Source code:

```
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 20, 4);
float cm;
float inches;


#define ECHO_PIN 12
#define TRIG_PIN 13
float dist;

void setup()
{
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
  //pir pin
  pinMode(34, INPUT);

  //ledpins
  pinMode(23, OUTPUT);
  pinMode(22, OUTPUT);
  pinMode(21, OUTPUT);
  pinMode(15, OUTPUT);


  lcd.init();
  lcd.backlight();
  lcd.setCursor(1, 0);
  lcd.print("");
}

float readcmCM()
{
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
  int duration = pulseIn(ECHO_PIN, HIGH);
  return duration * 0.034 / 2;
```

```
}

void loop()
 {


  if(digitalRead(34))                    //pir motion detection
  {
    Serial.println("Motion Detected");
    Serial.println("Lid Opened");
    digitalWrite(10, HIGH);
    delay(10000);
    Serial.println("Lid Closed");

  }
  else
  {
    digitalWrite(10, LOW);
  }

  if(cm <= 100)                          //Bin level detection
  {
    digitalWrite(21, HIGH);
    Serial.println("High Alert!!!,Trash bin is about to be full");
    digitalWrite(22, LOW);
    digitalWrite(23, LOW);
  }
  else if(cm > 150 && cm < 250)
  {
    digitalWrite(22, HIGH);
    Serial.println("Warning!!,Trash is about to cross 50% of bin level");
    digitalWrite(21, LOW);
    digitalWrite(23, LOW);
  }
  else if(cm > 250 && cm <=400)
  {
    digitalWrite(23, HIGH);
    Serial.println("Bin is available");
    digitalWrite(21, LOW);
    digitalWrite(22, LOW);
  }

float inches = (cm / 2.54);                    //print on lcd
  lcd.setCursor(0,0);
  lcd.print("Inches");
  lcd.setCursor(4,0);
  lcd.setCursor(12,0);
```

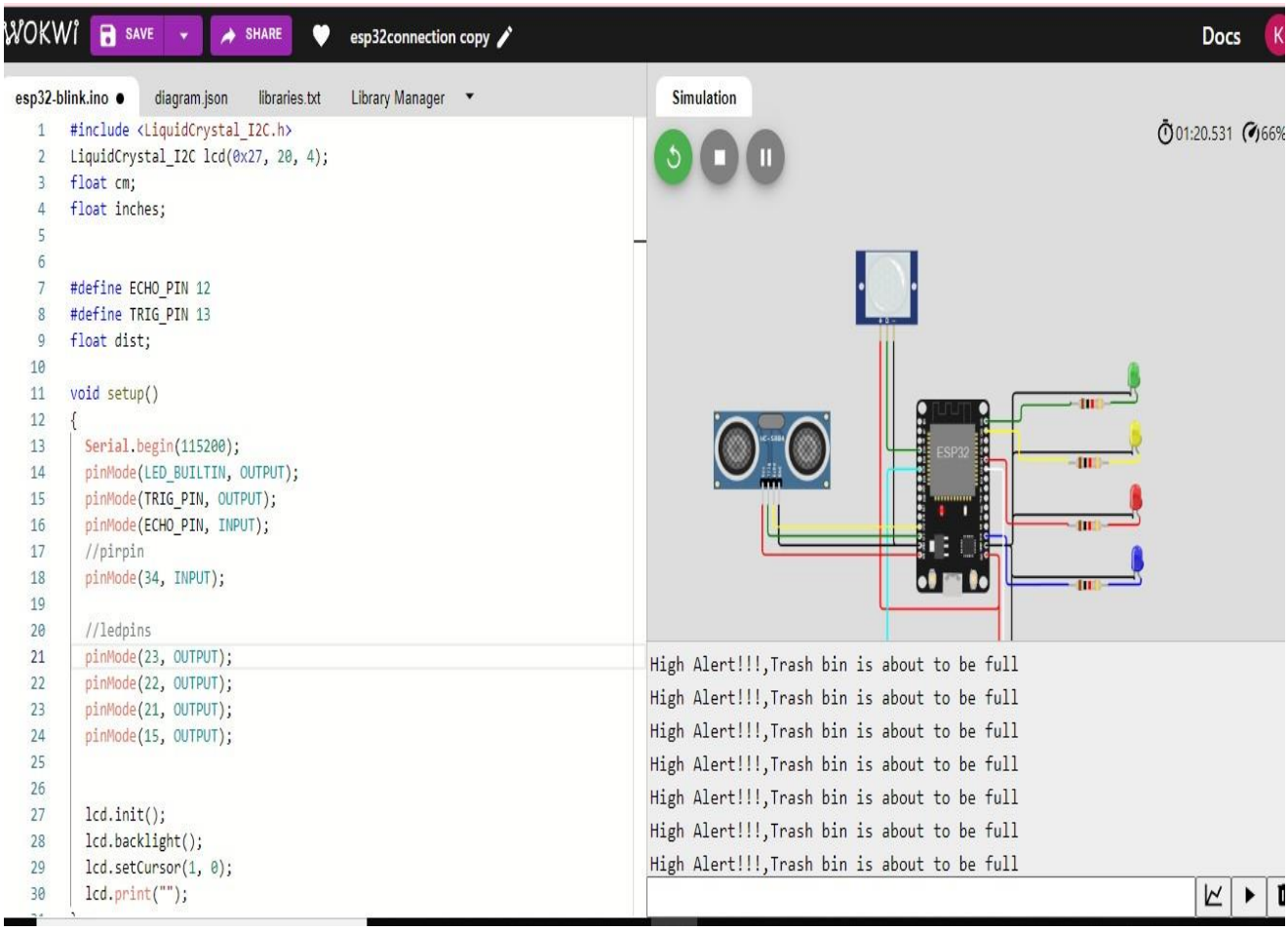
```
 lcd.print("cm");
 lcd.setCursor(1,1);
 lcd.print(inches, 1);
 lcd.setCursor(11,1);
 lcd.print(cm, 1);
 lcd.setCursor(14,1);
 delay(1000);
 lcd.clear();

}
```

Diagram.json file

```
{
 "version": 1,
 "author": "Uri Shaked",
 "editor": "wokwi",
 "parts": [
  { "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": 0, "left": 0, "attrs": {} },
  {
   "type": "wokwi-led",
   "id": "led1",
   "top": -43.97,
   "left": 296.62,
   "attrs": { "color": "limegreen" }
  },
  {
   "type": "wokwi-led",
   "id": "led2",
   "top": 15.48,
   "left": 299.36,
   "attrs": { "color": "yellow" }
  },
  {
   "type": "wokwi-led",
   "id": "led3",
   "top": 140.83,
   "left": 302.1,
   "attrs": { "color": "blue" }
  },
  {
   "type": "wokwi-led",
   "id": "led4",
   "top": 79.19,
   "left": 300.24,
   "attrs": { "color": "red" }
  },
  {
   "type": "wokwi-resistor",
```

```
  "id": "r1",
  "top": -3.9,
  "left": 224.81,
  "attrs": { "value": "1000" }
},
{
  "type": "wokwi-resistor",
  "id": "r2",
  "top": 55.55,
