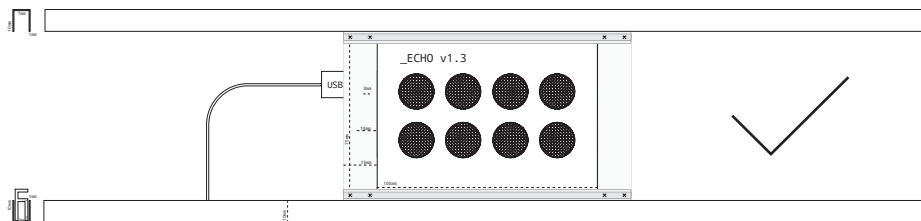
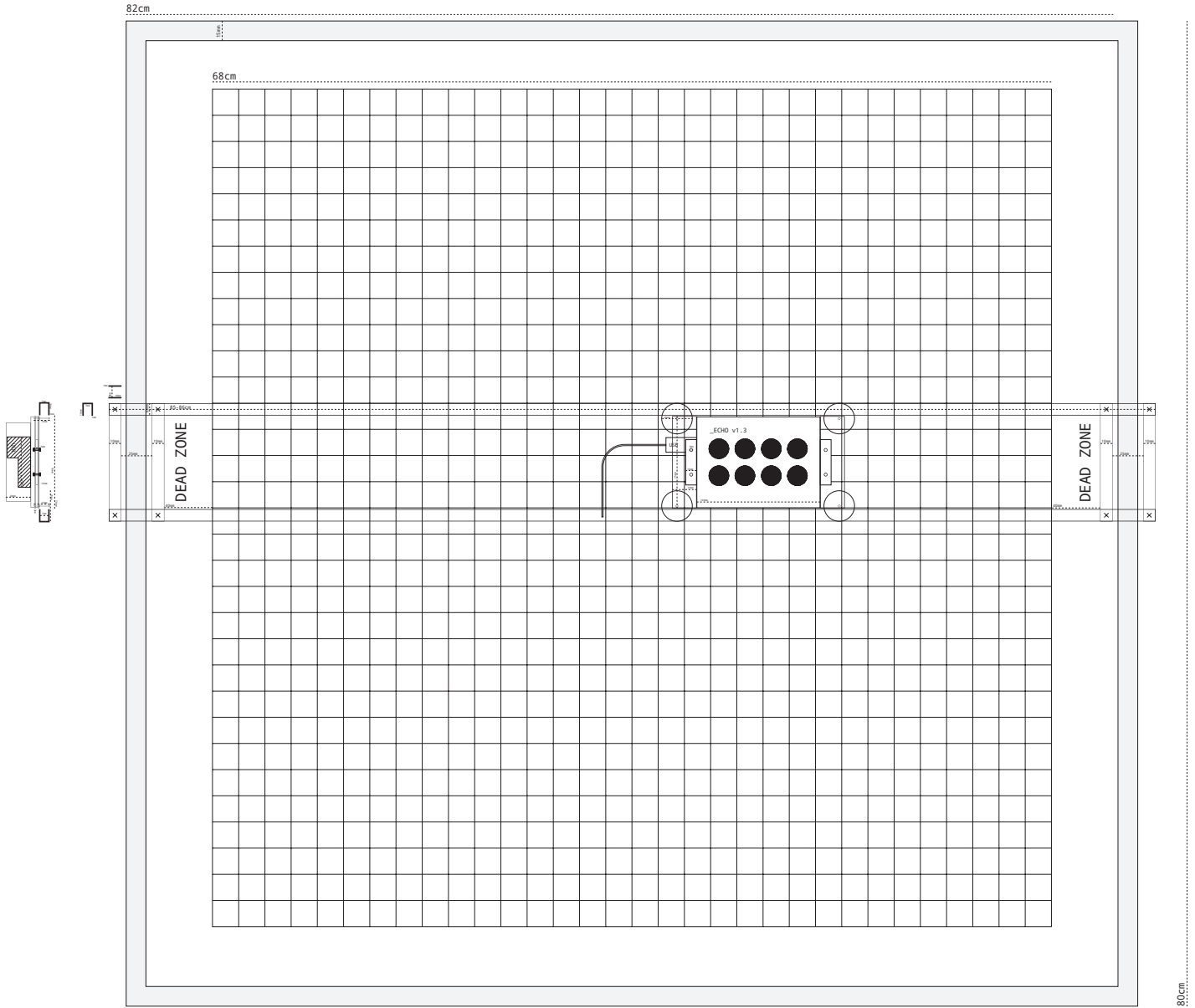


