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Project 2 Proposal

Game idea

The user is a frog that eats bugs. The goal is to capture enough bugs to complete a level before the timer runs out. If the frog does not catch enough bugs, it loses one out of its five lives.

The user controls the frog's movement using arrow keys. It has some attack moves that are controlled with the mouse:

- When the user **clicks** on the screen, the frog reveals a gargantuan tongue that slaps down in the direction it is facing (this direction is based on the last right or left arrow key that was pressed) (Figure 1). If the bug is under the tongue, it will get squashed.

- When the user **right-clicks**, the frog spits out circle-shaped saliva drops (Figure 2). Bugs that come into contact with the saliva drops will melt into shriveled dots, which the frog can then consume easily by walking over it.

- After the frog has ingested a certain number of bugs, it has the ability to turn around and projectile a ton of bugs from its behind (Figure 3). This action is initiated by clicking an "Activate Secret Skill" button.

A sound effect is played each time the frog performs an attack move and ingests a bug.

The bugs are free-flying/free-moving and placed at random positions. They have varying speeds but get faster as the levels increase. In the lower levels, the frog only deals with flies. In higher levels, I plan on introducing other prey like caterpillars, butterflies, and maybe mice (ew, I know).

Drawings of frog created so far:
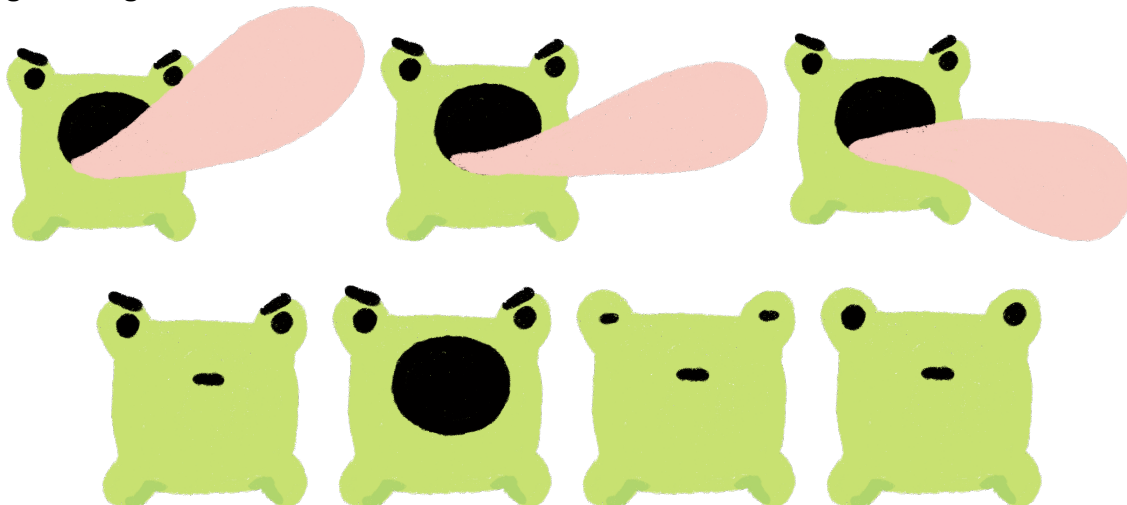
Figures to illustrate possible attack moves:
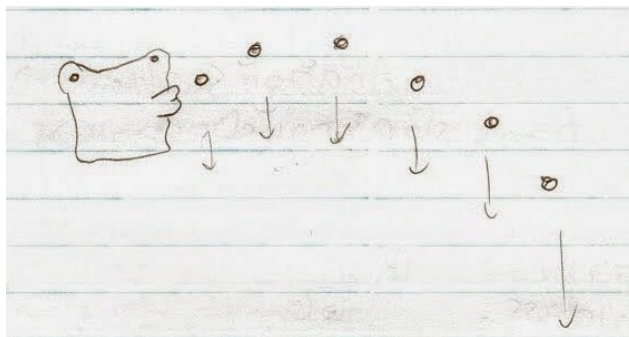

Figure 1: Frog's tongue slamming down

Figure 2: Frog spits out saliva drops

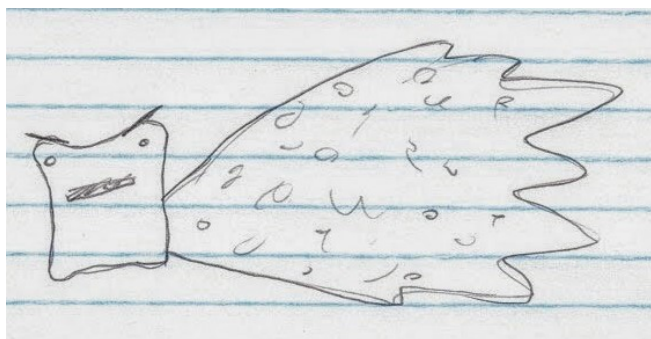*Figure 3: Frog releases bugs from its behind (secret skill)*

