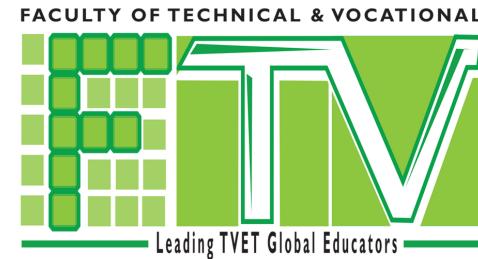




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SULTAN IDRIS EDUCATION UNIVERSITY



RISE @UPSI
Research, Innovation, Society and Entrepreneurship

MODUL PEMBELAJARAN ELEKTRONIK DENGAN KEFUNGSIAN PENDERIA

2.0 PENDERIA /SENSOR

2.5 ULTRASONIC SENSOR

MULAKAN



DI SEDIAKAN OLEH AMIN, DR IRDAYANTI

STEP 1:

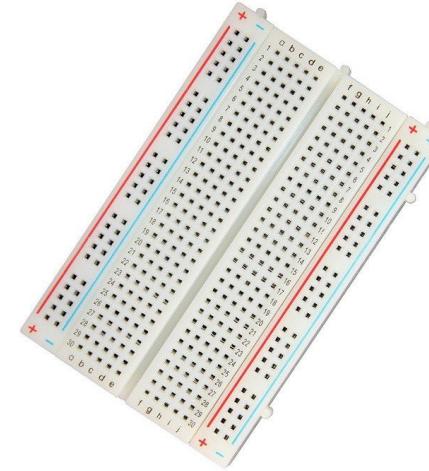
SEDIAKAN SEMUA KOMPONEN



8 RED LED



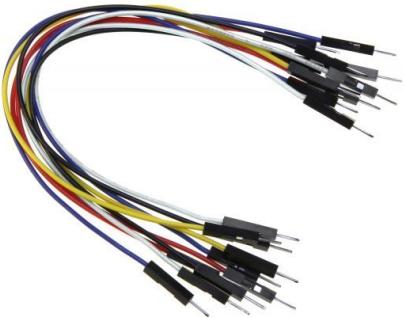
ARDUINO UNO R3



