summary

This level serves as the tutorial for the game. The player learns how to move the character, how to pick up cubes, how to place the cubes and where and what placing them on pressure plates does. The player then learns the functionality of collecting wood and building dams.

Map



Figure 41: Level 1 Walkthrough

Map Description

Map Label	Event Description	Key Info (e.g. Challenges, Actions)	Approx. Difficulty (1-10)	Approx. Time	Wow?
1	The player begins the level and is met with a few tutorial pop ups.	Tutorial messages that inform the player how to move.	1	10 s	no
2	The player moves to the cube and is	Tutorial message that informs the	1	10s	no

	met with a tutorial pop up. The player then picks up the cube	player how to pick up the cube			
3	The player brings the cube to the pressure plate and places the cube down on it. This action will lower the gate in front of the player.	Tutorial message showing how the player can place the cube and what placing it does. Also, messages on collecting 3 pieces of wood and building a dam at the river.	2	10s	yes
4	Player collects the two wood pieces and picks up the cube.	Collect wood, Pickup Cube.	1	15s	no
5	The player takes cube over to the pressure plate and places it to lower the gate and collect the last piece of wood.	Pressure Plate, Collect wood.	3	20s	no
6	Player takes the 3 pieces of wood to the river and can build the dam to move onto level 2	Building a dam.	1	15s	yes

Level 2:

Level Summary

This is the second level of the game, which first introduces the red cube and wall that require two cubes to open the wall. In this level, more pressure plates start appearing, players need to strategically use a limited number of cubes to activate all the wall switches, clearing obstacles to reach the river and build dam.

Map



Figure 42: Level 2 Walkthrough

Map Description

Map Label	Event Description	Key Info (e.g. Challenges, Actions)	Approx. Difficulty (1-10)	Approx. Time	Wow?
1	Player picks up the first cube and place it on the one of the pressure plates which trigger the wall that has two blue pressure plate.	The cube is a puzzle kit and also an obstacle	2	12s	Yes
2	Player picks up the red cube and place it on the red pressure plate to	Pick up the cube, Pressure Plate,	2	15s	No

	open the red wall on the left				
3	Player goes through the room behind the red wall and pick up the second blue cube and the first wood.	Pick up the wood	1	7s	No
4	Player places the second blue cube on the pressure plate and open the wall that has two blue pressure plate.	Pick up the cube, Pressure Plate,	1	17s	Yes
5a	Player picks up the blue cube	Pick up the cube	1	5s	No
5b	Player put the blue cube on the pressure plate and open the wall.	Pressure Plate,	1	6s	No
6a	Player picks up the blue cube on the button of the map.	Pick up the cube	2	10s	No
6b	Player enters the room and places the cube on the pressure plate and open the wall on player's left side.	Pressure Plate,	2	9s	No
7	Player enters the room on the left side which he/she just open, and pick up the red cube and second wood.	Pick up the cube Pick up wood	3	7s	No
8	Player picks up the blue cube again and open the wall on the bottom right corner of the map.	Pressure Plate	2	9s	No
9	Player goes pick up the red cube and enter the bottom right corner of the map. And place the red cube on the red pressure plate.	Pick up the cube Pressure Plate	3	12s	Yes
10	Player leaves the room and place the blue cube on the pressure plate. And open the blue wall	Pick up the cube Pressure Plate	1	10s	No

	above them.				
11	The player goes up and picks up the last piece of wood	Pick up wood	2	11s	No
12	Player goes to the location that beside the river building dam and finish the level.	Building a dam.	1	10s	No

Level 3:

Level Summary

This is the third level of the game. As players venture deeper into the forest, this level introduces a wall that requires two red cubes to activate for the first time, slightly increasing the difficulty compared to Level 2.

Map



Figure 43: Level 3 Walkthrough

Map Description

Map Label	Event Description	Key Info (e.g. Challenges, Actions)	Approx. Difficulty (1-10)	Approx. Time	Wow?
1a	Player picks up the first blue cube on the middle area of the map.		1	7s	No
1b	Player places the cube on the pressure plate that locate at left side of the map. And open the room		2	9s	No

	behind the wall.				
2	Player enters the room and pick up the second blue cube.		2	10s	No
3a	Player picks up the second cube and place it on the pressure plate.		1	6s	No
3b	Player enters the room and pick up the wood.		1	11s	No
4	Player places the two cubes on the two-pressure plate and open the wall on the left. Player enters the door and pick up the wood.		2	8s	Yes
5	Player places the two cubes on the two-pressure plate and open the wall on the top.		4	15s	No
6	Player picks up the blue cube and place it on the pressure plate beside them. And open the wall.		3	12s	No
7	Player enters the room and place the blue cube on the pressure plate. The pressure plate opens the wall on the left.		2	5s	No
8	Player enters the room on the left,pick up the first red cube and then leave the room.		2	12s	No
9	Player put two blue cubes on the pressure plate and open the wall on the left. Player goes inside the room and pick up the second red cube.		4	14s	No
10	Player put two red cubes on the pressure plate. And open the red wall above them.		5	16s	Yes
11	Player enters the last room and pick up the last wood.		1	10s	No

