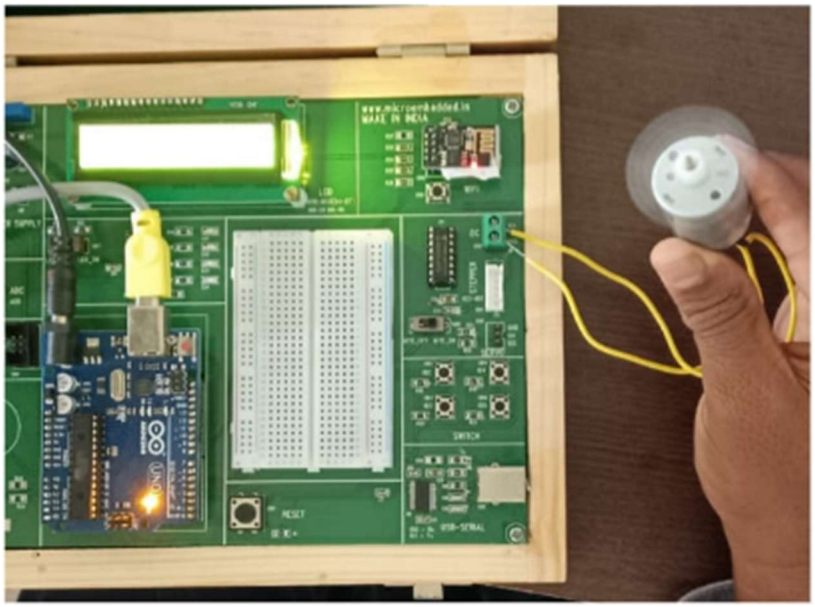
DC MOTOR

INPUT

```
 const int potPin = A0;     // Potentiometer

const int motorPin1 = 3;    // Connected to ULN2003 IN1

void setup() {
  Serial.begin(9600);
  pinMode(motorPin1, OUTPUT);
  digitalWrite(motorPin1,HIGH);
}

void loop() {
  int potValue = analogRead(potPin);            // Read pot (0–1023)
  Serial.print(potValue);
  Serial.print("=>");
  int pwmValue = map(potValue, 0, 1023, 0, 255); // Map to PWM (0–255)
  Serial.println(pwmValue);
  analogWrite(motorPin1, pwmValue);              // Send PWM to motor
  delay(10);
}
```

OUTPUT

```
11:02:31.851 -> 933=>232
11:02:31.851 -> 933=>232
11:02:31.883 -> 930=>231
11:02:31.883 -> 928=>231
11:02:31.883 -> 926=>230
11:02:31.916 -> 923=>230
11:02:31.916 -> 919=>229
11:02:31.916 -> 918=>228
11:02:31.947 -> 915=>228
11:02:31.947 -> 914=>227
11:02:31.947 -> 912=>227
11:02:31.979 -> 908=>226
11:02:31.979 -> 906=>225
11:02:31.979 -> 905=>225
11:02:32.012 -> 902=>224
11:02:32.012 -> 901=>224
1021=>254
11:10:32.316 -> 1021=>254
11:10:32.316 -> 1021=>254
11:10:32.349 -> 1021=>254
11:10:32.349 -> 1021=>254
```