ECHO_{v1.03} /Jan Maštera/

_32x32



/program structure

```
unsigned int distance1 = 0;
unsigned int distance2 = 0;
unsigned int distance3 = 0;
unsigned int distance4 = 0;
unsigned int dist1 = 0;
unsigned int dist2 = 0;
unsigned int dist3 = 0;
unsigned int dist4 = 0;
int map1 = 0;
int map2 = 0;
int map3 = 0;
int map4 = 0;
int MAXin = 21800;
int MAXout = 10000;
int i;

//SRF05 no1
#define echoPin1 2 // Pin to receive echo pulse
#define trigPin1 3 // Pin to send trigger pulse
//SRF05 no2
#define echoPin2 4 // Pin to receive echo pulse
#define trigPin2 5 // Pin to send trigger pulse
//SRF05 no3
#define echoPin3 6 // Pin to receive echo pulse
#define trigPin3 7 // Pin to send trigger pulse
//SRF05 no4
#define echoPin4 8 // Pin to receive echo pulse
#define trigPin4 9 // Pin to send trigger pulse
#define ledPin1 13 // Pin to send trigger pulse

void setup(){
  Serial.begin(9600);
  pinMode(echoPin1, INPUT);
  pinMode(trigPin1, OUTPUT);
  pinMode(echoPin2, INPUT);
  pinMode(trigPin2, OUTPUT);
  pinMode(echoPin3, INPUT);
  pinMode(trigPin3, OUTPUT);
  pinMode(echoPin4, INPUT);
  pinMode(trigPin4, OUTPUT);
}

void loop(){
  //FIRST SRF05 - triple read
  //1st read
  digitalWrite(trigPin1, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin1, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin1, LOW); // Send pin low again
  int distance1 = pulseIn(echoPin1, HIGH); // Read in times pulse
  delay(40);
  //2nd read
  digitalWrite(trigPin1, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin1, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin1, LOW); // Send pin low again
  int distance1 = pulseIn(echoPin1, HIGH); // Read in times pulse
  delay(40);
  //3rd read
  digitalWrite(trigPin1, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin1, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin1, LOW); // Send pin low again
  int distance1 = pulseIn(echoPin1, HIGH); // Read in times pulse
  delay(40);

  unsigned int distance1 = (distance1+distance2+distance3);
  unsigned int dist1 = distance1/3;
  map1 = map(dist1,0,MAXin,0,MAXout);

  Serial.println(map1, DEC); // print out 1st
  //Serial.println(distance1/29, DEC); // print out 1st in CM

  digitalWrite(ledPin1, HIGH); // LED on
  delay(50);
  digitalWrite(ledPin1, LOW); // LED off (after delay)

  //SECOND SRF05 - triple read
  //1st read
  digitalWrite(trigPin2, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin2, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin2, LOW); // Send pin low again
  int distance2 = pulseIn(echoPin2, HIGH); // Read in times pulse
  delay(40);
  //2nd read
  digitalWrite(trigPin2, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin2, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin2, LOW); // Send pin low again
  int distance2 = pulseIn(echoPin2, HIGH); // Read in times pulse
  delay(40);
  //3rd read
  digitalWrite(trigPin2, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin2, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin2, LOW); // Send pin low again
  int distance2 = pulseIn(echoPin2, HIGH); // Read in times pulse
  delay(40);

  unsigned int distance2 = (distance2+distance2+distance2);
  unsigned int dist2 = distance2/3;
  map2 = map(dist2,0,MAXin,0,MAXout);

  Serial.println(map2, DEC); // print out 2nd
  //Serial.println(distance2/29, DEC); // print out 2nd in CM

  digitalWrite(ledPin1, HIGH); // LED on
  delay(50);
  digitalWrite(ledPin1, LOW); // LED off (after delay)

  //THIRD SRF05 - triple read
  //1st read
  digitalWrite(trigPin3, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin3, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin3, LOW); // Send pin low again
  int distance3 = pulseIn(echoPin3, HIGH); // Read in times pulse
  delay(40);
  //2nd read
  digitalWrite(trigPin3, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin3, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin3, LOW); // Send pin low again
  int distance3 = pulseIn(echoPin3, HIGH); // Read in times pulse
  delay(40);
  //3rd read
  digitalWrite(trigPin3, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin3, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin3, LOW); // Send pin low again
  int distance3 = pulseIn(echoPin3, HIGH); // Read in times pulse
  delay(40);

  unsigned int distance3 = (distance3+distance3+distance3);
  unsigned int dist3 = distance3/3;
  map3 = map(dist3,0,MAXin,0,MAXout);

  Serial.println(map3, DEC); // print out 3rd
  //Serial.println(distance3/29, DEC); // print out 3rd in CM

  digitalWrite(ledPin1, HIGH); // LED on
  delay(50);
  digitalWrite(ledPin1, LOW); // LED off (after delay)

  //FOURTH SRF05 - triple read
  //1st read
  digitalWrite(trigPin4, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin4, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin4, LOW); // Send pin low again
  int distance4 = pulseIn(echoPin4, HIGH); // Read in times pulse
  delay(40);
  //2nd read
  digitalWrite(trigPin4, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin4, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin4, LOW); // Send pin low again
  int distance4 = pulseIn(echoPin4, HIGH); // Read in times pulse
  delay(40);
  //3rd read
  digitalWrite(trigPin4, LOW); // Set the trigger pin to low for 2us
  delayMicroseconds(2);
  digitalWrite(trigPin4, HIGH); // Send a 10us high to trigger ranging
  delayMicroseconds(10);
  digitalWrite(trigPin4, LOW); // Send pin low again
  int distance4 = pulseIn(echoPin4, HIGH); // Read in times pulse
  delay(40);

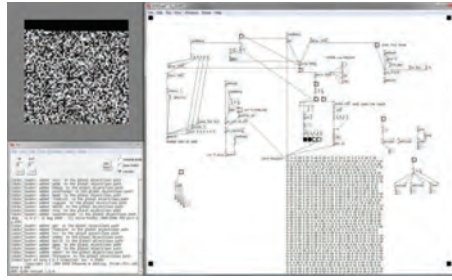
  unsigned int distance4 = (distance4+distance4+distance4);
  unsigned int dist4 = distance4/3;
  map4 = map(dist4,0,MAXin,0,MAXout);

  Serial.println(map4, DEC); // print out 4th
  //Serial.println(distance4/29, DEC); // print out 4th in CM

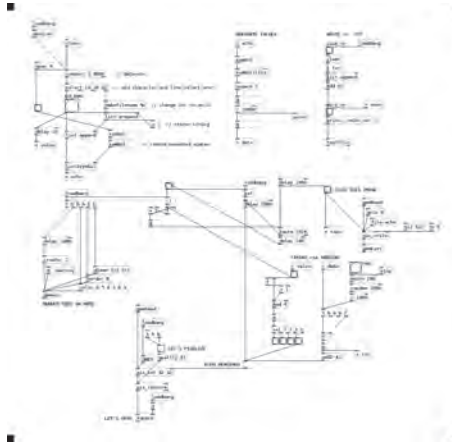
  digitalWrite(ledPin1, HIGH); // LED on
  delay(50);
  digitalWrite(ledPin1, LOW); // LED off (after delay)

  digitalWrite(ledPin1, HIGH); // LED on
  delay(3000);
  digitalWrite(ledPin1, LOW); // LED off (after delay)

  digitalWrite(ledPin1, HIGH); // LED on
  delay(7000);
  digitalWrite(ledPin1, LOW); // LED off (after delay)
}
```