BREADBOARD



**8 1KOHM
RESISTOR**



**MALE TO MALE / FEMALE TO
MALE JUMPER WIRES-10 PIECES**



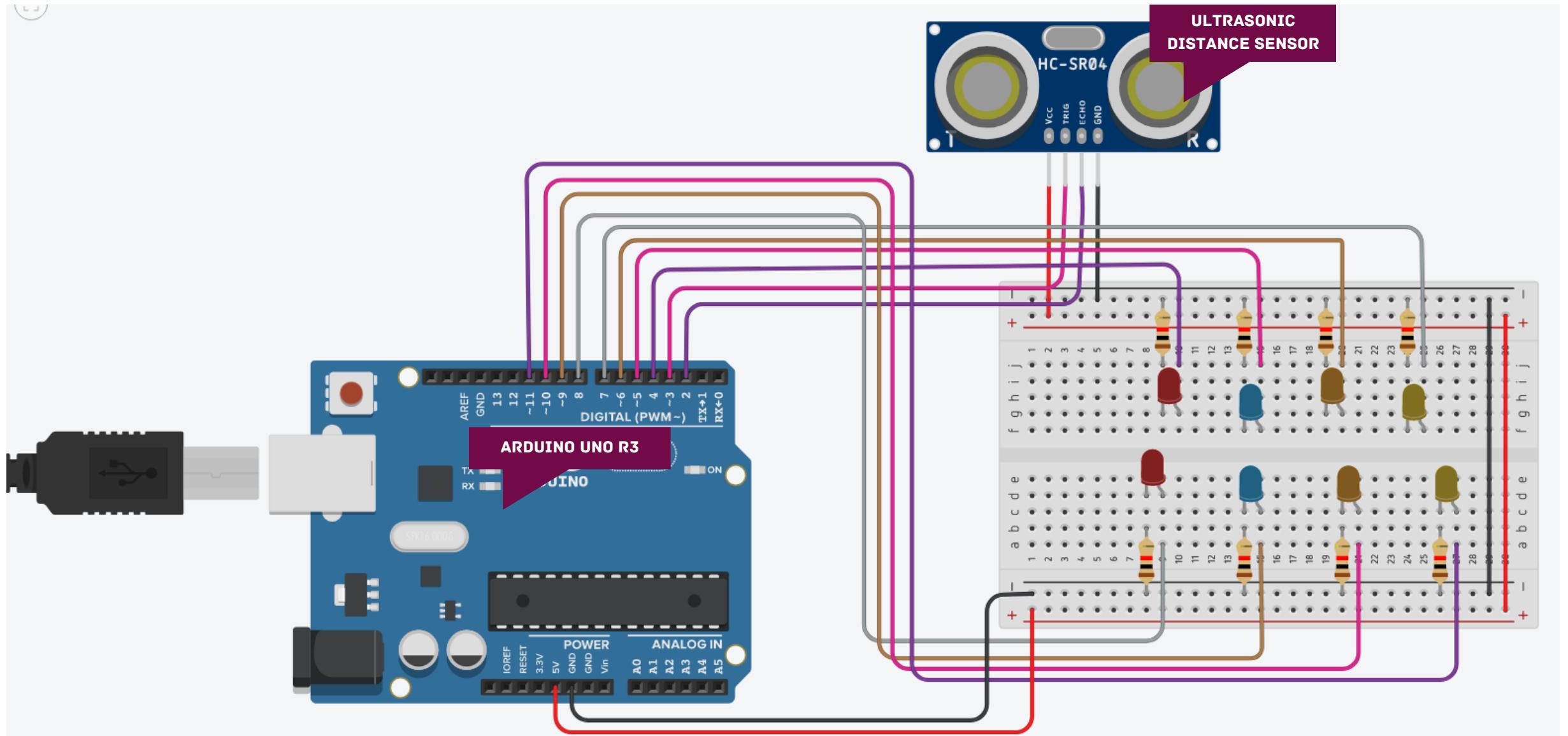
USB CABLE B

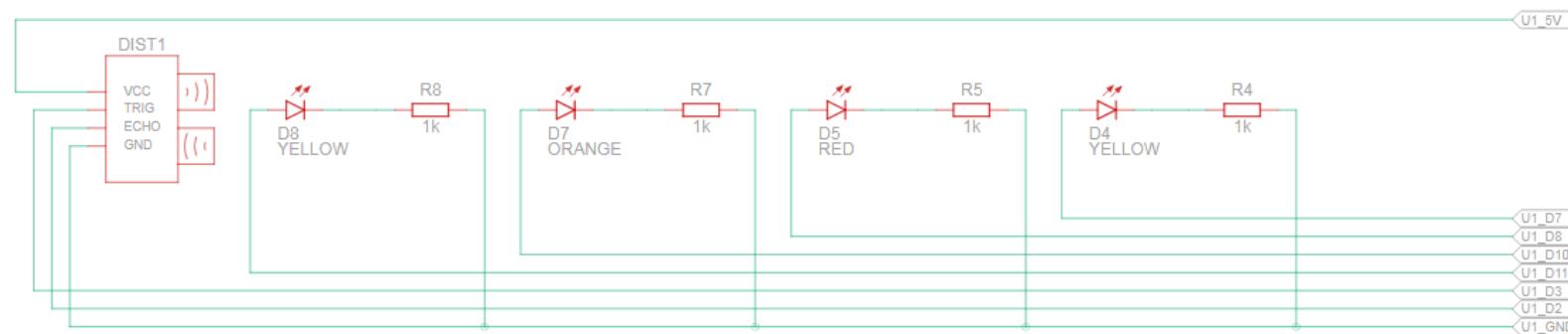
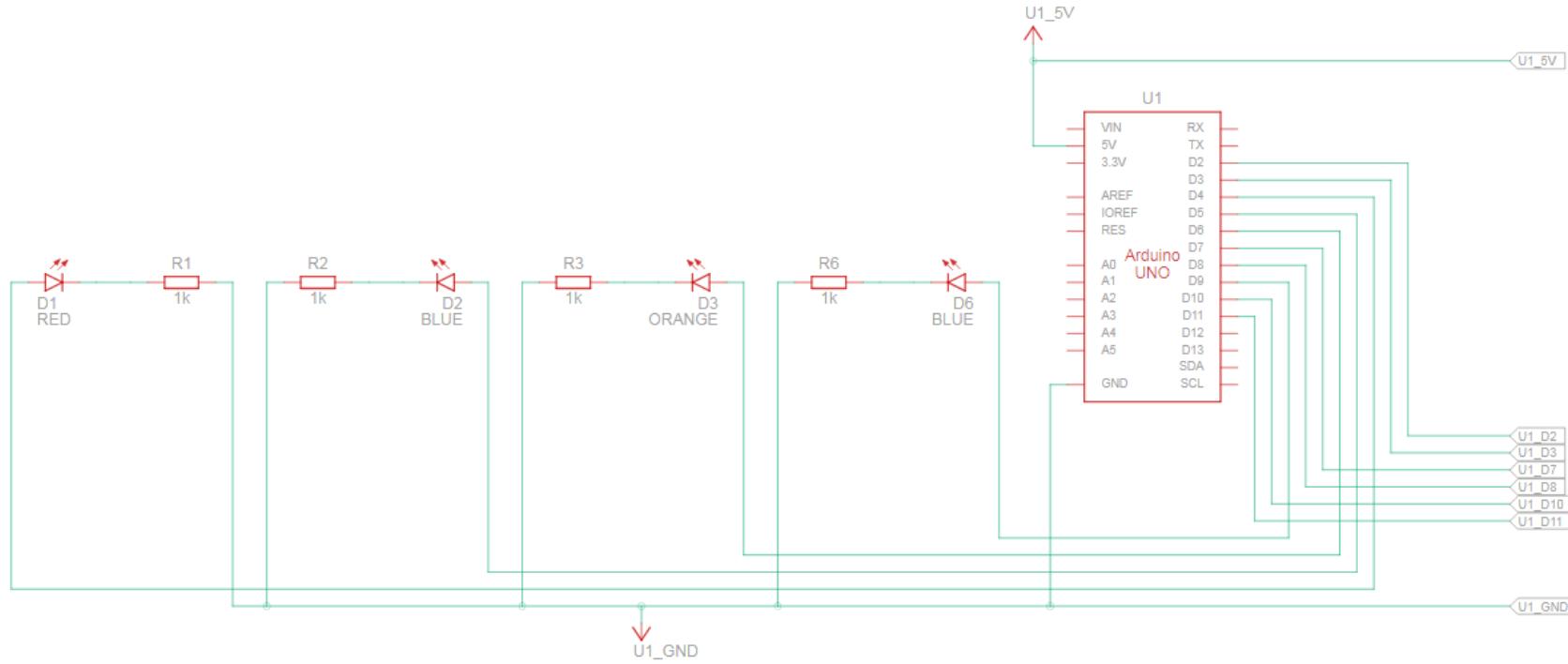


**ULTRASONIC
DISTANCE SENSOR**

STEP 2 :

GAMBAR RAJAH SAMBUNGAN





PANDANGAN SKEMATIK

STEP 3 :

CODDING ARDUINO UNO

```

#define echo 2
#define trig 3

#define LED8 11
#define LED7 10
#define LED6 9
#define LED5 8
#define LED4 7
#define LED3 6
#define LED2 5
#define LED1 4

float duration;
float distance;

void setup() {
    pinMode(trig, OUTPUT);
    pinMode(echo, INPUT);

    for (int i = 4; i <= 11; i++)
        pinMode(i, OUTPUT);

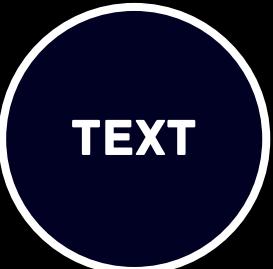
    Serial.begin(9600);
}

void loop() {
    time_Measurement();
    distance = duration * (0.0343) / 2;
    Serial.println(distance);

    led_Check();
    delay(10);

    for (int i = LED1; i <= LED8; i++) {
        digitalWrite(i, LOW);
    }
}

