Twenty Objects: The Phoenix Art Museum: North Wing Collection Augmented Reality: Rain Painter

Level Design Document

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VERSION HISTORY

About version numbers:

XX.YY.ZZ format
  XX – major revisions, new sections, complete section revisions
  YY – revisions to existing sections, major and minor
  ZZ – small corrections, typos, grammar, formatting, etc.

01.00.00

 Added: Initial Documentation
 Software Gameplay Architecture, Sonic
Architecture, Visual Architecture,
Accessibility and Use, Introduction

INTRODUCTION

Louisa McElwain was fascinated by the way light changes when a storm comes. This will reflect in visual changes as the avatar collects raindrops. Moving left, right, and jumping is meant to emulate what the painter feels as she creates/ adds light to the piece.

WORLD DIAGRAM

This will be provided by the overarching hub of the virtual art gallery.

OVERVIEW OF LEVEL DESIGN (RAIN PAINTER)
This is from the Game Design Document.

Level 18: Plot Point: N/A	**Goal: Collect 200 raindrops in 2 minutes** Rules: traverse maps Mechanic: left and right to maneuver, space to jump	**Challenge: uncover the painting** Strategy: move forward Tactics: evade tumbleweeds and lightning

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LEVEL DESIGN DIAGRAM

Map 1

Start   End

Tumbleweed

Map 2

Start

End

Map 3

Droplet

Tumbleweed
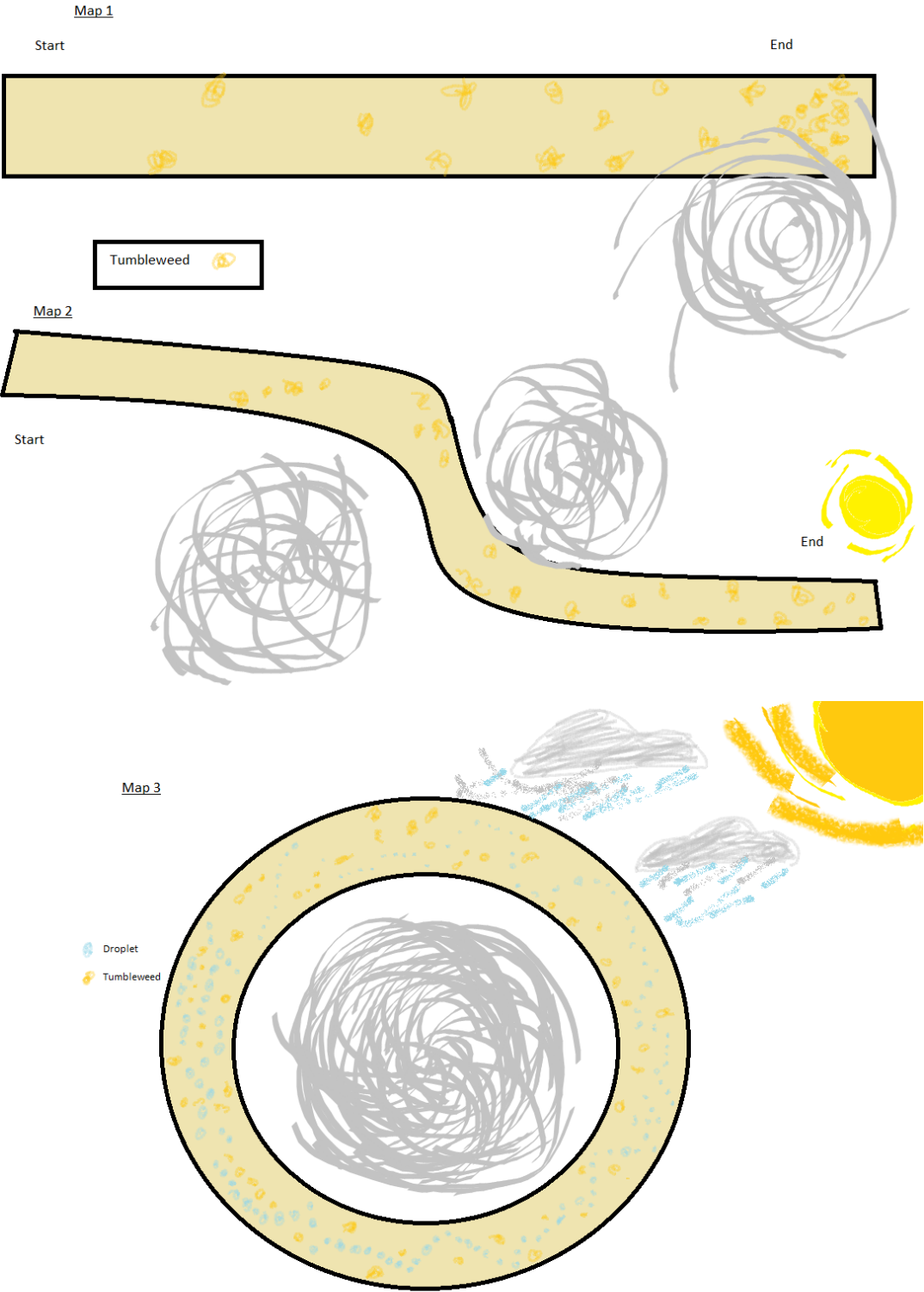
MISSION DESIGN LIST ⬇

Name of Mission	Name of Mission Design Document
Road	Level Design Diagram 1 and 2
The Storm	Level Design Diagram 3

ACCESSIBILITY & USE
From the Game Design Document.
  According to these guidelines: http://gameaccessibilityguidelines.com how will your game be made accessible to the greatest number of abilities? Write the goals for accessibility the general inclusion strategies here.

INCLUSION

Ability	Level (Basic, Intermediate, Advanced)	Strategy for inclusion
Fine Motor	*Basic*	*We will ensure controls are as simple as possible.*
Large Motor	*Basic*	*We will ensure controls are as simple as possible.*
