

# **SNAKE GAME**

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# PROJECT OUTLINE

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- The Snake Game built using Arduino, P5, and Tone.js! In this project, we have combined hardware and software elements to create a classic snake game that you can play on your computer screen while controlling the snake using an Arduino board and interacting with the game's audio using Tone.js.
- This documentation will provide you with a description of the project, along with images, a video example, and relevant diagrams to help you understand the work. We will also share our thoughts about future development possibilities for this project.

# DESCRIPTION

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- The Snake Game is a popular arcade game where the player controls a snake that moves around the screen, eating food and growing longer with each successful eat and avoiding obstacles and/or passing through with in 5 free pass. The game ends if the snake collides with the walls, its own body and obstacles. You control snake using 4 button Arduino(left, right, up and down) and use shift key on your keyboard to use free pass to avoid hitting obstacles and Tone.js to provide background music.

# Hardware and Software Components

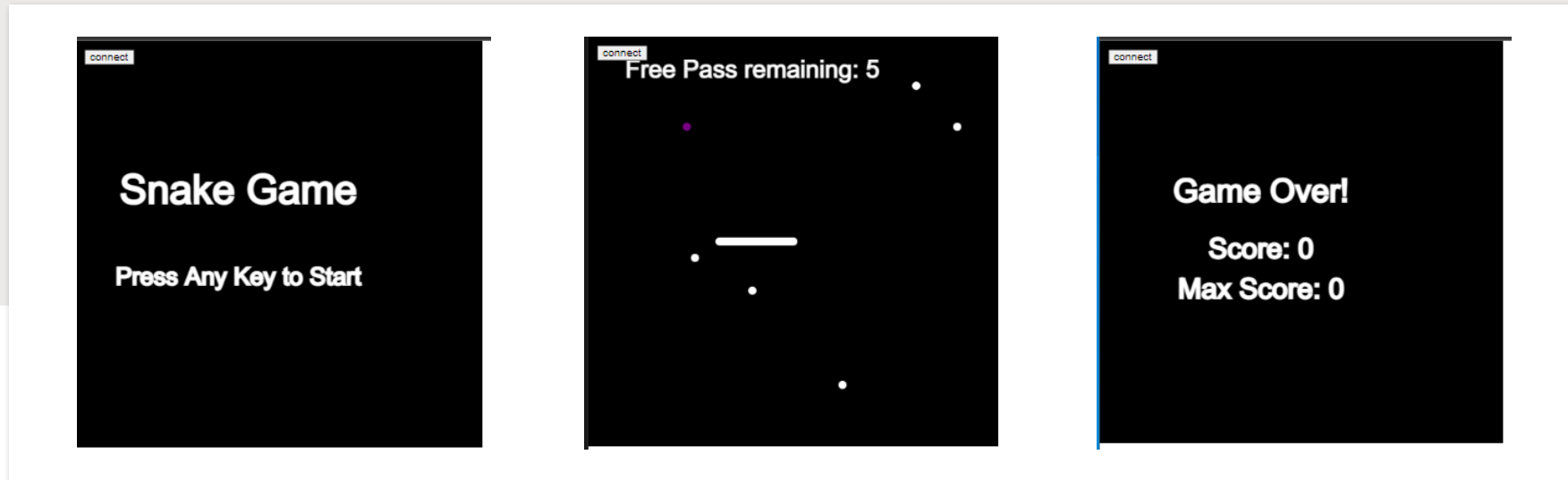
- **Hardware Components**

1. Arduino board (e.g., Arduino Uno)
2. Breadboard
3. Jumper wires
4. USB cable for Arduino
5. Potentiometer (optional, for controlling game difficulty)
6. Speaker or headphones (for audio output)

- **Software Components**

1. Arduino IDE: Used for programming the Arduino board.
2. P5.js: A JavaScript library for creating interactive graphics in the browser.
3. Tone.js: A Web Audio framework for creating interactive music and sound.