```



```

void time_Measurement()
{
    digitalWrite(trig, LOW);
    delayMicroseconds(2);

    digitalWrite(trig, HIGH);
    delayMicroseconds(10);
    digitalWrite(trig, LOW);

    duration = pulseIn(echo, HIGH);
}

void led_Check() {

    if (200 < distance && distance >220)
        digitalWrite(LED8, HIGH);
    else if (180 < distance && distance <200)
        digitalWrite(LED7, HIGH);
    else if (150 < distance && distance < 180)
        digitalWrite(LED6, HIGH);
    else if (110 < distance && distance < 150)
        digitalWrite(LED5, HIGH);
    else if (80 < distance && distance <110)
        digitalWrite(LED4, HIGH);
    else if (60 < distance && distance < 80)
        digitalWrite(LED3, HIGH);
    else if (40 < distance && distance < 60)
        digitalWrite(LED2, HIGH);
    else if (1 < distance && distance < 40)
        digitalWrite(LED1, HIGH);

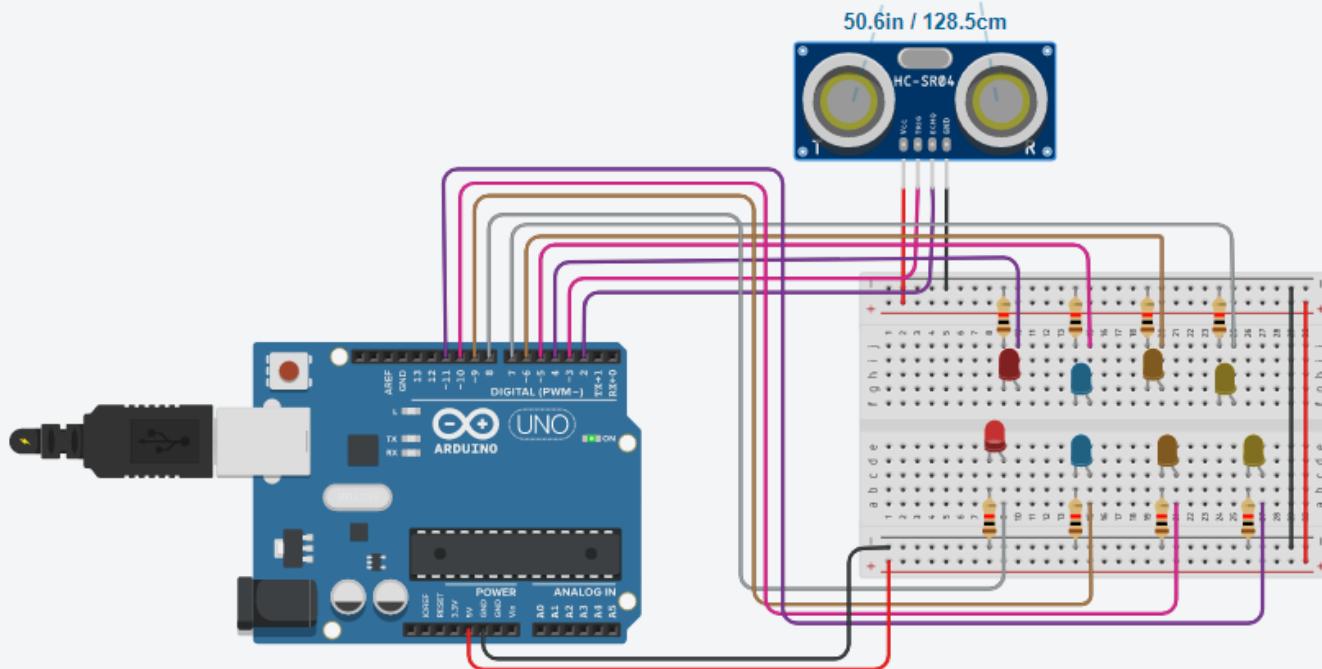
    else {
        for (int i = LED1; i <= LED8; i++)
            digitalWrite(i, LOW);
    }
}

```

STEP 4 :

SIMULASI

UBAH SUAI
NILAI



Serial Monitor

103.48

91.98

82.97

73.78

73.78

73.78

73.78

73.78

54.67

LINK
TINKERCAD

ENTER