Group 62
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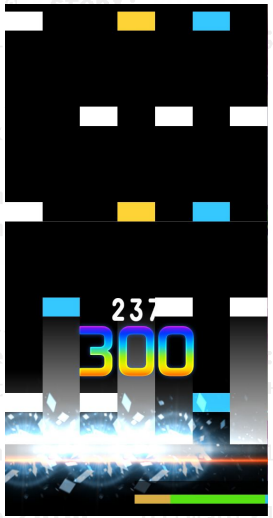
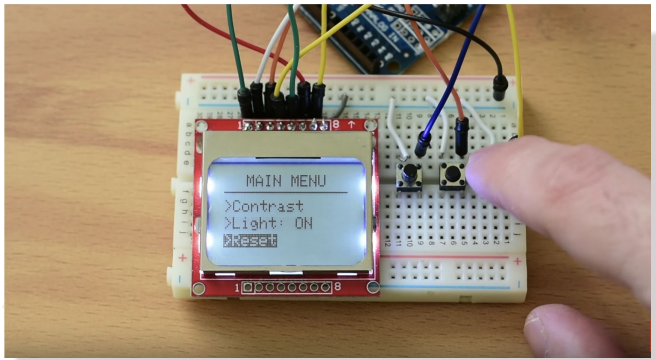
Project name: VSRG-UNO-R3

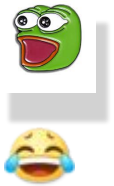
Abstract

This project introduces an original Arduino/C++ endeavor aimed at enhancing the gaming experience through innovative hardware and software integration. Utilizing Arduino microcontrollers and a photoresistor array, it offers physical interaction with rhythm games, synchronizing gameplay with real-time data processing. The system manages communication between components and supports customization preferences. Through this project, users can enjoy an immersive and customizable VSRG experience, demonstrating creativity and innovation in Arduino/C++ technology.

VSRG-UNO-R3: Rhythm Game Autoplayer w/ Stats Display







Design Presentation

04/15/24

Ryan N Magdaleno & John E See

Project Idea

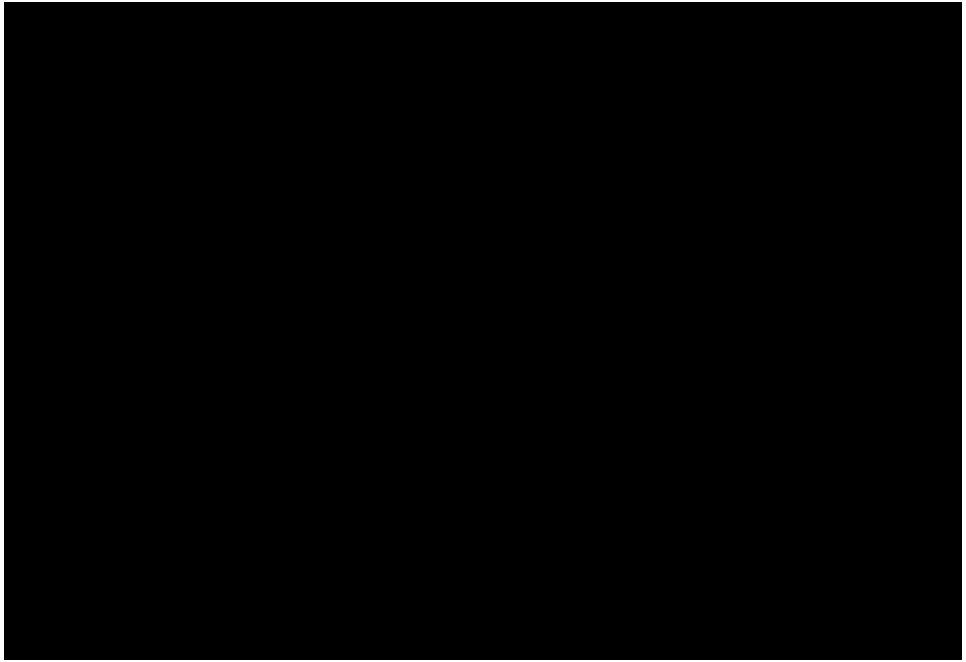
Target game: osu!mania

KPS: Keys per second
KS : Key strokes
AP : Autoplayer

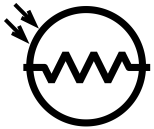
- Computer side program
- Photoresistors
- LCD displays
- swag…