  "left": 221.42,
  "attrs": { "value": "1000" }
},
{
  "type": "wokwi-resistor",
  "id": "r3",
  "top": 179.36,
  "left": 221.1,
  "attrs": { "value": "1000" }
},
{
  "type": "wokwi-resistor",
  "id": "r4",
  "top": 119.28,
  "left": 220.77,
  "attrs": { "value": "1000" }
},
{
  "type": "wokwi-lcd1602",
  "id": "lcd1",
  "top": 248.08,
  "left": 161.61,
  "attrs": { "pins": "i2c" }
},
{
  "type": "wokwi-hc-sr04",
  "id": "ultrasonic1",
  "top": 13.99,
  "left": -295.33,
  "attrs": { "distance": "57" }
},
{
  "type": "wokwi-pir-motion-sensor",
  "id": "pir1",
  "top": -147.86,
  "left": -88.23,
  "attrs": {}
}
```

```
 ],
 "connections": [
  [ "esp:TX0", "$serialMonitor:RX", "", [] ],
  [ "esp:RX0", "$serialMonitor:TX", "", [] ],
  [ "led1:A", "r1:2", "green", [ "v0" ] ],
  [ "led2:A", "r2:2", "yellow", [ "v0" ] ],
  [ "led4:A", "r4:2", "red", [ "v0" ] ],
  [ "led3:A", "r3:2", "blue", [ "v0" ] ],
  [ "led1:C", "esp:GND.1", "black", [ "v-2.56", "h-170.98", "v116.48" ] ],
  [ "led2:C", "esp:GND.1", "black", [ "v-2.24", "h-173.72", "v91.96" ] ],
  [ "led4:C", "esp:GND.1", "black", [ "v-3.11", "h-174.6", "v27.59" ] ],
  [ "led3:C", "esp:GND.1", "black", [ "v-1.92", "h-177.99", "v-32.18" ] ],
  [ "r1:1", "esp:D23", "green", [ "v2.63", "h-71.91", "v19.92" ] ],
  [ "r2:1", "esp:D22", "yellow", [ "v-1.65", "h-71.58", "v-30.65" ] ],
  [ "r4:1", "esp:D21", "red", [ "v-1.01", "h-89.32", "v-64.37" ] ],
  [ "r3:1", "esp:D15", "blue", [ "v0.22", "h-89.65", "v-53.64" ] ],
  [ "lcd1:GND", "esp:GND.1", "black", [ "h-26.5", "v-129.82" ] ],
  [ "lcd1:VCC", "esp:3V3", "red", [ "h-44.89", "v-131.65" ] ],
  [ "pir1:VCC", "esp:3V3", "red", [ "v268.96", "h172.77", "v-55.17" ] ],
  [ "pir1:GND", "esp:GND.2", "black", [ "v0" ] ],
  [ "pir1:OUT", "esp:D34", "green", [ "v0" ] ],
  [ "esp:D32", "lcd1:SDA", "cyan", [ "h-46.74", "v226.73", "h207.35" ] ],
  [ "lcd1:SCL", "esp:D19", "white", [ "h-38.76", "v-0.46" ] ],
  [ "ultrasonic1:GND", "esp:GND.2", "black", [ "v0" ] ],
  [ "ultrasonic1:ECHO", "esp:D12", "yellow", [ "v0" ] ],
  [ "ultrasonic1:TRIG", "esp:D13", "green", [ "v0" ] ],
  [ "ultrasonic1:VCC", "esp:VIN", "red", [ "v0" ] ]
 ]
}
# Wokwi Library List
# See https://docs.wokwi.com/guides/libraries
LiquidCrystal I2C
```




```ino
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 20, 4);
float cm;
float inches;


#define ECHO_PIN 12
#define TRIG_PIN 13
float dist;

void setup()
{
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
  //pirpin
  pinMode(34, INPUT);

  //ledpins
  pinMode(23, OUTPUT);
  pinMode(22, OUTPUT);
  pinMode(21, OUTPUT);
  pinMode(15, OUTPUT);


  lcd.init();
  lcd.backlight();
  lcd.setCursor(1, 0);
  lcd.print("");
```