Cognitive	*Basic*	*We will ensure the use of an easily readable default font size. We will use clear language.*
Vision	*Basic*	*We will ensure the use of an easily readable default font size.*
Hearing	*Basic*	
Speech	*Basic*	*We will ensure that speech input is not required.*
General	*Basic*	*Given the limited development time, additional difficulty levels will not be considered. The game will not be made to be difficult to complete. Further general accessibility will be dependent on the abilities given to us by Coregames.*

GAME REQUIREMENTS
These are the requirements for the game that will become the traceability matrix and will help the team communicate who are working on the game, there is a scoping meeting with the team to determine which requirements will be built and which will be in the next release or iteration of the project. Add a row for each requirement to this table.

| Done (Y/N)	#	Requirement Description	Originator of Req.	Scope (In/Out)
N	1	The player shall be able to interact with the raindrops, thunder, and other collidable objects.	Ray	Out
N	2	The painting will be able to change color based on the player's progress.	Ray	Out

USER CHARACTERISTICS

Users are anyone who interacts with the game in some way. Some examples have been filled in to guide you. Delete or add as needed.

How many?	Title	Description of Characteristics
1-16	Casual players	Some of them are part time (easily distracted by shiny things). These players are able to complete the task given without too much unnecessary difficulty
0-16	Experienced players	They are further along in their understanding of the game. These users are able to try to beat their best time by improving time management and reflexes when avoiding obstacles

USER OBJECTIVES

Title	Description of Objectives	Workflow
Collect raindrops	Players will run into raindrops to increase score	Ian makes assets, Alvin/Maddy implements in engine
Avoid thunder	Players avoid thunder to preserve score.	Ian makes assets, Alvin/Maddy implements in engine