# Game play Images



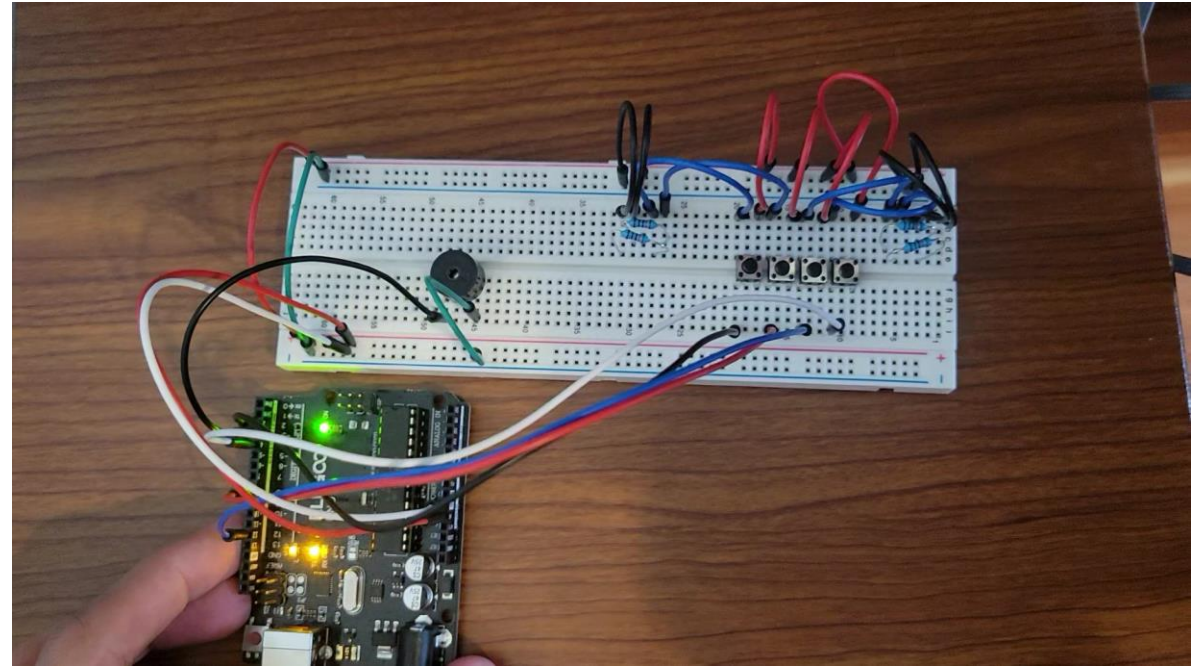
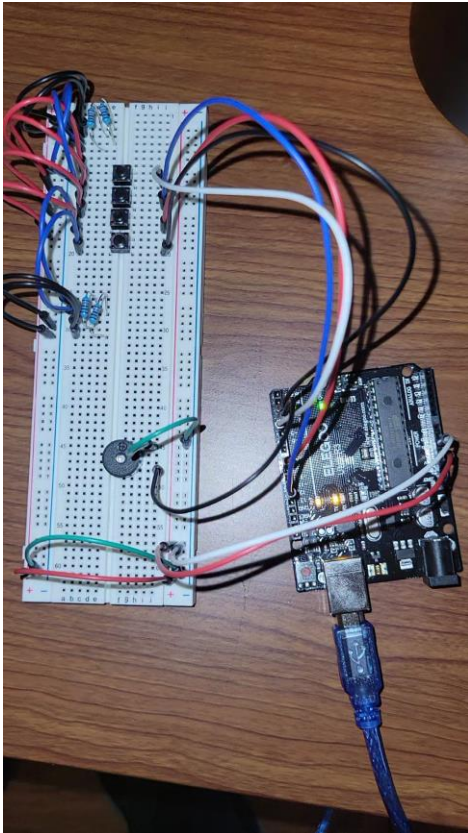
- Link to play snake game online:

[https://apatel19-stack.github.io/CSC2463/2463\\_Final\\_project/index.html](https://apatel19-stack.github.io/CSC2463/2463_Final_project/index.html)



