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CART 253 B

Project 2: Proposal
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As the holiday approaches, the project is about all things snow and not letting our snowman sculptures melt away. The simulation will consist ongoing arrays of snowballs and fireballs with a user snowman object. The user's goal is to collect a certain number of snowballs with the snowman while avoiding contact with the falling fireballs. As the snowman collects the snowballs, the snowman's size increases. This simulation comes like all other story and game, there is conflict. The user is left with a time bomb which is the challenge to upkeep the snowman's condition. The more time the snowman is left untouched with falling snowballs, the more it will melt into nothingness. The snowman must also avoid contact with all falling fireballs. Each time the snowman meets a fireball, the user loses but is given the chance to restart. There is a beginning page that introduces the user to the simulation, the simulation page, a winning page once the user successfully collects all snowballs, and a losing page when the snowman melts away.

The beginning page is the first part of the game the user will encounter. It will display the title text, *Keep Mr. Snowman Alive*, author's name, a background illustration, and instructions for the user to follow before the game starts. The written elements will be set as a pixel font, or a font related to a retro arcade aesthetic. The page will also display some original artwork done in Adobe Illustrator set as the background image. The instructions for the user to follow are: *You are destined to save Mr. Snowman from melting away. Collect as many snowballs as you can to keep him cool. If Mr. Snowman touches the fireballs, he melts away!* The user is then instructed to press any key to start the game.
After the user presses any key on the keyboard, the game starts immediately. The simulation page displays the background, which is a winter wonderland image that is an original artwork created in Adobe Photoshop and Illustrator. During the entire simulation, music is played, perhaps a Christmas themed song. It is uploaded using the preload function and corresponds only when the user starts the game, then stops when the user loses.
The game starts with the user being the snowman and the falling snowballs and fireballs. The snowman is constructed with the classic two to three snowballs, a top hat, a carrot, stick arms, a dotted smile, and two eyes. In the drawing process of creating the moving objects such as the falling snowballs and fireballs, and the user object, it will be a challenge to decide whether I want to draw them in a pixel style that leans towards an arcade aesthetic. Considering I have no experience in pixel art, it will be worth the try and experience in this project. My reasoning to draw the objects as pixel art is because I have not drawn any JavaScript objects that replicate a tear drop that looks like a fire emoji or any flame details for that matter; perhaps there are solutions in the p5 references. Concerning this challenge, I have attempted to set the fire object as a regular fire emoji however it is a challenge to have an array of png images set as a JavaScript file and I will most likely require some help if I decide to go for that route. In my creative thinking, I am considering pixel art or some form of original work to create these

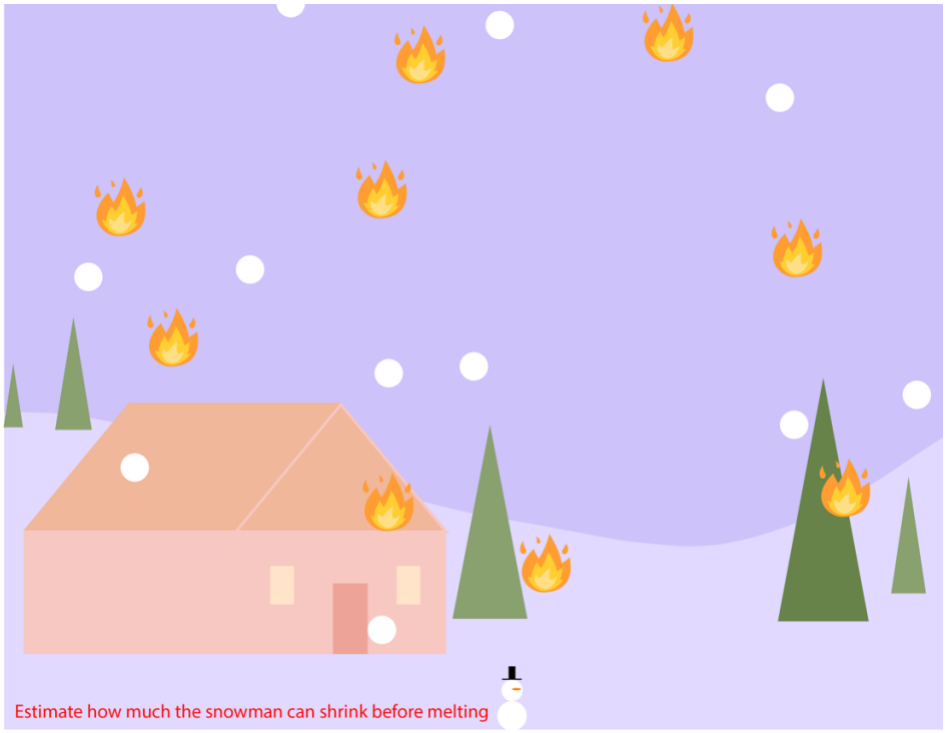
objects to push my creativity and originality in the project. For now, I am starting my prototype with the basic shapes and movements.

