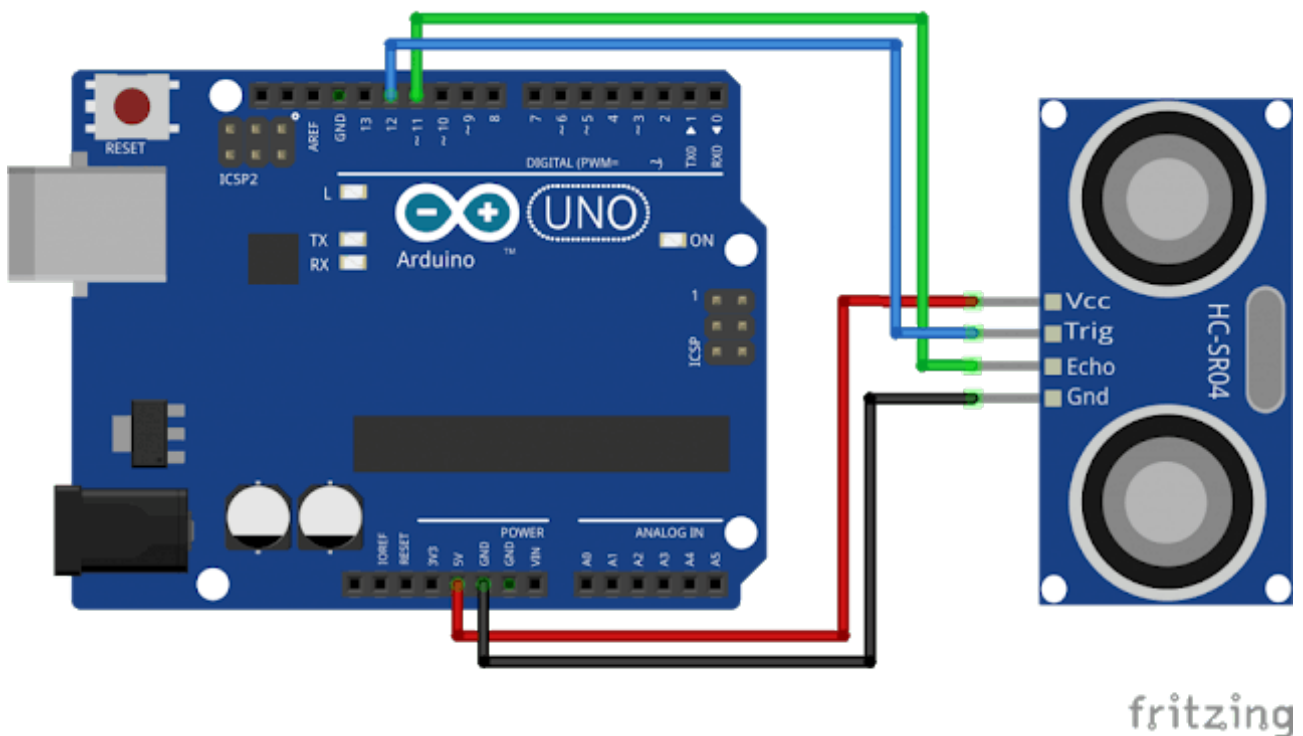


PROBLEM STATEMENT :

To scale an image using ultrasonic sensor such that the image scales with respect to the distance between the object and the sensor .

CIRCUIT DIAGRAM :



CODE :

ultrasonic_arduino.ino

```
#include <NewPing.h>
```

```
#define TRIGGER_PIN 12 // Arduino pin tied to trigger pin on the ultrasonic sensor.
```

```
#define ECHO_PIN 11 // Arduino pin tied to echo pin on the ultrasonic sensor.
```

```
#define MAX_DISTANCE 50 // Maximum distance we want to ping for (in centimeters). Maximum sensor distance is rated at 400-500cm.
```

```
NewPing sonar(TRIGGER_PIN, ECHO_PIN, MAX_DISTANCE); //
```

```
NewPing setup of pins and maximum distance.
```

```
void setup() {  
  Serial.begin(115200); // Open serial monitor at 115200 baud  
  to see ping results.  
}
```

```
void loop() {  
  delay(100); // Wait 50ms between pings  
  (about 20 pings/sec). 29ms should be the shortest delay  
  between pings.  
  Serial.write(sonar.ping_cm()); // Send ping, get distance  
  in cm and print result (0 = outside set distance range)  
}
```

ultrasonic_processing.pde

```
import processing.serial.*; //importing serial lib  
PImage diy; //declaring  
Serial arduino;  
int serialIn;  
int val=0;  
  
void setup()  
{  
  fullScreen(P2D);  
  printArray(Serial.list());  
  arduino = new Serial(this,Serial.list()[4],115200);  
  diy= loadImage("diy.png");  
  imageMode(CENTER);  
  diy.resize(500,500);  
  
}  
void draw()  
{  
  background(0);  
  image(diy,width/2,height/2,val,val);  
  
  if(arduino.available(>0)  
  {  
    serialIn=arduino.read();  
    println(serialIn);  
  }  
  val=int(map(serialIn,0,50,100,500));  
}
```