DES-634

Assignment -1

Group 2

Description:
The project contains a simple shooter game built using pygame and incorporated with Arduino through pyserial library. The code of the game has been written in Python3 while Arduino in its standard programming language.

Components Used:
Arduino Uno, Buzzer (1), LED (1), potentiometer (1) and laptop.

Role of Components:

- Arduino Uno: Serves as microcontroller of our project responsible for coordinating the activities of the input (potentiometer) and output (LED, buzzer) devices.
- Potentiometer: Serves as the joystick for controlling the movement of the shooter in the game.
- Laptop: Used for powering Arduino and for display of the game.
- Buzzer: Varying intensity of the buzzer sound indicates the position of the controller on the screen.
- LED: Passively used with no direct relevance in the game. It glows only when the value of potentiometer is greater than 512.

Programming

GitHub link of Python 3 Game code: [Repo Link](https://github.com/yuvalbansal/Shooter_Game/blob/master/index.py)

https://github.com/yuvalbansal/Shooter_Game/blob/master/index.py

Arduino Code:

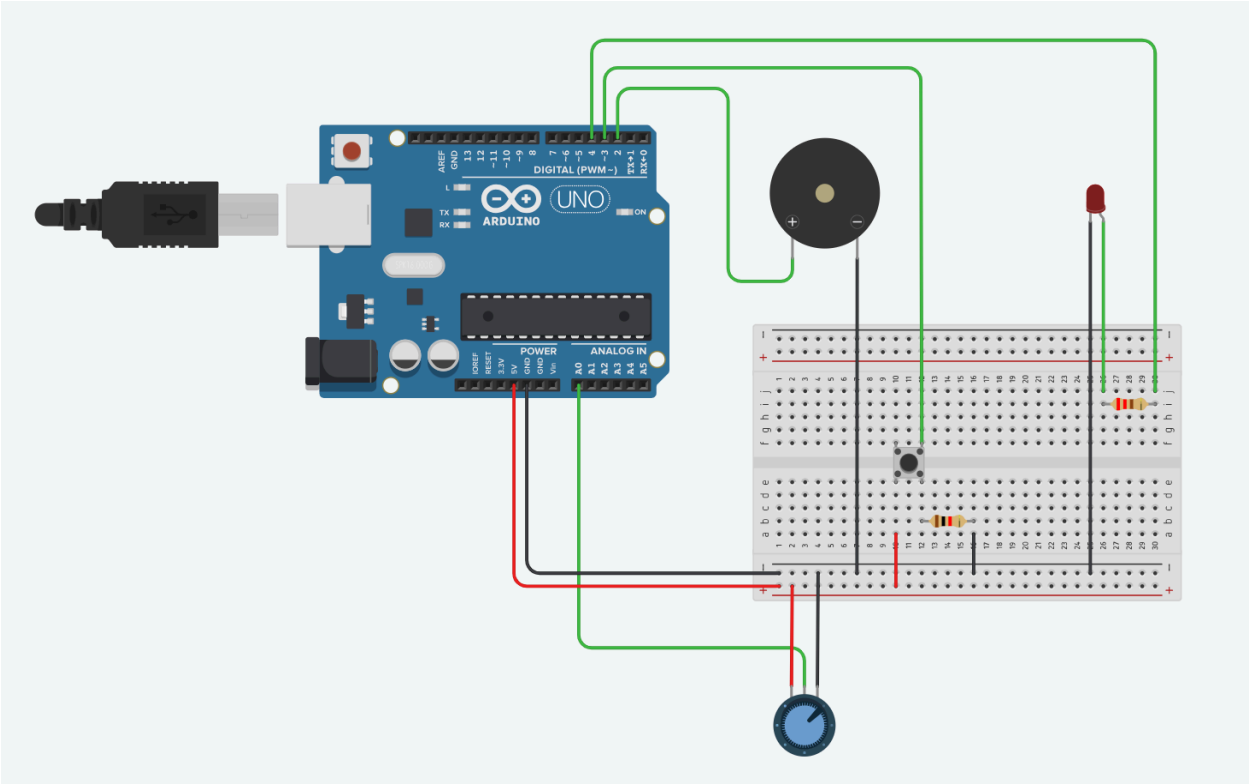
```
const int buzzerPin = 2;
const int potentiometerPIN = 0;
const int buttonPin = 3;
const int ledPin = 4;

int buttonState = 0;
int value = 0;

void setup()
{
  pinMode(buzzerPin, OUTPUT);
  pinMode(buttonPin, INPUT);
  pinMode(ledPin, OUTPUT);
  Serial.begin(9600);
}

void loop()
{
  value = analogRead(potentiometerPIN);
  tone(buzzerPin, value, 500);
  buttonState = digitalRead(buttonPin);
  if (buttonState == 1)
  {
    digitalWrite(ledPin, HIGH);
  }
  else
  {
    digitalWrite(ledPin, LOW);
  }
  Serial.print(value);
  Serial.print(" ");
  Serial.println(buttonState);
  delay(10);
}
```

Circuit



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