DESCRIPTION

Highway Frogger is a game developed based on the original game, Frogger. A user must control a frog sprite using four directional keys: UP, RIGHT, DOWN, and LEFT. The user must guide the frog through two main obstacles, which are the highway and the river. There are cars on the highway that move either left or right at varying, random velocities. Making contact between the frog and the car causes the user to lose a life and start over at the beginning or at a checkpoint. The river consists of two different objects: logs and lilypads. Both objects, when stood on by the frog, move the frog at the same rate as the objects themselves. Lilypads constantly change from safe to unsafe terrain. If the frog makes contact with water, the frog loses a life and moves to the beginning or a checkpoint. The frog must land on one of the golden platforms at the top of the map that contains a fly in order to obtain that fly. Once a fly is obtained, the background flashes red tint and the velocity of the cars increase. The checkpoint becomes the position where the fly was obtained. Users cannot have more than one fly. Nothing happens when the user attempts to pick up another fly. The user must go back to the bottom of the map and return the fly to the basket in order to get points. Once the user does so, the red tint flashing stops and cars return to normal velocity. If the user manages to return all flies to the basket, the game ends. If the user loses all lives, the game ends.

The game is coded using HTML5 Canvas and Javascript. All sprites used in the game as well as the background were created by myself using Piskel, Gimp, and MS Paint.

OBJECTIVE

The user must get the bug across obstacles and bring it to the basket.

SCORING

If the user is not holding a bug, the user gains 10 points for moving upward and loses 10 points for moving downward. If the user is holding a bug, the user gains 10 points for moving downward and loses 10 points for moving upward. If the user returns the bug to the basket, the user gains 1000 points. Points are maintained throughout deaths.

OBJECT INTERACTIONS

Frog vs. Death: When the frog dies, it loses a life and goes back to the beginning if it is not holding a bug. If the frog is holding a bug upon death, it goes to the last checkpoint where it obtained the bug.

Frog vs. Bug: When the frog gets the bug, car velocity increases and the background begins animation.

Frog vs. Lilypad/Log: When the frog is on the lilypad or log, it moves at the same speed and velocity as the lilypad or log.

Frog vs. Borders: When the frog moves out of the frame on the left or right of the game, it dies.

Frog vs. Terrain: When the frog lands on the green or blue area, it dies.

Frog vs. Car: When a car hits the frog, the frog dies.

Frog vs. Bowl: When the frog is holding a bug and it stands on the bowl, the background animation stops and the cars go back to normal velocity. If the frog is not holding a bug, there is no interaction with the bowl.

ANIMATIONS

Frog: Jumping animation when moving, direction change frames, blinking animation, death animation.

Lilypad: Moving animation, sinking animation – causes lilypads to be unsafe terrain.

Log: Moving animation

Cars: Moving animation

Background: Flashing red tint animation when bug is obtained.

GAME INSTRUCTIONS

Controls:

UP Arrow Key – Move frog up 32 pixels.

RIGHT Arrow Key – Move frog right 32 pixels.

DOWN Arrow Key – Move frog down 32 pixels.

LEFT Arrow Key – Move frog left 32 pixels.

Use the arrow keys to navigate the frog through the map to retrieve the bug and bring it to the basket. Avoid cars and moving off the left or right side of the map. Also avoid water and green terrain.