12	Player goes to the right side, building dam and finish the level.	Building a dam.	1	8s	No
----	---	-----------------	---	----	----

Level 4:

Level Summary

The player will have the opportunity to reinforce their use of the red and blue cubes combined, as well as two-plate gates. In this level the mechanic of having to reuse cubes gets amped up a few levels in difficulty as the player really must start thinking about reusing cubes often. The player is also introduced to the three-plate gate.

Map



Figure 44: Level 4 Walkthrough

Map Description

Map Label	Event Description	Key Info (e.g. Challenges, Actions)	Approx. Difficulty (1-10)	Approx. Time	Wow?
-----------	-------------------	-------------------------------------	---------------------------	--------------	------

1	The player begins level 4.	Movement to step 2.	1	10s	no
2	The player picks up the cube and places it on the pressure plate, opening the gate in front of them.	Pressure Plate, Pick up Cube.	1	20s	no
3	The Player picks up the second cube and places it on the pressure plate connected near step 3, this will open the other gate allowing the player to pick cube the first cube and bring it through the gate.	Pressure Plate, Pick up Cube.	4	20s	yes
4	The player will place both the cubes on the two pressure plates connected to the same gate that leads to a third cube and a piece of wood. Then with the 3 cubes the player can repeat step 3 to get all 3 cubes out of the of the same area.	Pressure Plate, Pick up Cube, Red Cube, Collect Wood.	5	60s	Yes
5	The player places the two blue cubes on the pressure plates connected to the gate leading the way to the red pressure plate	Pressure Plates, Pick up Cube.	4	30s	no
6	The player takes the two blue cubes and moves to the pressure plates near step 6 connected to another two-plate gate.	Pressure Plates, Pick up Cube, Collect Wood.	3	50s	no
7	The player can then enter the next area and collect the second piece of wood and get the third blue cube because the gate that is open due to the red plate in step 5.	Pick up Cube, Collect Wood.	1	20s	no
8	The player needs to take the two blue cubes on pressure plates at step 6 and place them back on the pressure plates at step 5 to get the red cube back. Then repeat	Pressure Plates, Pick up Cube.	8	60s	no

	step 6 and this time place the red cube at the pressure plate near the bottom of the map. This will allow the player to grab the two cubes from step 6, and head into the next area.				
9	The player places all 3 cubes onto the three-plate gate which allows the player to gather the last piece of wood	Pressure Plates, Pick up Cube, Collect Wood.	4	60s	yes
10	Player takes the 3 pieces of wood to the river and can build the dam to move onto level 5	Building a dam	1	20s	no

Level 5:

Level Summary

This level is meant to show mastery of all mechanics as it is the last level of the game. The player will be heavily challenged with multiple two-plate gates as well as three-plate gates. The reuse of cube mechanic is also greatly increased in challenge as the player must think of reusing cubes after multiple steps had gone without using those cubes.

Map



Figure 45: Level 5 Walkthrough

Map Description

Map Label	Event Description	Key Info (e.g. Challenges, Actions)	Approx. Difficulty (1-10)	Approx. Time	Wow?
1	The player begins the level by placing the first red cube on the pressure plate and can enter the first area.	Pressure Plates, Pick up Cube.	1	10s	no
2	The player takes the first blue cube out in the open and places it on the pressure plate at the bottom middle.	Pressure Plates, Pick up Cube.	2	15s	no
3	The player enters in the next area and picks up the red cube and brings it back out to the central area.	Pick up Cube.	1	10s	no
4	The player will use both the blue cube and red cube gotten at step 3 to open both red and blue gates by step 5.	Pressure Plates, Pick up Cube.	4	25s	yes

