

Rate that Tune

Eugene Nagy
Kaya Tolga

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Abstract

This project has four buttons, a buzzer, and two LED's. Two of the button each play a different musical sample when pressed while the other two buttons allow the user to rate which song was more enjoyable which is indicated using LED's. That data is then collected to determine which sample is more popular.

Methods and Materials

Materials Used:

- Arduino Uno board
- Breadboard
- LEDs, wires, buzzer, buttons

Conclusions

During the development of this project I learned a lot about the design and development process. I also learned how to adapt when uncontrollable circumstances deem it necessary and how to work under great pressure and strict deadlines.

Code

The code starts off by identifying the arduino board as well as which port it is connected to. The code then goes into a while loop which is set to while true so it runs indefinitely. The code then reads the voltage from digital pin D2 which the first button is connected to. If the voltage is greater than zero, as it is when the button is pressed, the first song will be played through the buzzer. The code then checks to see if the voltage from digital pin D4 is greater than zero and if it is plays the second song. The user is then determines which song was better as indicated by LED's. This data is then collected for later analysis.

```
clear;
a = arduino("COM3", "Uno");

while true
    x = readDigitalPin(a, "D2");
    if x > 0
        tune = 'eaeaeaeafaeaeaeafaeaeae';
        beats = [1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1];
        notes = {'a', 'd', 'e', 'f', 'g' ' '};
        freqs = [262 294 330 349 392 0];

        for ii = 1:length(tune)
            playTone(a, "D3", freqs(strcmp(tune(ii), notes)), 0.2*beats(ii))
            pause(0.2*beats(ii))
        end
    end

    y = readDigitalPin(a, "D4");
    if y > 0
        tune = 'efefefefdeefdeefefefefdeefde';
        beats = [1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1];
        notes = {'a', 'd', 'e', 'f', 'g' ' '};
        freqs = [262 294 330 349 392 0];

        for ii = 1:length(tune)
            playTone(a, "D3", freqs(strcmp(tune(ii), notes)), 0.2*beats(ii))
            pause(0.2*beats(ii))
        end
    end
end
```

Pictured above: The code in an unfinished state

Pictured below: two images of the circuit while in development

