Shovel the World

Version 1.03

Revisions

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| --- | --- | --- | --- |
| Version | Author | Date | Comments |
| 1.00 | Julia Gallagher | November 20, 2018 | Initial Version |
| 1.01 | Julia Gallagher | November 27, 2018 | Refine Details |
| 1.02 | Julia Gallagher | December 12, 2018 | Majority Assets Complete |
| 1.03 | Julia Gallagher | December 13, 2018 | Majority Scripts Complete |

Introduction

This Document specifies the development of the “Shovel the World” game. It includes basic logic elements and design explanations.

Scope

This document is intended to be read by programmers, artists, and producers involved in the creation of the “Shovel the World” game.

References

Random Tile Generation

https://www.youtube.com/watch?v=xNqqfABXTNQ

https://blogs.unity3d.com/2018/05/29/procedural-patterns-you-can-use-with-tilemaps-part-i/

Tilemap Manipulation

https://www.raywenderlich.com/23-introduction-to-the-new-unity-2d-tilemap-system

Lighting

https://unionassets.com/blog/working-with-lighting-in-unity-theory-and-practice-462

Pathfinding

https://arongranberg.com/astar/front

Assets

Scene Transition

https://assetstore.unity.com/packages/tools/particles-effects/simple-fade-scene-transition-system-81753

Sound

http://soundbible.com/

https://www.bensound.com

Specification

Concept  
This game came from the initial idea of taking a shovel to run around an open world map and dig various spots. Later, to add a meaningful goal the idea of a glowing shovel as a time limit. Finding regular gems seemed too ordinary, so addressing each gem to a color and restoring that color to the world appealed more. Adding mob/enemies added tension and a more challenging aspect. The name of the game was based on how shovel sounds like color.

Story  
Our character, Chara, is introduced waking up in a colorless pitch-black world. Using a magical shovel, they set off to restore color, light and hope to the empty world.

Objective  
The player will be responsible for the movements of Chara and their progression in the world. There will be multiple dig spots on the map that can uncover one of a few options. Upon finding a color gem, Chara is teleported back to the start of the map and the world is reset with the added color. Finding all 7 color gems completes the game.

Game Structure  
This is a single player game and a full playthrough should take around 10 minutes.

Development  
This game includes a variety of Unity techniques, including: tilemaps, animation, lighting, pathfinding, level progression, and start/end screens. It also has a bonus cinematic at the start of the game.

Edits  
Creating personal assets took longer than expected, so reduced mob types to 1.   
Due to time constraints chose to end game with an image instead of a mini cinema.

Gameplay

Actions  
The player can move using [w] [a] [s] [d] keys and sprint with [shift]. Upon an interactable using [space] will commence a predetermined action. Pressing [esc] will bring the player to the pause menu and freeze time.

Sprinting  
[shift] causes chara to sprint, but shovel glow will decrease faster. Sprinting allows player to outrun mobs.

Interactions

Dig Spots  
There are various dig spots on the map, which hold a variety of loot. These include: better shovel, refill on current shovel, full life recovery, color gem, and nothing.

Mobs  
Chase Chara upon site and after sprinting a certain distance return to predetermined path.

Ghostie  
Similar appearance to a pacman ghost, this start appearing after finding the orange gem. Easy to outrun and does low damage.

Graphics

Landscape  
The landscape starts white and as color gems are found it slowly gains those colors  
red >> orange >> yellow >> green >> blue >> purple >> white

Bushes  
 Randomly generated in the landscape starting as black and white

Pillars  
 Center of map shows 7 pillars where gems fill depending on level

Player  
Chara a black and white figure with whiskers.

Mobs  
Upon finding 2 gems mobs will start to appear and increase in intensity with each gem found. Intensity is raised by speed and homing ability. Amount of damage done is not raised.

Objects

Shovels  
Three types including a basic bland shovel, shiny shovel and super sparkly shovel.

Color Gems  
A diamond shaped gem in the following colors: red, orange, yellow, green, blue, purple, white.

Dig Spots  
Interactable places found randomly throughout the map. Designated with a small star, already dug places will show a small dirt pile.

Shovel Glow  
Chara will glow depending on the light meter in UI. The radius will shrink as the meter depletes. The speed at which the glow shrinks depends on current shovel. Sprinting causes glow to shrink faster.

UI

Health Meter  
Shown by a heart in upper left side.

Shovel Meter  
Shown by a shovel in upper left side. Shovel in current color of world. Bar below indicates remaining light source. Outline of bar indicates which type of shovel.

Code

Chara  
For basic character movement. Used in conjunction with Animator.

ShovelLogic  
Logic for actions in game. Deals with stars and works with UI for editing icons.

PlayerCamera  
Camera for main gameplay, which follows character. Used with Chara script.

UIEdits  
Code for UI in game levels. Features heart meter, shovel glow, and current shovel.

PauseMenu  
Used in conjunction of pause menu, refers to SceneOrganizer

AudioManager  
Code for all sound properties.

Sound

All sounds found from…

Troubleshooting

Lighting  
Ambience lighting refuses to work and darken world. Created a work around using an overlay.

Menus  
Sometimes pause menu does not work.

Dig Spots  
Had a hard time switching star sprites to dirt sprites. Upon research it seems to be a common Unity drawback with reloading an edited scene as a solution.

Statement

why game is large and complex…

Development Tools

Unity

Corel Painter 2019 for graphics

Timeline

|  |  |  |
| --- | --- | --- |
| Title | Date | Notes |
| Start Date | November 20, 2018 |  |
| Complete game structure | December 10, 2018 |  |
| Complete basic code | December 10, 2018 |  |
| Complete basic unique graphics | November 27, 2018 |  |
| Complete game logic | December 14, 2018 |  |
| Complete sound effects | December 14, 2018 |  |
| Complete animations | December 14, 2018 |  |
| Final Tweaking | December 14, 2018 |  |
| Final Project Finish | December 14, 2018 |  |

Team

Project Manager: Julia Gallagher

Main Programmer: Julia Gallagher

Main Artist: Julia Gallagher