The game consists of six states: introduction, backstory, rules, animation, failure, and victory.

introduction state: I will display a bold title for the game, a background visual (might incorporate small interactive elements but not confirmed yet), as well as a start button. When the user clicks on "Start," the game switches to the backstory state.

backstory state: Using visual "pages" that take up the full canvas, I will explain the backstory of the frog to provide context for why it is hunting down the bugs. I have not developed the story yet. For the most part, the visual page will contain static elements, but some small elements will be animated and the user will be able to interact with those (e.g. there will be free-flowing elements like smoke and when the user moves the mouse over it, the smoke will move). The user will click on the screen or an arrow button to continue to the next page. There will also be a button to skip the backstory and jump right into the rules state.

rules state: The screen will display the possible actions that the user can do. A huge "Start" button is displayed on the right bottom corner of the screen, and once clicked, it will bring the user to the animation state.

animation state: This is where the game idea I described takes place. On the top left corner, the hearts indicated the number of lives. On the top right, a counter is displayed and counts down to zero.
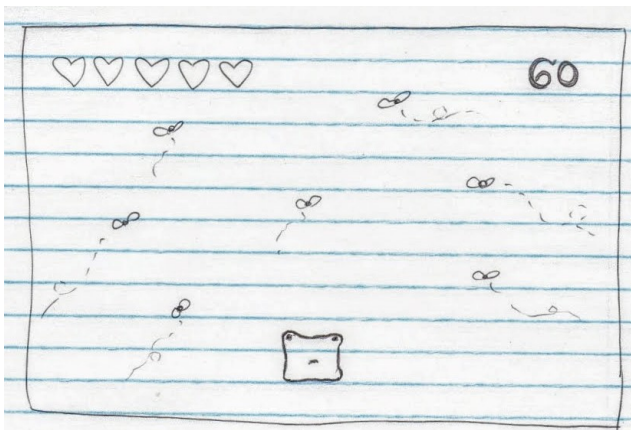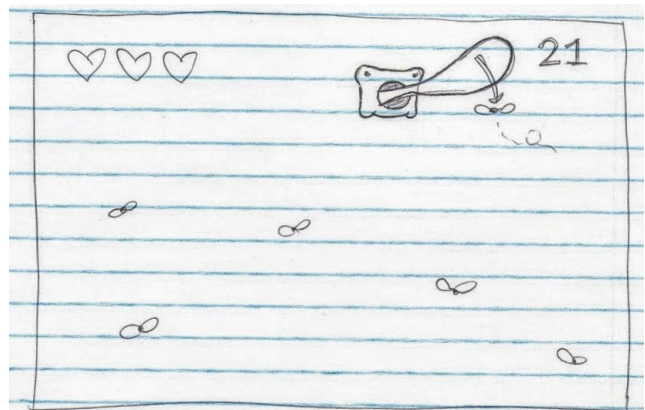

Figure 4: Frog is idle at its starting position

Figure 5: Frog is slapping down a fly

failure state: If the frog loses all five of its lives, it sadly retires from catching bugs. A text will be displayed on the screen with a drawing in the background of a disappointed frog.

victory state: If the frog completes all the levels, it becomes the ruler of the animal kingdom. A text will be displayed on the screen with a drawing in the background of a frog king and all bugs bowing down to it.

Design challenges

Since I will be working with animated sprites, I will have to think about how to make sprites of different sizes work together and interact with other objects in the game such as the prey. For instance, when the frog reveals its tongue, the size of the image will change, and I will need to find a way to check if the tongue overlaps with the bug. I haven't decided yet whether it is simpler for the tongue to be part of the frog's image, or if it should be an entirely different image connected to the frog's position. There will also be a lot of instances where I need to count the frames for switching between animations, so I will need to find a way to organize these frame counts and categorize them under different names.

For the spitball that the frog releases, I will have to figure out how to implement projectile motion in code. The next challenge will be to keep track of all the different kinds of prey, and ensure that the player actually feels a sense of progression through each level.

I have yet to come up with an idea for the background of the animation. I think it would be interesting for it to take place in a magical forest. In that case, the background will feature trees, grass, and flowers, and the challenge for me will be to simulate their movement from the wind. There might also be several pairs of eyes popping up randomly in the background to glimpse at how the frog is doing.

The final challenge is working with sound effects. In my previous exercises, I haven't practiced adding sound effects that play as a result to a user action, so this will be a new area of exploration.

Gathering assets

I plan on sketching the objects in the game by hand. I will keep the style minimal to prevent from spending too much time on the drawings. I will find the sound effects from royalty-free websites, or create sounds in sound-creation editors.