USE CASE DIAGRAM
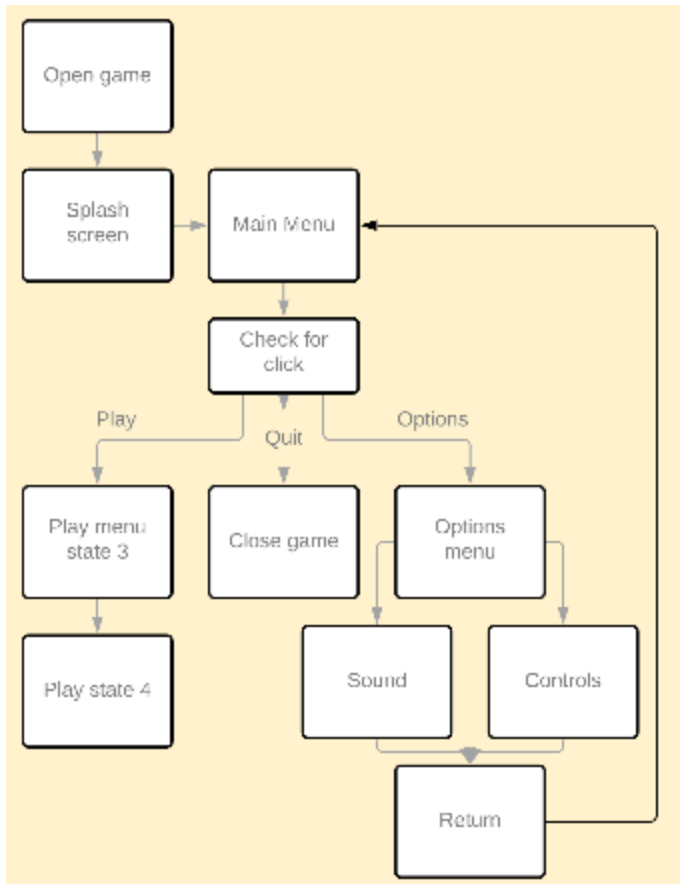
USE CASE NARRATIVE (GAME START)

Copy and paste this section for each of the use cases.

Details of the use case actors	
Use Case Name:	Game Start
Primary Actors:	Player
Secondary Actors:	Watchers

Purpose:
This use case occurs when a player initiates the game
Trigger:
The player or system requires opening the software.
Pre-conditions:
Using PC or Mac platform
Basic Course:
The splash screen appears and the player chooses to play, quit, or look at options
Post-Conditions:
Player enters the state of the game.
Possible Alternate Flows:
Exit out

USE CASE NARRATIVE (MAIN MENU)

Copy and paste this section for each of the use cases.

Details of the use case actors	
Use Case Name:	Main Menu
Primary Actors:	Player
Secondary Actors:	Watchers

Purpose:
Main way for players to interact with the game states.
Trigger:
The player finishing the game start condition
Pre-conditions:
The player finishing the game start condition
Basic Course:
The splash screen appears and the player chooses to play, quit, or look at options
Post-Conditions:
Player enters the state of the game.
Possible Alternate Flows:
Exit out

USE CASE NARRATIVE (GAMES STATE 3)

Copy and paste this section for each of the use cases.

Details of the use case actors	
Use Case Name:	Games State 3
Primary Actors:	Player
Secondary Actors:	Watchers

Purpose:
The main game is contained in this case.
Trigger:
The player entering through the main menu.
Pre-conditions:
Requires the player be at the main menu.
Basic Course:
The player can play the game.
Post-Conditions:
Player goes to the main menu, the player quits, or the player fails the game.
.*Possible Alternate Flows:*
None

USE CASE NARRATIVE (GAMES STATE 4)

Copy and paste this section for each of the use cases.

Details of the use case actors	
Use Case Name:	Games State 4
Primary Actors:	Player
Secondary Actors:	Watchers

Purpose:
This is the game's failure state.
Trigger:
The player failed the game.
Pre-conditions:
Requires the player to fail.
Basic Course:
The player can exit the game, go to the main menu, or restart the game.
Post-Conditions:
Player goes to the main menu, the player quits, or the player starts a new game.
.*Possible Alternate Flows:*
None

USE CASE NARRATIVE (OPTIONS)

Copy and paste this section for each of the use cases.

Details of the use case actors	
Use Case Name:	Options
Primary Actors:	Player
Secondary Actors:	Watchers

Purpose:
Main way for players to interact with the game settings.
Trigger:
The player entering through the main menu.
Pre-conditions:
Requires the player be at the main menu.
Basic Course:
The player can alter various provided settings.
Post-Conditions:
Player goes to the main menu.
.*Possible Alternate Flows:*
None

VISUAL ARCHITECTURE

AESTHETICS

The game is set in McElwain's painting, so we will be making use of her depth and composition. The foreground is an excellent stage for the player character to move around from side to side and up and down because of the actual subject of the painting. For visual indicators, because the moving elements are designed to match as closely to the painting as possible, there will be a slight

glow to indicate to the player what can be interacted with, so as to make it easier to distinguish without losing the impact of the color. For color blind accessibility, The glow indicating objects that can be interacted with will be different in value and texture from the background to prevent any reliance on the color.