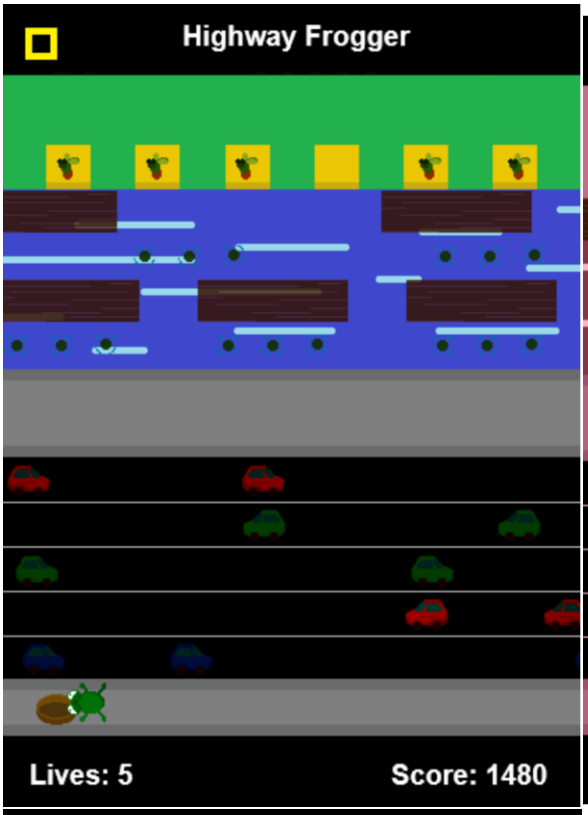
SCREENSHOTS

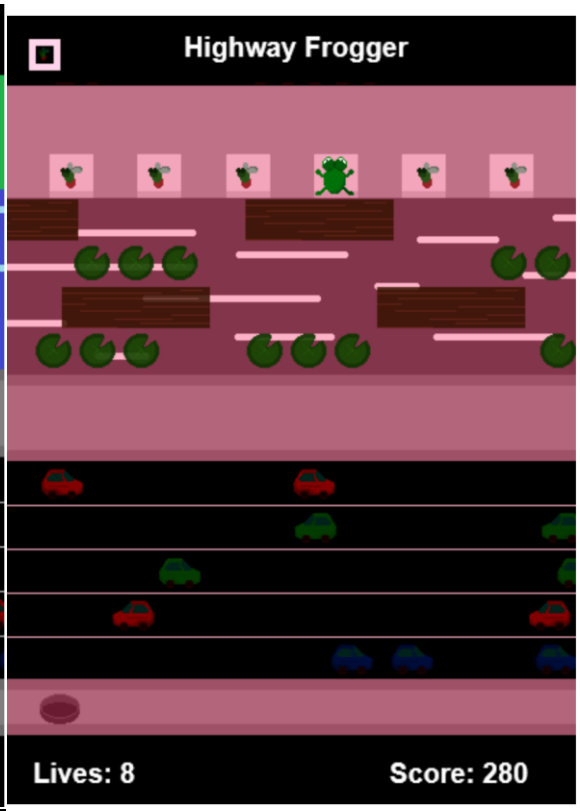
TOP-LEFT: Demonstration of basket interaction while holding a bug. Red tint animation stops and cars go back to normal speed.

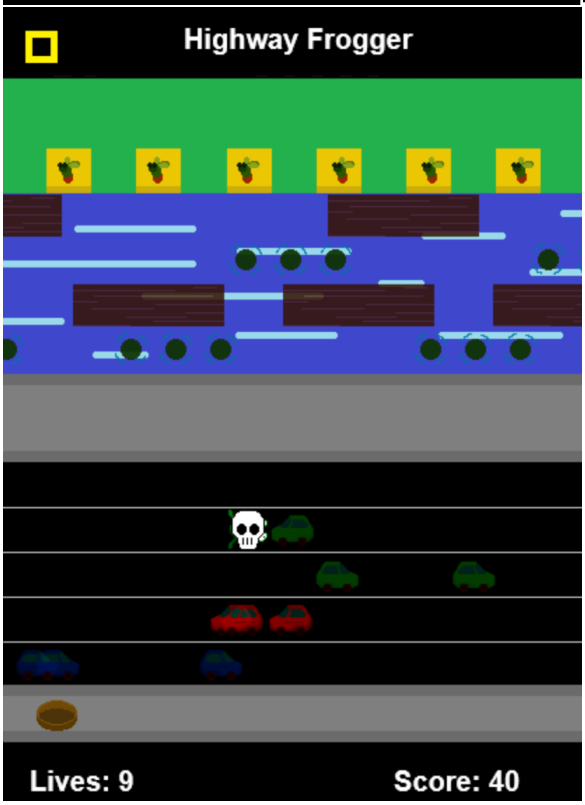
TOP-RIGHT: Demonstration of bug interaction when user is not currently holding a bug. Red tint animation begins and cars increase velocity.

BOTTOM-LEFT: Car collision interaction.

BOTTOM-RIGHT: Lilypad interaction. Lilypad sinks into the water and becomes unsafe terrain. The series of screenshots illustrate the sinking animation followed by the death of the frog due to unsafe terrain. Also illustrates Frog vs. Lilypad interaction in terms of movement. Frog moves with lilypad when standing on lilypad (same interaction with logs).


Highway Frogger
Lives: 5
Score: 1480


Highway Frogger
Lives: 8
Score: 280


Highway Frogger
Lives: 9
Score: 40