5	The player takes the second red cube and brings it out to the central area.	Pick up Cube.	1	10s	no
6	The player will use both red cubes to open the two-plate red gate.	Pressure Plates, Pick up Cube.	3	20s	no
7	The player grabs the second blue cube and brings it out to the central area.	Pick up Cube.	1	10s	no
8	The player will place one blue cube on the pressure plate used at step 2 and will bring in the newly gotten blue cube to place at the far bottom left pressure plate. This will open the gate at step 9.	Pressure Plates, Pick up Cube.	4	30s	no
9	The player will take one of the red cubes and place it on the pressure plate revealed by step 8 as well as collect their first piece of wood.	Pressure Plates, Pick up Cube, Collect Wood.	3	30s	no
10	The player will take the third red cube and place it in the central area.	Pick up Cube.	1	10s	no
11	The player will place 2 red cubes on pressure plates to open the area used in step 6, then will place the third cube onto the red pressure plate inside the area. This will open a gate to the entrance area.	Pressure Plates, Pick up Cube.	8	40s	yes
12	The player will grab the fourth red cube and bring it back to the central area, then the player will grab the cube used to get out back to the entrance and bring that to the central area too.	Pressure Plates, Pick up Cube.	5	30s	no
13	The player will grab both blue cubes and place them at the two-plate blue gate, this will allow the player to	Pressure Plates, Pick up Cube, Collect wood.	7	60s	no

	bring in 3 red cubes and collect the second piece of wood.				
14	The player will place 3 red cubes onto the three-plate gate so then the player can grab the two blue cubes on the outside area.	Pressure Plates, Pick up Cube.	5	60s	yes
15	The player will place both blue cubes at the two-plate blue gate and gather a third blue cube.	Pressure Plates, Pick up Cube.	3	40s	no
16	The player will take all 3 blue cubes gathered and place them at the three-plate blue gate puzzle within the same area, which will open the gate at step 17.	Pressure Plates, Pick up Cube.	4	60s	no
17	The player will grab one of the remaining red cubes and place it on the pressure plate which will open the gate at step 18.	Pressure Plates, Pick up Cube.	10	60s	yes
18	The player will collect the last piece of wood needed to complete the level.	Collect wood.	2	20s	no
19	The player brings the 3 pieces of wood to the river at the top of the level and win the game.	Build a dam	1	20s	yes