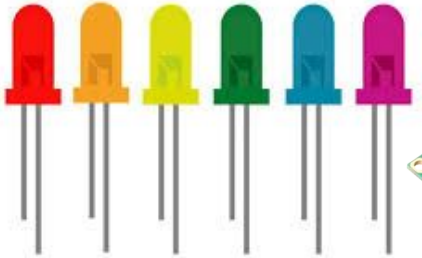
Originality

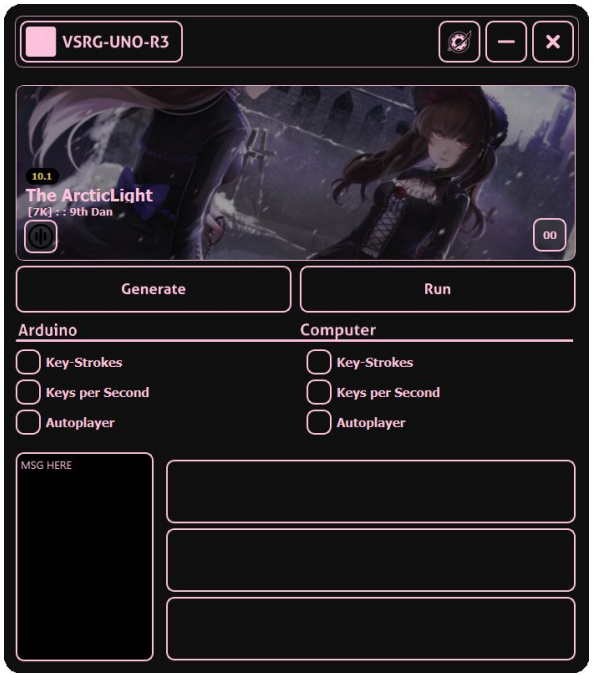
- Custom GUI program.
- Arduinos receive/send real time o!m data.
- Targets a niche weeb rhythm game.



Project Design: I/O Devices Used







System

KPS/KS calculations…
GUI…
Computer Program

USB Serial
>>>

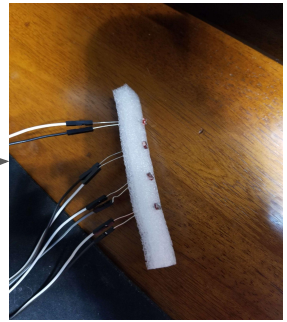
USB Serial
>>>

Arduino 1
(AP)

I2C wire connection

Arduino 2
(KPS / KS)

x4 - x7

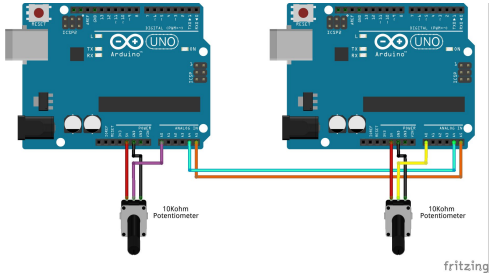


Project Design - Communication Used

There are two parts to the communication side:

I2C or RX/TX : : (in prog)

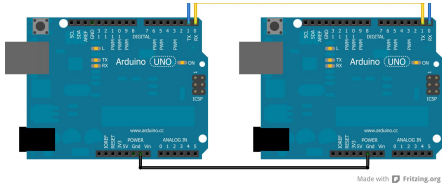
1. I2C from AP to KPS/KS
2. Or RX/TX…



I2C - new stuff

USB Serial : :