alpha version

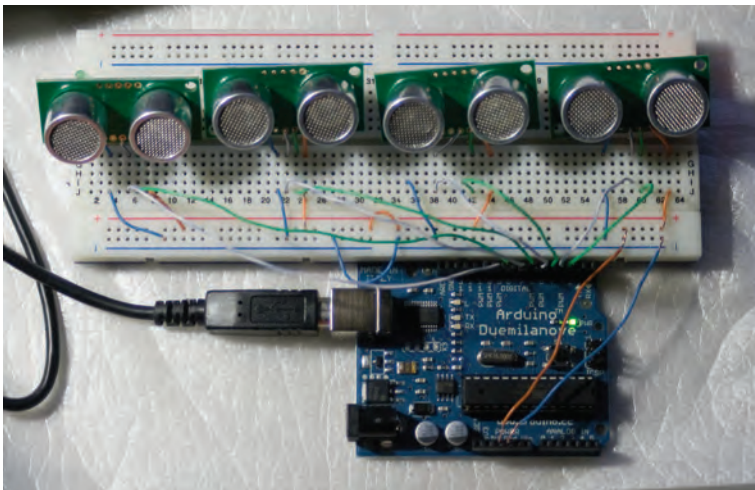


functional beta version

/hardware



theory



alpha version



functional v1.01 version

/on location



2⁰



2¹



2²



2³