Design with microprocessors – Project

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For this project, I implemented a Flappy Bird game using Processing and serial communication to control the bird with a button. To do this, I continuously send through the serial port the state of the button, in our case 1 if it is not pressed and 2 if it is pressed (for some reason 0 wouldn't be printed).

a)Arduino IDE code

```
int BUTTON1 = 13;

void setup(){

Serial.begin(9600);

pinMode(BUTTON1,INPUT);

}

void loop(){

Serial.println( );

if(digitalRead(BUTTON1) == HIGH) //if the button is not pressed

{ Serial.println("1");     ← Send 1 through serial

}else{

Serial.println("2");       ← Send 2 through serial

} delay(400);

}
```

b)Processing code

```
import processing.serial.*;
Serial myPort;
String val;


    bird b = new bird();
    pillar[] p = new pillar[3];
    PImage img;
    PImage img2;
    boolean end=false;
    boolean intro=true;
    int score=0;
    void setup(){
```

```
      size(500,887);
      myPort = new Serial(this, "COM5", 9600);
      myPort.bufferUntil('n');
      for(int i = 0;i<3;i++){
      p[i]=new pillar(i);
      }
    }



void draw()
{
  if ( myPort.available() > 0)
  {  // If data is available,
  myPort.bufferUntil('\n');
  val = myPort.readStringUntil('\n');
  // read it and store it in val
  }
println(val); //print it out in the console
if(val=="2")                          ←checks for the value sent through the serial port
{
   b.jump();
     intro=false;
     if(end==false){
       reset();
     }
}
 img2 =loadImage("c.jpg");
      background(img2);
      if(end){
      b.move();
      }
      b.drawBird();

}
 img2 =loadImage("c.jpg");
      background(img2);
      if(end){
      b.move();
      }
      b.drawBird();

      if(end){
      b.drag();
      }
      b.checkCollisions();
      for(int i = 0;i<3;i++){
      p[i].drawPillar();
      p[i].checkPosition();
      }
      fill(0);
      stroke(255);
      textSize(32);
      if(end){

      …
```