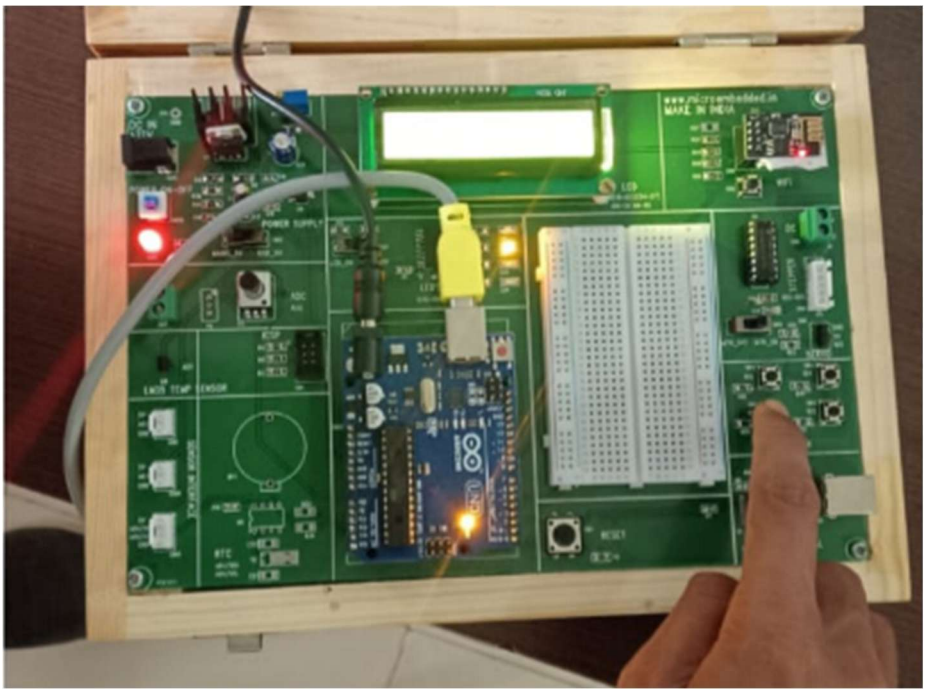
LED BLINK

INPUT

```
#define LED1 10
#define LED2 11
#define LED3 12
#define LED4 13

void setup() {
  // put your setup code here, to run once:
 Serial.begin(9600);
  Serial.println("OUTPUT");
  pinMode(LED1,OUTPUT);
pinMode(LED2,OUTPUT);
pinMode(LED3,OUTPUT);
pinMode(LED4,OUTPUT);

digitalWrite(LED1,LOW);
digitalWrite(LED2,LOW);
digitalWrite(LED3,LOW);
digitalWrite(LED4,LOW);
}

void loop() {
  // put your main code here, to run repeatedly:
Serial.println("LOW");
digitalWrite(LED1,LOW);
digitalWrite(LED2,LOW);
digitalWrite(LED3,LOW);
digitalWrite(LED4,LOW);
delay(1000);

Serial.println("HIGH");
digitalWrite(LED1,HIGH);
digitalWrite(LED2,HIGH);
digitalWrite(LED3,HIGH);
digitalWrite(LED4,HIGH);
delay(1000);

}
```

OUTPUT

```
12:05:53.354 -> HIGH
12:05:54.359 -> LOW
12:05:55.371 -> HIGH
12:05:56.371 -> LOW
12:05:57.354 -> HIGH
12:05:58.400 -> LOW
12:05:59.400 -> HIGH
12:06:00.388 -> LOW
```



LED PUSHBUTTON

INPUT

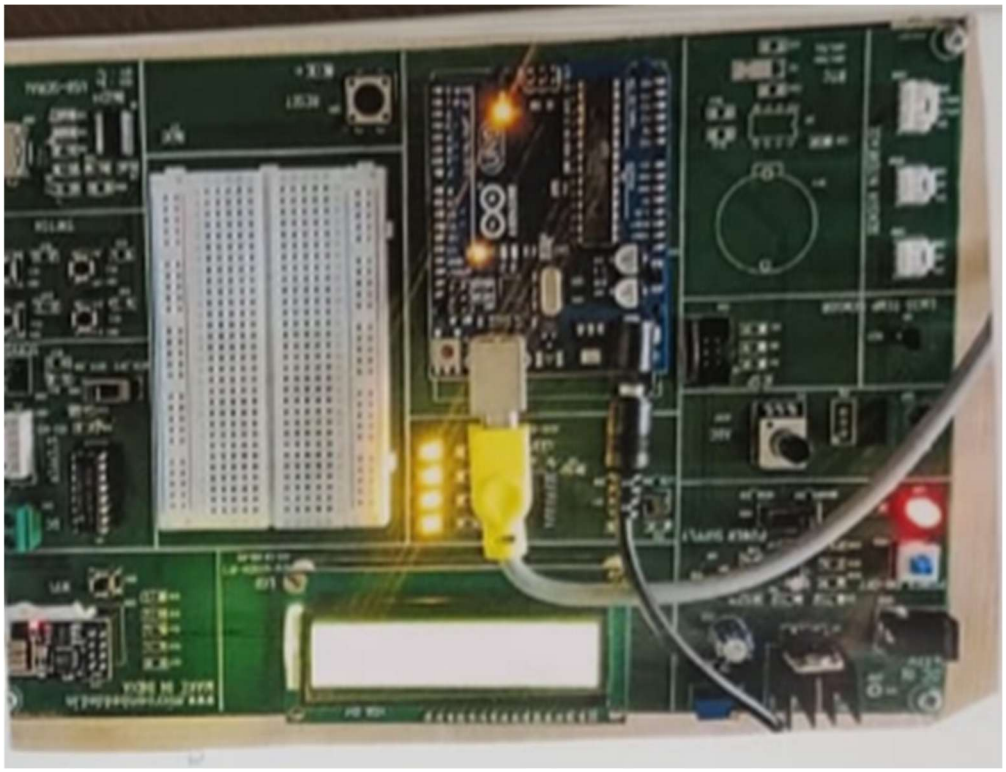
```
#define LED1 10
#define LED2 11
#define LED3 12
#define LED4 13

#define button1 2
#define button2 3
#define button3 4
#define button4 5

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  Serial.println("press push-button switches SW2-SW5");
pinMode(LED1,OUTPUT);
pinMode(LED2,OUTPUT);
pinMode(LED3,OUTPUT);
pinMode(LED4,OUTPUT);
pinMode(button1,INPUT);
pinMode(button2,INPUT);
pinMode(button3,INPUT);
pinMode(button4,INPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
if(digitalRead(button1)== LOW)
{
  Serial.println("SW2 pressed HIGH");
  digitalWrite(LED1,HIGH);
  delay(1000);
}
else
  Serial.println("SW2 pressed LOW");
digitalWrite(LED1,LOW);

if(digitalRead(button2)== LOW)
  {
  Serial.println("SW3 pressed HIGH");
```

```
  digitalWrite(LED2,HIGH);
  delay(1000);
}
else
  Serial.println("SW3 pressed LOW");
digitalWrite(LED2,LOW);


if(digitalRead(button3)== LOW)
  {
  Serial.println("SW4 pressed HIGH");
  digitalWrite(LED3,HIGH);
  delay(1000);
}
else
  Serial.println("SW4 pressed LOW");
digitalWrite(LED3,LOW);

if(digitalRead(button4)== LOW)
  {
  Serial.println("SW5 pressed HIGH");
  digitalWrite(LED4,HIGH);
  delay(1000);
}
else
  Serial.println("SW5 pressed LOW");
digitalWrite(LED4,LOW);
}
```

