UNIVERSITI PENDIDIKAN SULTAN IDRIS
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SULTAN IDRIS EDUCATION UNIVERSITY

FACULTY OF TECHNICAL & VOCATIONAL
FTV
Leading TVET Global Educators

RISE@UPSI
Research, Innovation, Society and Entrepreneurship

MODUL PEMBELAJARAN ELEKTRONIK DENGAN KEFUNGSIAN PENDERIA

2.0 PENDERIA /SENSOR

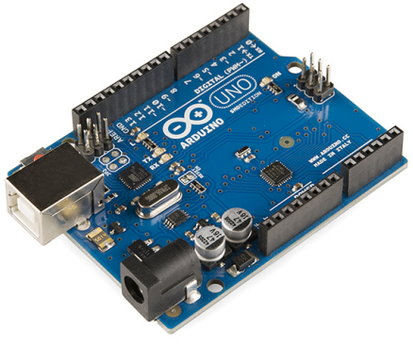
2.4 FLEX SENSOR

MULAKAN

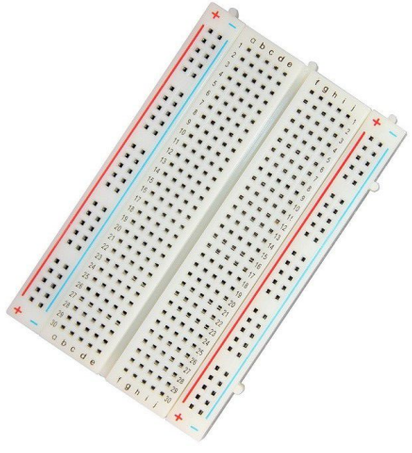
Di sediakan oleh Amin, Dr Irdayanti

STEP 1 :
SEDIAKAN SEMUA KOMPONEN

4 RED LED

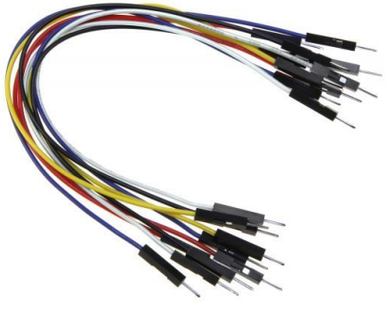


ARDUINO UNO R3



BREADBOARD

5 1KOHM RESISTOR

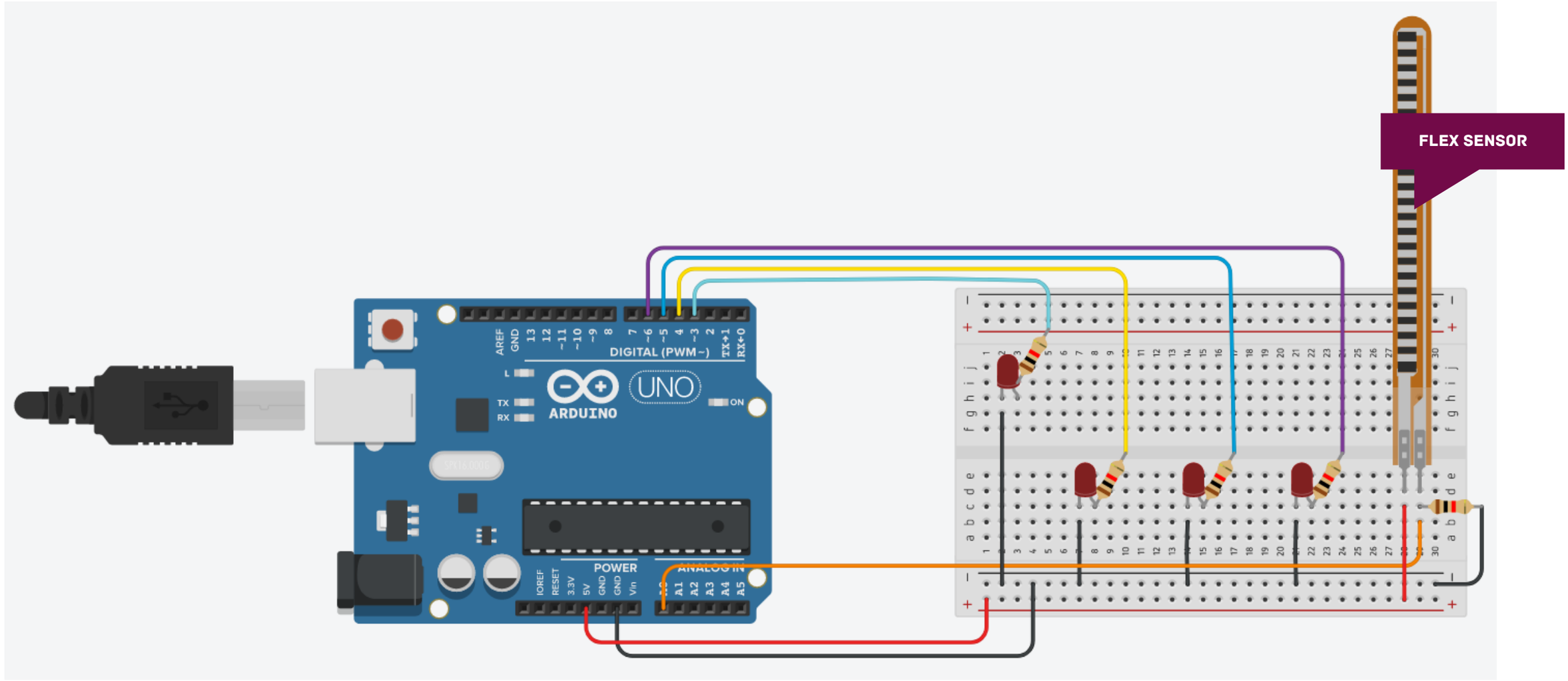


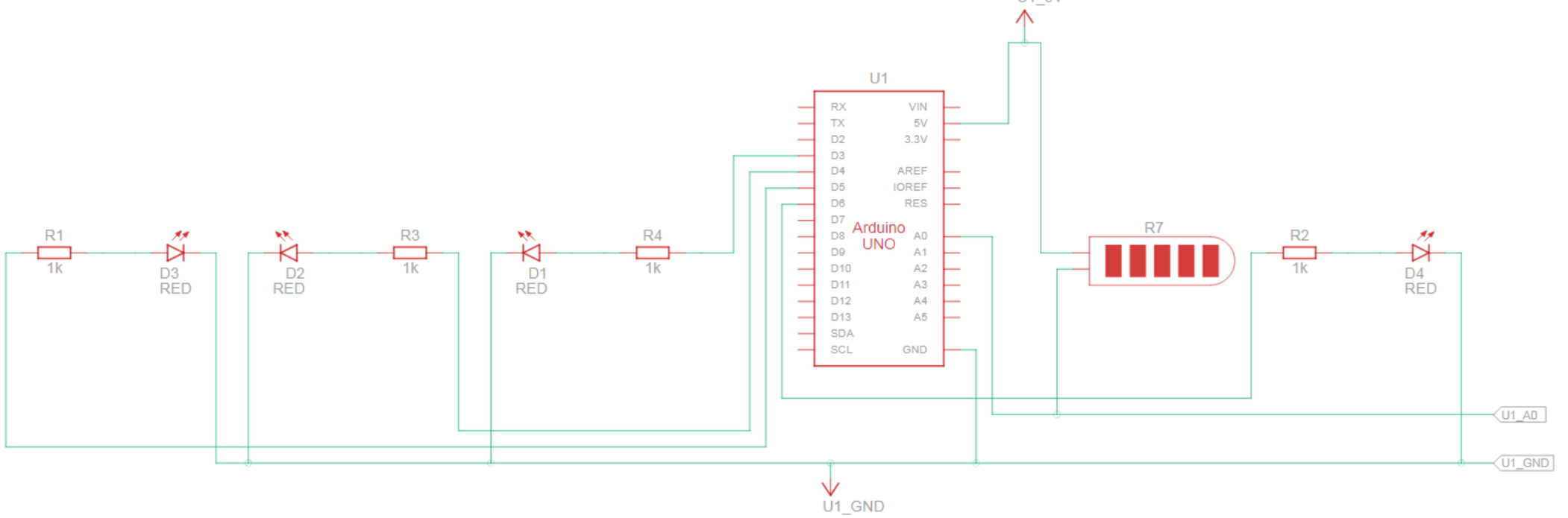
MALE TO MALE / FEMALE TO MALE JUMPER WIRES-10 PIECES

