Overview

This project proposal is for a simple, fast-paced action-puzzle game. The objective is to fire colored marbles onto a target area. If the marble lands in a position where it is in contact with two other marbles of the same color, then all three of those marbles turn to bubbles and float away. The space vacated by those now missing marbles will be filled with any marbles higher up in the pile. If any repositioning marbles create a chain of like-colored marbles of three or more, then those also turn to bubbles and float away. Points are awarded for each marble that turns into a bubble.

Each level of the game has a certain number of marbles that must be fired into the target area. If the player fails to get a hit with a marble that results in marbles turning to bubbles, then the floor of the target area rises and pushes all of the marbles up one row. If the floor rises far enough that the marbles hit the top of the target area then the game is over. If the player has successfully fired all of the marbles for the level without the marbles being pushed to the top, then they advance to the next level.

There is a time limit for the player to fire each marble. An hourglass and a number will display above the cat's head, with the time remaining to fire the current marble, as seen in Diagram 1. If the player does not fire the marble before the timer reaches zero, the marble is automatically fired from whatever position it currently is in.

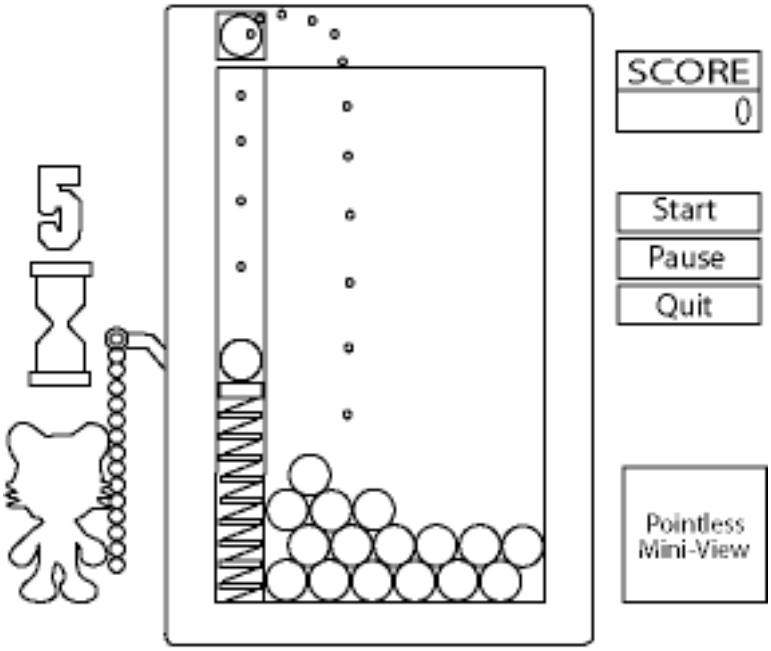

Diagram 1: Interface layout

The Hero

The hero of the game is a small, animated cat. He will be built from primitive objects and texture mapped. The textures will include alpha channel maps, in order to display only

those portions of the primitives important to the characters' detail. He will have two different models: one will be for when he is facing the player, and the other is for when he is pulling the lever down to fire a marble.

The red circles in the following diagram depict the primary pivot points for animation, as well as the primitives that will be used to construct the character for both positions.

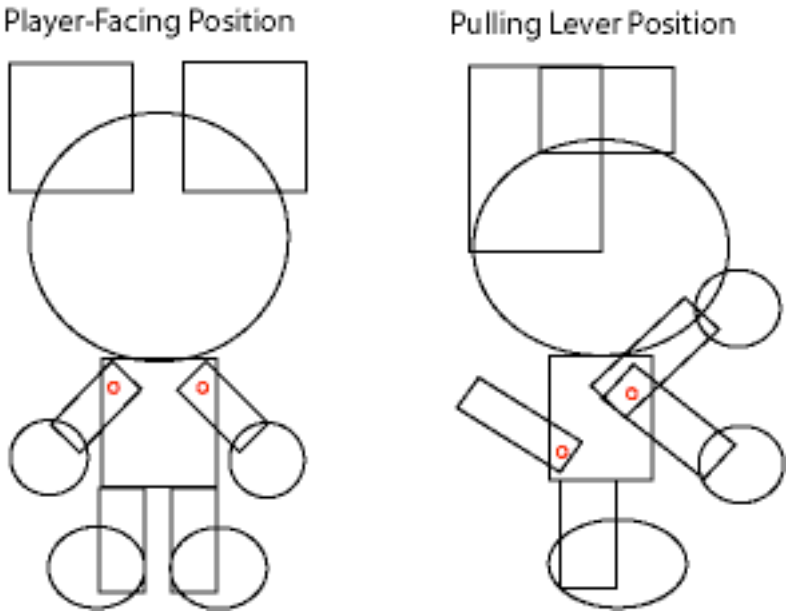

Diagram 2: Hero character models

Hero Interaction

The player will use the down arrow key while playing a level, to make the Hero grab the chain connected to the lever, and pull it downward. The player can only make the hero pull downward, and cannot make adjustments to the position in the opposite direction. This makes the game more fast-passed and requires timing and precision. The lever will only go down far enough to send a marble to the farthest column of the target area. Lever-pulling animation of the hero continues until either the user releases the down arrow key, the lever cannot be pulled downward any further, or time runs out and the marble is automatically fired. While the cat is not being directed to pull the lever, he will be facing forward, and cheering on the player, as marbles turn into bubbles.

The Lever

The lever will be the primary supporting object for the hero. It will be composed of texture-mapped primitives, including circles for the chain, and boxes for the actual lever. As the hero pulls on the chain, the entire lever mechanism will move downward. This will also bring the spring of the marble firing mechanism down and into a higher-powered firing position.

The View/Controllers

There will primarily be one main world view for user interaction and game play. However, to meet the requirements of providing multiple views to the user to interact with, there will be a smaller "mini-view" area.

The game world setting will be underwater, so fish will be seen swimming back and forth in the background. The smaller view will display a wider view than the main view, and therefore these swimming fish will be seen as they approach the players' main view. Depending on time constraints, this smaller view might also be used for advanced warning for incoming bonus items or antagonists. At the very least, it will allow the player to scroll around the mini-view game world, and zoom in and out. However, because of the fast-paced nature of the game, there really will be little to no reason for this feature from a game-play standpoint.