OUTPUT

```
12:02:17.488 -> SW4 pressed LOW
12:02:17.488 -> SW5 pressed LOW
12:02:17.520 -> SW2 pressed LOW
12:02:17.520 -> SW3 pressed LOW
12:02:17.551 -> SW4 pressed LOW
12:02:17.551 -> SW5 pressed LOW
12:02:17.584 -> SW2 pressed LOW
12:02:17.616 -> SW3 pressed LOW
12:02:17.616 -> SW4 pressed LOW
12:02:17.662 -> SW5 pressed HIGH
12:02:18.575 -> SW2 pressed LOW
12:02:18.608 -> SW3 pressed LOW
12:02:18.652 -> SW4 pressed HIGH
```

```
12:02:19.599 -> SW5 pressed LOW
12:02:19.599 -> SW2 pressed LOW
```



TEMPERATURE SENSOR

INPUT

```
#include <LiquidCrystal.h>

LiquidCrystal lcd(6,9,10,11,12,13);   //rs,en,d4,d5,d6,d7

const int LM35sensorPin = A1;  // Analog input pin connected to LM35

void setup() {
  Serial.begin(9600); // Start serial communication
  lcd.begin(16,2);
}

void loop() {
  int analogValue = analogRead(LM35sensorPin); // Read the analog value
  float voltage = analogValue * (5.0 / 1023.0); // Convert to voltage
  float temperatureC = voltage * 100.0; // Convert voltage to Celsius

  Serial.print("Temperature: ");
  Serial.print(temperatureC);
  Serial.println(" °C");

  lcd.setCursor(0,0);
  lcd.print("Temperature-LM35");
  lcd.setCursor(0,1);
  lcd.print(temperatureC);

  lcd.setCursor(7,1);
  lcd.print("Celcius");

  delay(1000); // Wait 1 second
}
```

OUTPUT

```
12:09:02.937 -> Temperature: 30.79 °C
12:09:03.974 -> Temperature: 30.79 °C
12:09:04.998 -> Temperature: 30.79 °C
12:09:06.002 -> Temperature: 30.79 °C
12:09:06.991 -> Temperature: 32.26 °C
12:09:08.001 -> Temperature: 32.75 °C
12:09:09.036 -> Temperature: 33.24 °C
12:09:10.051 -> Temperature: 33.72 °C
12:09:11.042 -> Temperature: 33.72 °C
12:09:12.088 -> Temperature: 34.21 °C
12:09:13.082 -> Temperature: 34.21 °C
```