# Arduino setup images

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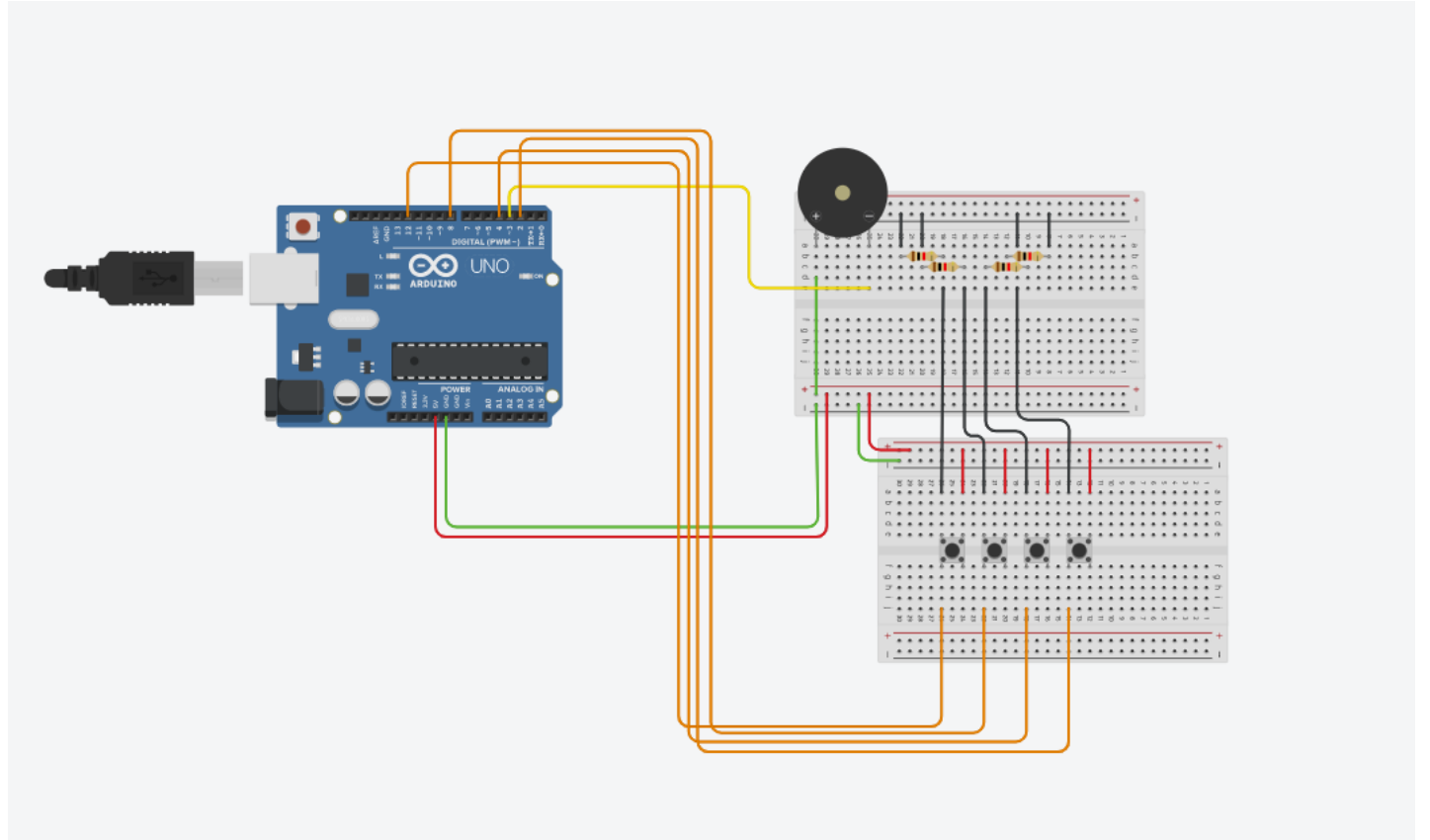


# Video



- Link: [https://youtu.be/hYR\\_HB24Qjg](https://youtu.be/hYR_HB24Qjg)

# Circuit For Arduino





# Future Development

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- Add levels which will has obstacle wall inside the canvas
- Improve music quality
- Improve snake graphics and add motion graphic in background

