README

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Game Name: Tap-Tap-Bug

A JavaScript & Canvas Game

Rules:

There are 5 pieces of food on the table. Once the game starts, every 1 to 3 seconds, one new bug enters the game from the top side of the viewport at a random X coordinate. Bugs walk directly towards the closest food on the table. The first bug that reaches a food immediately eats the food, and the bugs walking towards the eaten food will walk towards their next nearest food.

This game is a time-based game, and each play takes 60 seconds. The game ends when either the time is up or when the bugs have eaten all the food. There are three types of bugs in this game: black, red, and orange. Black bugs are the fastest and the orange bugs are the slowest. Accordingly, the fastest the bug, the higher the kill score. Your should keep and store the scores for the player.

Challenges:

No formidable challenges.

Implementation:

- First Page includes:
    - Level selection for the game (Implemented as radio selection in a form)
    - A start button which take you right into the game
    - Text field showing the current high score.

    When user click Start, JavaScript will check the validity of input and redirect itself to game page.

- Game Page includes:
    - A scoreboard at top, showing the time left, current score and a Pause/Continue button
    - 2 separate loops running in the background:
        - one for spawning bugs in between every 1-3 seconds.(Implemented with setTimeout() feature in JavaScript)
        - another loop responsible for drawing the whole canvas 60 frames per second. In the meantime, we examine the food count and time, if either goes to 0, we call GameOver()

- A event listener keeps track of wherever user click on the screen, if user click Pause/Continue, we cancel/request animation accordingly, if there is a bug within 30px radius of clicked coordinate, we make the bug fade out by changing the opacity of bug gradually in 2sec.
- 2 arrays to store the current showing bugs and food. And remove it whenever
- For animations, everytime we update the coordinates of bugs, we calculate how much distance it travels and based on distance, choose the closest food to chase after, than update the coordinates.'
- When ever the game end, we redraw the whole canvas to a Game Over page which allows user to choose from 2 actions: restart the game with current settings or exit to main menu.