In the game, the snowman's movement is controlled by the user pressing the left or right arrow keys. The user is restricted from moving the snowman outside of the canvas, so it is part of the challenge to avoid the falling fireballs while catching the snowballs. The falling snowballs and fireballs are set as their own JavaScript files, which is inspired by the Inheritance material shown in the course. The fireballs and snowballs are set as an array of objects falling at random sections of the x axis while falling on the y axis since they are falling based on gravity.
Before the snowballs fall to the ground, the user moves the snowman and overlaps a falling snowball. Once it is overlapped, the snowball disappears and collected which makes the snowman's size increase overtime as all snowballs are once collected. A text on the right corner on the top of the screen is displayed to indicate how many *Snowballs Collected*. Once all snowballs are collected, depending how many I decide to put in the array, the winning page is displayed. The winning page displays a background image with an illustration of the snowman wearing sunglasses indicating he is *cool*, with text next to it stating: *You have kept the snowman cool!* After winning, the user has the option to restart the game and continue saving Mr. Snowman.
Depending on the creative process and changes, it is possible the growth rate of the snowman may be another obstacle to get past. It may be easier for the falling fireballs to come in close contact with the snowman since its increased size will create a crowded space to finesse the fireballs.
In the case of either not touching any of the snowballs or touching a fireball, the losing page displays, and the user is given another chance to play again. The losing page has a background, which is not as bright and jolly as the beginning and simulation pages to represent sadness that Mr. Snowman melted away. In the page, the text: *RIP Mr. Snowman* is depicted next to an illustration that represents Mr. Snowman's passing; it could be a melting snowman, a puddle, or a puddle in front of a tomb stone? When the snowman does not overlap a falling snowball, its size decreases overtime and eventually melts away, which is the act of a timer and an influencer to keep the user challenged. If the snowman touches any of the fire balls, the snowman melts away completely and the user must restart the game. Concerning the shrink and grow behavior of the snowman whether it touches a snowball, fireball, or melts away, it will be a challenge to manipulate the size smoothly. Especially when it shrinks slowly when it is not touching a snowball; slow enough to make the user get a chance to maneuver the snowman before it melts too quickly.

The overall game Keep Mr. Snowman Alive consists of falling snowballs, fireballs, and a snowman in a winter wonderland. The user plays the part of the snowman using the left and right arrow keys to move along the x axis on the bottom of the canvas. The goal for the user is to catch and collect all falling snowballs before they hit the ground. The user snowman must avoid touching the falling fireballs as they will melt and kill Mr. Snowman and having to restart the game. If the snowman does not get enough contact with the snowballs or touches a fireball, its size decreases and the losing page displays. If the user successfully collects all snowballs, the winning page displays, and everyone is happy.


Beginning size of snowman


Estimate how much the snowman can grow


Estimate how much the snowman can shrink before melting