3. We're doing USB Serial to and from the computer program to each Arduino.



RX/TX - what we did in class

What worked

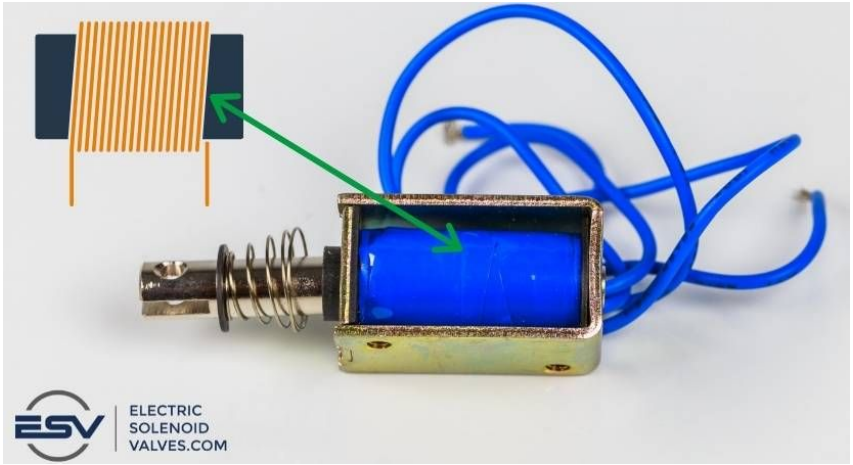
A lot of things worked…

- The custom Qt6 GUI + logic
- I2C communication (hopefully)
- Autoplayer (AP)
- KS/KPS

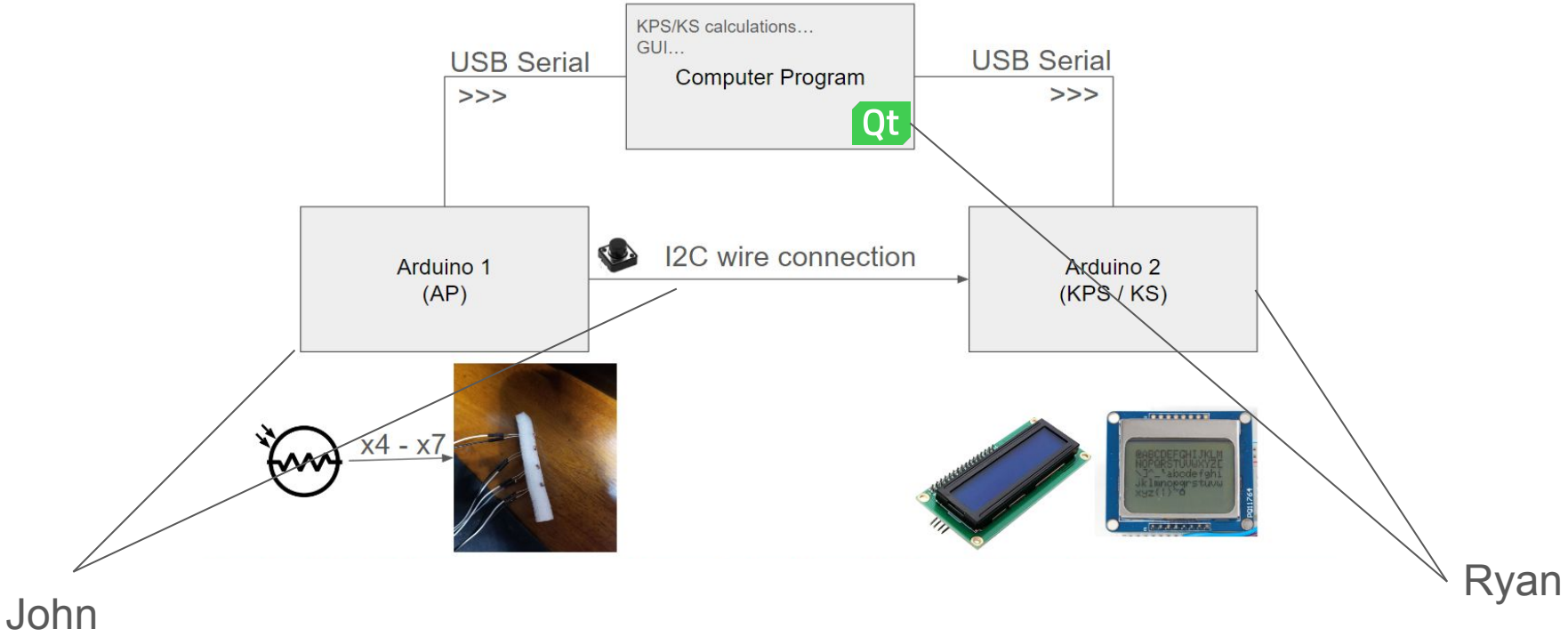
Challenges (what caused problems)

There were some challenges…

1. Burns due to the wrong transistor model.
2. Financial struggles ($150).
3. Arduino UNO R3 voltage regulator getting fried.



Team related roles



Conclusion

Thanks for Listening.