USB CABLE B

FLEX SENSOR

STEP 2 :
GAMBAR RAJAH SAMBUNGAN


FLEX SENSOR
DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN



PANDANGAN SKEMATIK

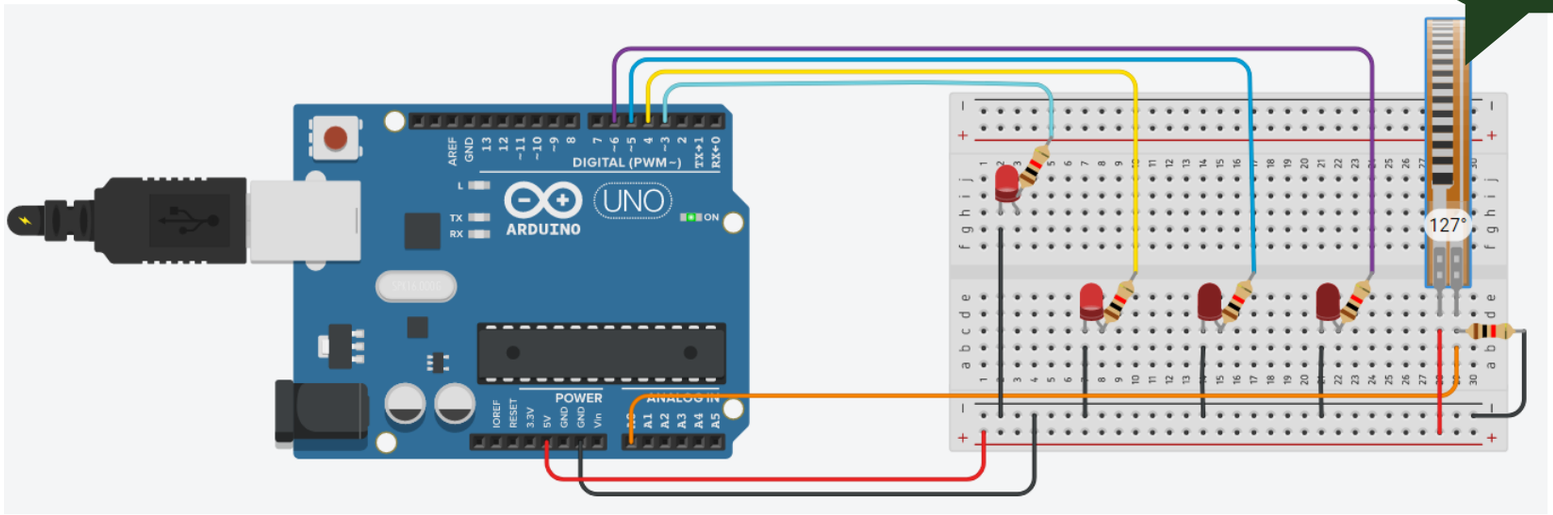
STEP 3 :
CODDING ARDUINO UNO

```
const int analogIn = A0;
int flexsensorOutput = 0;
// Defining Variables
double flex = 0;
int LEDa = 3;
int LEDb = 4;
int LEDc = 5;
int LEDd = 6;

void setup()
{
   Serial.begin(9600);
   pinMode(LEDa, OUTPUT);
   pinMode(LEDb, OUTPUT);
   pinMode(LEDc, OUTPUT);
   pinMode(LEDd, OUTPUT);
   pinMode(flex,INPUT);
}

void loop()
{
  int value = analogRead(analogIn);
  if(value>30){
   Serial.print("Flex sensor = ");
   Serial.print(value); // display temperature value
    value = map(value, 700, 900, 0, 255);//Map value
0-1023 to 0-255 (PWM)
   Serial.print("");
   Serial.println();
    analogWrite(flex,value);
    digitalWrite(LEDa,HIGH);
    digitalWrite(LEDb,LOW);
    digitalWrite(LEDc,LOW);
    digitalWrite(LEDd,LOW);
    delay(1000);
  }
```


```
  else if(value <30 && value > 20){
   Serial.print("Flex sensor = ");
   Serial.print(value); // display temperature value
   value = map(value, 700, 900, 0, 255);//Map value 0-1023 to 0-255 (PWM)
   Serial.print("");
   Serial.println();
    analogWrite(flex,value);
    digitalWrite(LEDa,HIGH);
    digitalWrite(LEDb,HIGH);
    digitalWrite(LEDc,LOW);
    digitalWrite(LEDd,LOW);
    delay(1000);
  }
  else if(value <20 && value > 10){
    Serial.print("Flex sensor= ");
   Serial.print(value); // display temperature value
   value = map(value, 700, 900, 0, 255);//Map value 0-1023 to 0-255 (PWM)
   Serial.print("");
   Serial.println();
    analogWrite(flex,value);
    digitalWrite(LEDa,HIGH);
    digitalWrite(LEDb,HIGH);
    digitalWrite(LEDc,HIGH);
    digitalWrite(LEDd,LOW);
    delay(1000);

  }
  else if(value <10 && value > 0){
    Serial.print("Flex sensor = ");
   Serial.print(value); // display temperature value
   value = map(value, 700, 900, 0, 255);//Map value 0-1023 to 0-255 (PWM)
   Serial.print("");
   Serial.println();
    analogWrite(flex,value);
    digitalWrite(LEDa,HIGH);
    digitalWrite(LEDb,HIGH);
    digitalWrite(LEDc,HIGH);
    digitalWrite(LEDd,HIGH);
    delay(1000);
  }
}
```

STEP 4 :
SIMULASI

UBAH SUAI NILAI



Serial Monitor

```
Flex sensor = 33
Flex sensor = 33
Flex sensor = 33
Flex sensor = 33
Flex sensor = 8
Flex sensor = 8
Flex sensor = 8
Flex sensor = 8
```

LINK TINKERCAD

ENTER