Exp.11: Temperature-Controlled Fan Interface with ESP8266 and Blynk IoT

OBJECTIVES:

1. Interface a temperature-controlled fan with ESP8266 NodeMCU.
2. Monitor and control the fan based on DHT11 temperature readings.
3. Visualize data and control the fan remotely via Blynk IoT.

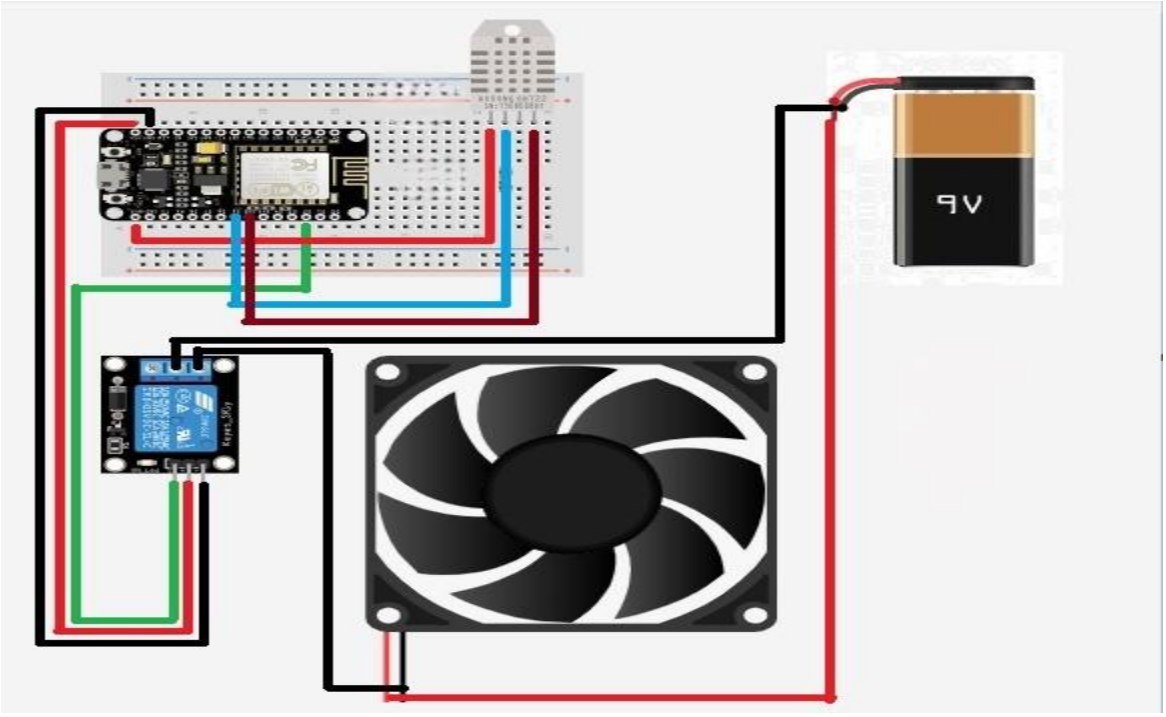
MATERIALS REQUIRED:

ESP8266 NodeMCU board
Motor driver (L298N)
DHT11 sensor
AC Fan
Breadboard
Jumper wires
USB cable
Computer with Arduino IDE
Blynk app installed on smartphone/tablet

THEORY:

ESP8266 NodeMCU controls an AC fan using DHT11 temperature readings. Motor Driver (L298N) handles the high-current fan operation. ESP8266 connects to Wi-Fi and uses Blynk for remote monitoring/control.

CIRCUIT DIAGRAM:



PROCEDURE:

1. **Hardware Setup:** Connect Motor Driver: ENA → D5, IN1 → D6, IN2 → D7; DHT11: VCC → 3.3V, GND → GND, DATA → D4.
2. **Software Setup:** Install libraries: Blynk, DHT sensor. Configure Blynk app: Value Display (V1), Button (V0).
3. **Programming:** Code to connect ESP8266 to Blynk and control fan based on sensor data.
4. **Running the Experiment:** Monitor temperature on Serial Monitor & Blynk app. Control fan manually or automatically.

OBSERVATIONS:

S.No	Temperature (°C/°F)	Fan Speed
1	**30 °C**	**80%**
2	**32 °C**	**100%**

RESULT:

The fan is successfully controlled by temperature and manual input using ESP8266 and Blynk.

CONCLUSION:

This experiment demonstrates IoT-based temperature control using ESP8266 and Blynk.

APPENDIX:

- Symbols: V (Voltage), GPIO, GND, VCC, DHT.
- Tools: ESP8266, L298N, DHT11, Breadboard, Jumper wires.
- Resources:
- ESP8266 Documentation
- Arduino IDE Installation Guide
- Blynk Documentation
- DHT11 Sensor Guide- Motor Driver Guide

Reference Link with QR Code:

https://www.youtube.com/watch?v=klcjGD58hzo