COLOR THEORY

In an effort to maintain the vision of McElwain, her palette will be honored in the design of elements the game team adds. Each color is selected to match those present in Desert Rain God so as to match the feeling of majesty with cool deep blues and purples set against the soft warm oranges, yellows, and tans of the desert background. These colors will also serve to make the player character stand out against the background more, as the backdrop will begin as a desaturated brown and beige colors that the little Rain God's blue and purple tones will stand out against. As the contrast is lessened and the painting becomes more vibrant, it will serve to immerse the player more wholly in the world of the painting.

TYPOGRAPHY
The font used for the option, raindrop meter, and instructions will be from the Perpetua family of fonts, or a comparable serif font of equal weight that is available for licensing and within the Coregames engine. Perpetua is usable on Microsoft products for personal computer use. This choice was made because this family of fonts is easily readable, particularly as a serifed font, and it isn't intense enough to distract from the primary focus of the game- the color progression. The backsplash for the raindrops is included to allow for the player to easily locate and then read the raindrop meter, and menus will also be on a backsplash, as the colors of the entire game will shift so much that a simple color difference will not be reliable enough for contrasting text from background. As there are no large blocks of text, rag, widows, and orphans will not be an issue. Additionally, standard kerning will be effective.

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BUTTON MAP



Left- move left
Right- move right

Space- Jump

USER INTERFACE

Simple, Passive interface that is meant more as indicators for the player of how much time, lives, and raindrops they have at any given point during gameplay. Elements that can be interacted with will retain their color and shape throughout the game to keep the player aware of what items they should be looking for.

NAVIGATION HIERARCHY.

Screen [x.1]
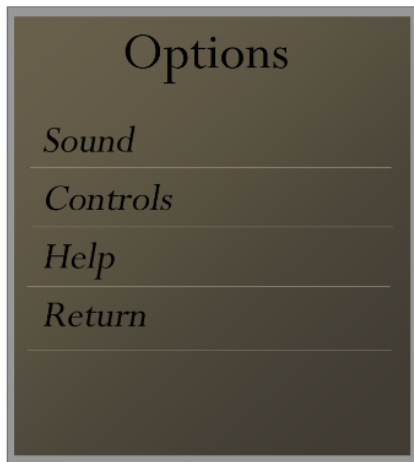
Options menu allows for the player to control various aspects of the game, from Sound, including music, ambient audio, and button sound adjustment, to Controls which can map controls to different keys, Help, which has instructions, and Return that will bring the player back to the game.
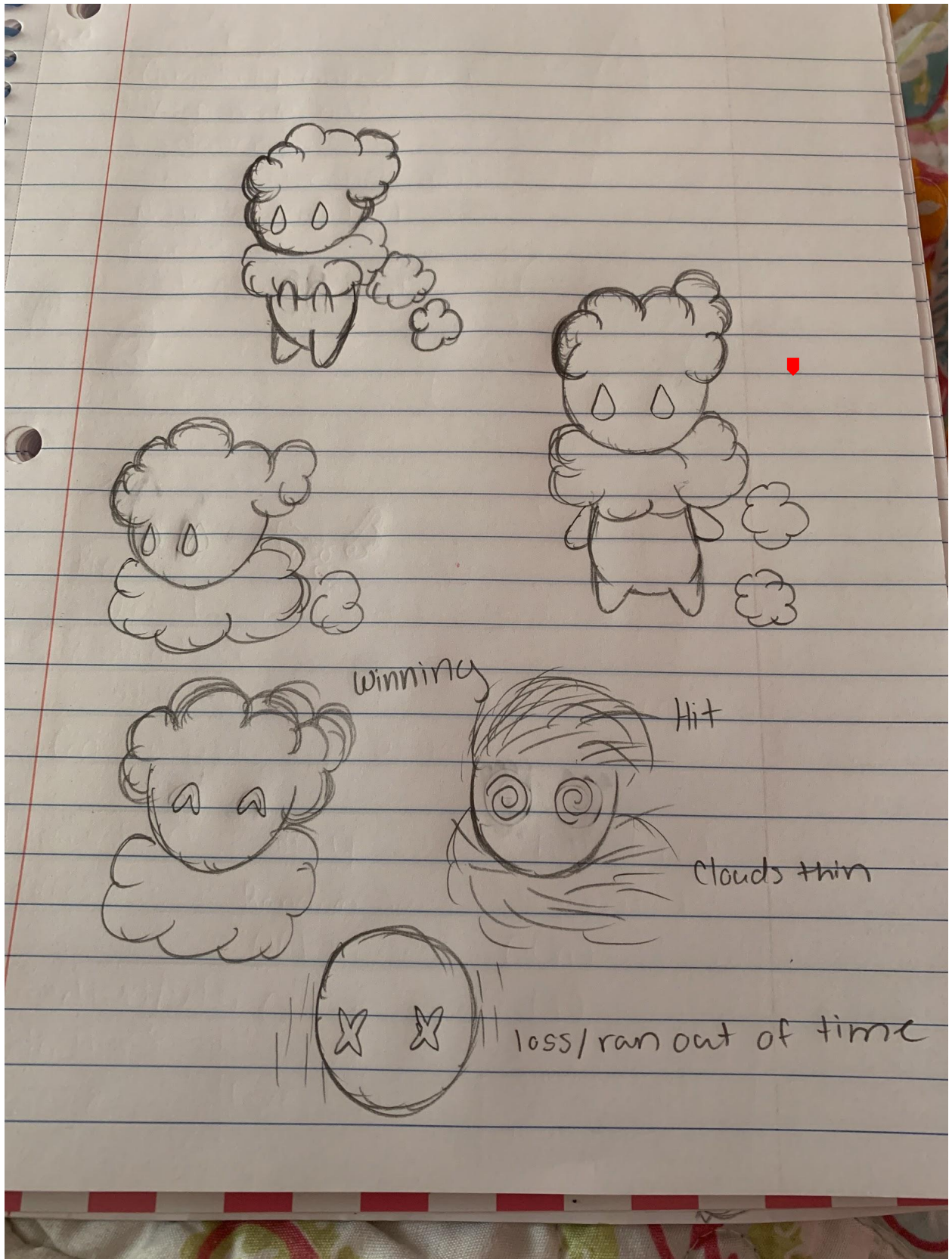
ENVIRONMENT DESIGN