Menu System

Menu Flow

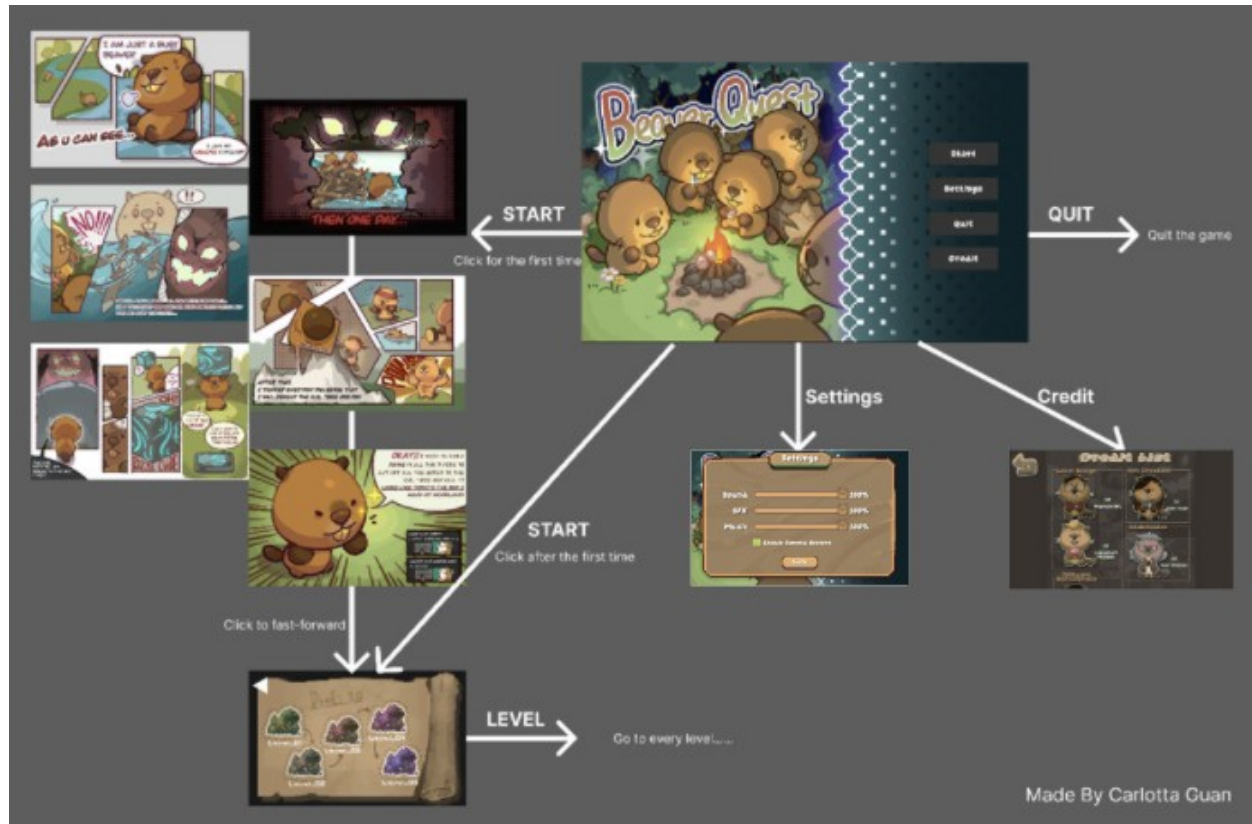


Figure 46: Menu Flow

Menu Descriptions

There are 4 buttons on the menu, Start, Settings, Exit, and credits. When tapping start for the first time, you can read the storyboards for the entire game, tap the storyboards too fast-forward, and after reading the storyboards you go directly to the level selection screen. If you tap start again from the main menu, the storyboard will no longer appear.

Menu Details

Installation

The players just need to download and install on the Android tablet to play the game.

Title Splash Screen(s)

It will show the unity splash screen, SMU splash screen and EdenV splash screen.

Main Menu

Start; Setting; Quit; Credit

Options/Controls Screen

Button for adjusting the volume; Button for adjusting the camera zoom system

Credits Screen

Picture showing all team members

Exit/Pause Screen

Resume button; back to main menu button

Game Over Screens

Picture with animation effect with a button on the whole screen to return to the main menu

Intro/Level-to-Level/Outro Cut-Scenes (if applicable)

Loading widget

References

// Section Art Assets

- [1] Jean.Y, [Cover photo] Screenshot of Beaver Quest Poster. EdenV, 2024. November 18, 2024
 - [2] Jean.Y, [Credit Avatar] EdenV, 2024. November 18, 2024
 - [3] Jean.Y, [In Game Objects] EdenV, 2024. November 18, 2024
 - [4] Jean.Y, [Menu Page] Main menu Page, Level Selection Page, Secondary Menu Page, EdenV, 2024. November 18, 2024
 - [5] Jean.Y, [UIs] EdenV, 2024. November 18, 2024
 - [6] Jean.Y, [Team Logo] EdenV, 2024. November 18, 2024
 - [7] Jean.Y, [Tile Maps] Tile Maps of Walls, River, Backgrounds of Levels, EdenV, 2024. November 18, 2024
 - [8] Jean.Y, [Animations] Animations of Character, Environment objects, EdenV, 2024. November 18, 2024
 - [9] Jean.Y, [Game Icon] EdenV, 2024. November 18, 2024
 - [10] Jean.Y, [Story Board] EdenV, 2024. November 18, 2024
- Game Font, "Bitmap, pixel, screen fonts, small fonts, userbar | dafont.com," www.dafont.com.
<https://www.dafont.com/bitmap.php>

// Section Table

- [11] S. Cai, "HUD Components and Their Descriptions," BeaverQuest_GDC, EdenV, 2024.
- [12] S. Cai, "Control Actions and Gestures," BeaverQuest_GDC, EdenV, 2024.

//Section Target Player

[13] A. Knezovic, "Puzzle Games Report: Players, Monetization & Advertising - Udonis," Udonis Mobile Marketing Agency, Dec. 20, 2023. [Online]. Available: <https://www.blog.udonis.co/mobile-marketing/mobile-games/puzzle-games-report>

[14] "Mobile Puzzle Games: Popularity, Revenues & Opportunities Across East and West," New Zoo, Aug. 12, 2021. <https://newzoo.com/resources/blog/puzzle-game-mobile-data-revenues-player-behavior-consumer-insights-us-japan-china-korea> (accessed Oct. 01, 2024).

//Section Music

HarumachiMusic, "fireplace | Royalty-free Music," *Pixabay.com*, Sep. 25, 2023. <https://pixabay.com/music/modern-classical-fireplace-167694/> (accessed Dec. 03, 2024).

XtremeFreddy, "Game Music Loop 2 | Royalty-free Music," *Pixabay.com*, Mar. 27, 2023. <https://pixabay.com/music/beats-game-music-loop-2-144037/> (accessed Dec. 03, 2024).

Other sound effects via the SMU Guildhall Hooper Repository, December 3, 2024

Pixabay, "Pixabay," *Pixabay.com*, 2024. <https://pixabay.com/>

