Bubble Trouble

**Description:**

My project for 15-112 includes implementation of ‘Bubble Trouble’ game (Source: <https://www.miniclip.com/games/bubble-trouble/en/>). The game involves a player which has a gun that shoots arrows. Bubbles are respawned at the start of the level, and the bubble moves in projectile mention striking the wall and the surface platform. Arrows will be used to pop bubbles and the level will finish when all the bubbles are popped up. Each level starts with certain amount of bubbles, and upon shooting, these bubbles break down into smaller bubbles. The goal is to avoid colliding with the bubbles, and to break down and finish all the bubbles on the screen by shooting. The levels progress as the user complete the current level. Attached below is a simple GUI screen of the game.

A close up of a sign

Description automatically generatedA picture containing sky, orange

Description automatically generated

**Libraries to be used:**

* Pygame
* Pymunk
* Random
* Sys

**Description of User Interface:**The GUI will include a player (or 2 players) with bubbles at the top (amount of bubbles may vary according to the level). The bubbles will move in projectile motion and will use features like gravity, momentum to move around. Shooting of the arrow, player movement etc will be some of the GUI features.The bottom of the screen will show current score, lives left, the current level #, and a bar to show progress with the current level. The GUI will also include implementation of 2 player in the game. The status bar screen will also show a ‘Quit’ button and a ‘Sound’ on/off button. The GUI will also detect when bubbles hit the player and show the appropriate screen and sound.

**1st Milestone:**

1. Implementation of a basic GUI screen (showing platform, task bar etc)
2. Making the player able to move around
   1. The player moves left and right on a platform.
3. Working on physics of the bubble
   1. The bubble involves projectile motion. It will also involve momentum and elastic collision with the wall which will allow it to move infinite times and at a constant distance/height.
   2. The bubble also involves splitting into 2 equal halves which will also include physics.
   3. Generating the ball at a random location.
4. Implementation of basic task bar features (Current score, Highest Score, Timer, lives left)

**2nd Milestone:**

1. Shooting of arrows by the player
2. Detection between arrow and the bubble. This action will also include splitting of bubbles into 2 halves.
3. Detection of collision of a bubble with a player. This will result in loss of 1 life, and end of level if all lives are lost.
4. Implementation of 2 player game.
5. Implementation of main menu screen (showing controls, 1 vs 2 player etc)