We have provided a rough draft below.

VISUAL CHARACTER DESIGN (LITTLE RAIN GOD)

The Little Rain God will need a walking, jumping, falling, getting up, stun, and hurt animation, with sounds to go with each.

winning

Hit

Clouds thin

loss/ran out of time

Concept Art
SONIC ARCHITECTURE

       Noise from freesound.com can accompany the actions of the avatar when it interacts with its environment. Windows voice recorder are available to capture foley sounds and soundtracks that match the events of game mechanics. Recordings and beats can be organized with Adobe Premiere. When players sit idle too long, a peaceful alternative soundtrack will play.

SOUND EFFECTS: STINGERS
Windy sounds, Thunderclap, Tumbleweed Impact, Collecting Raindrops in a Bucket sound

SOUND EFFECTS: TAGS
Rain on plastic container, Bigger Windy Noises, Shiny sounds for sunshine

MUSIC: INTRO
The Caissons Go Rolling, She'll be Comin' Round the Mountain

MUSIC: LOOP
*Soundtrack of De Colores, Camptown Races, Tox, Oh Susanna!, and Riding on the Range*
Peaceful alternate of The Merry Widow Waltz, Fascination
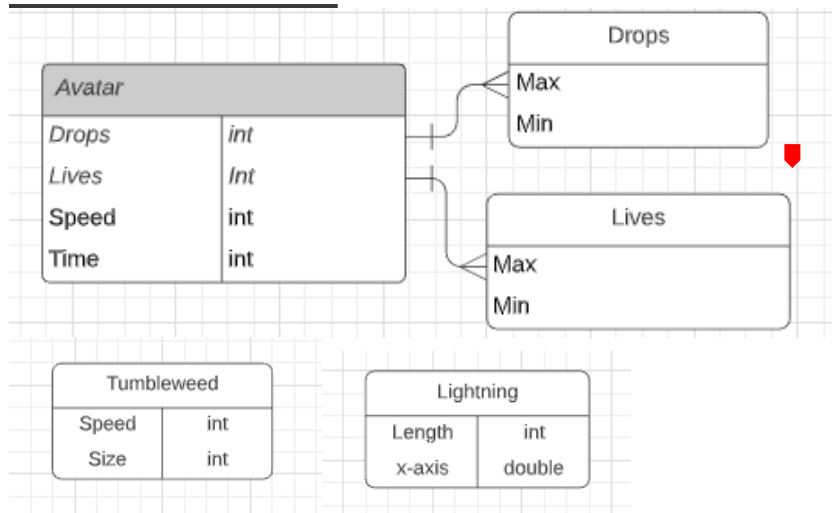## MUSIC: TRANSITION
After a certain number of drops, the first soundtrack plays. After some time of collecting no drops, the peaceful soundtrack comes in.

