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//Written by John Augustine 2014

#include <Wire.h>
#define REDPIN 9
#define GREENPIN 10
#define BLUEPIN 11
#define FADESPEED 20
char val;
int redNow;
int blueNow;
int greenNow;
int redNew;
int blueNew;
int greenNew;

int redLevel = 0;
int greenLevel = 0;
int blueLevel = 0;
float counter = 0;
float pi = 3.14159;

void setup()
{
  pinMode(7,INPUT); //SIG of the Parallax Sound Impact Sensor connected to Digital Pin 7
  pinMode(REDPIN, OUTPUT);
  pinMode(GREENPIN, OUTPUT);
  pinMode(BLUEPIN, OUTPUT);      // start serial communication at 9600bps
  redNow = random(255);
  blueNow = random(255);
  greenNow = random(255);
  redNew = redNow;
  blueNew = blueNow;
  greenNew = greenNow;
  Wire.begin(5);
  Wire.onReceive(receiveCommand);
}
void loop() {
  while(val == 'H')
    {
      #define fade(x,y) if (x>y) x--; else if (x<y) x++;


{
  boolean soundstate = digitalRead(7);
  if (soundstate == 1) {
    analogWrite(BLUEPIN, blueNow);
```

```
  analogWrite(REDPIN, redNow);
  analogWrite(GREENPIN, greenNow);
  redNew = random(255);
  blueNew = random(255);
  greenNew = random(255);
  // fade to new colors
  while ((redNow != redNew) ||
    (blueNow != blueNew) ||
    (greenNow != greenNew))
  {
    fade(redNow,redNew)
      fade(blueNow,blueNew)
        fade(greenNow,greenNew)
          analogWrite(BLUEPIN, blueNow);
    analogWrite(REDPIN, redNow);
    analogWrite(GREENPIN, greenNow);
    delay(1);
  }
}
else{
  digitalWrite(REDPIN,0);
  digitalWrite(GREENPIN,0);
  digitalWrite(BLUEPIN,0);
}
    }}
  while(val == 'G'){
counter = counter + 1;
redLevel = sin(counter/100)*1000;
greenLevel = sin(counter/100 + pi*2/3)*1000;
blueLevel = sin(counter/100 + pi*4/3)*1000;
redLevel = map(redLevel,-1000,1000,0,100);
greenLevel = map(greenLevel,-1000,1000,0,100);
blueLevel = map(blueLevel,-1000,1000,0,100);
analogWrite(REDPIN,redLevel);
analogWrite(GREENPIN,greenLevel);
analogWrite(BLUEPIN,blueLevel);
delay(100);

}
  while(val == 'I'){
  counter = counter + 1;
greenLevel = sin(counter/100)*1000;
blueLevel = sin(counter/100 + pi*2/3)*1000;
greenLevel = map(greenLevel,-1000,1000,0,100);
blueLevel = map(blueLevel,-1000,1000,0,100);
analogWrite(REDPIN,0);
```

```
  analogWrite(GREENPIN,greenLevel);
  analogWrite(BLUEPIN,blueLevel);
  delay(50);
}
  while(val == 'J'){
  counter = counter + 1;
  redLevel = sin(counter/100)*1000;
  greenLevel = sin(counter/100 + pi*2/3)*1000;
  redLevel = map(redLevel,-1000,1000,0,100);
  greenLevel = map(greenLevel,-1000,1000,0,100);
  analogWrite(REDPIN,redLevel);
  analogWrite(GREENPIN,greenLevel);
  analogWrite(BLUEPIN,0);
  delay(50);
 }
   while(val == 'K'){
   counter = counter + 1;
  redLevel = sin(counter/100)*1000;
  blueLevel = sin(counter/100 + pi*2/3)*1000;
  redLevel = map(redLevel,-1000,1000,0,100);
  blueLevel = map(blueLevel,-1000,1000,0,100);
  analogWrite(REDPIN,redLevel);
  analogWrite(GREENPIN,0);
  analogWrite(BLUEPIN,blueLevel);
  delay(50);
   }
}


void receiveCommand(int howMany)

{
    val = Wire.read();
}
```