SOFTWARE GAMEPLAY ARCHITECTURE

The game will be made using CORE launcher, an OOAD that drags and drops objects with attributes.
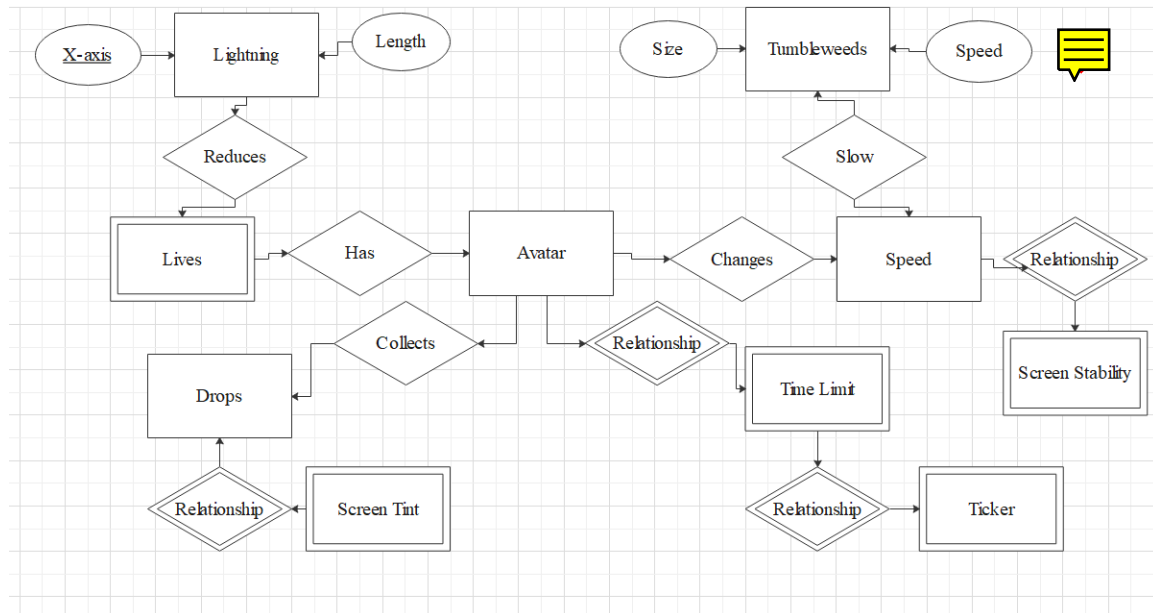
LOGICAL VIEW

DATA VIEW

A relational database that is built in the CORE launcher will be used. This will keep track of numeric values each class uses. The avatar's speed and health is affected by tumbleweeds and lightning that come into contact with its capsule collider. The number of tumbleweeds and lightning strikes is proportional to drops collected as a storm forms. When the game starts, the avatar has a time limit it can collect raindrops.

LOCALIZATION

The game is available to anyone with virtual museum access worldwide. Adaptations with major languages will be included using translation dictionaries. When publishing the game, it will be usable on Mac, PC, and platform renderings available on CORE.

INSTRUMENTATION VIEW

When creating the project, it will run at intervals to make sure it is working as intended with an IDE. Visual Studio can debug automatically and trace sections of code. Asserts, if-statements, and try-catch statements are usable for exception handling. Profiling can be done with trial and error of different input values. When adjusting colors, hybrid and visual lead can be consulted for desired output. Computer logging should reflect when game objects interact with another by experimenting the game and stimulating for the desired response.

SECURITY VIEW

The game does not require security or memory. Each experience is randomized and the game is short enough that save files are not needed. Hexadecimal mac id filtering can limit the use of this software to museum visitors only.