

PRACTICAL 8

AIM: Using Raspberry pi to capture data from sensors and making a basic decision (Basic Automatic Cooling System).

Parts Required:

- 1 x Raspberry Pi
- 1 x DHT Sensor
- 1 x Cooling Fan
- 1 x Relay Switch
- 1 x Fan Power Supply
- 6 x Breadboard wires
- 1 x Breadboard (project board)
- 1 x Raspberry Pi power supply

Circuit Diagram:

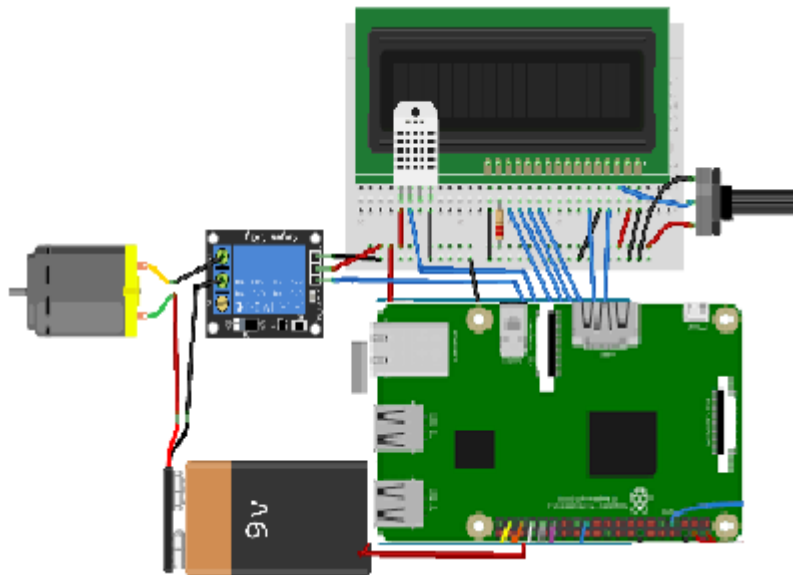


Figure 8.1: Circuit Diagram for Basic Automatic Cooling System

Code:

```
import RPi.GPIO as GPIO
from time import sleep
import Adafruit_DHT as dht
GPIO.setwarnings(False)
print('Getting data from the sensor')
GPIO.setmode(GPIO.BOARD)
FAN=11
GPIO.setup(FAN,GPIO.OUT)
humidity,temperature=dht.read_retry(dht.DHT11,4)
#humidity=28
#temperature=34
print('Temp:%s'%temperature,'humidity:%s'%humidity)
try:
    if temperature>20:
        print('Temp>20')
        GPIO.output(FAN,0)
```

```
print('Fan ON')
sleep(10)
print('Fan OFF')
GPIO.output(FAN,1)
else:
    GPIO.output(FAN,1)
    print("Temp below max value. FAN OFF")
finally:
    GPIO.cleanup()
```

Implementation

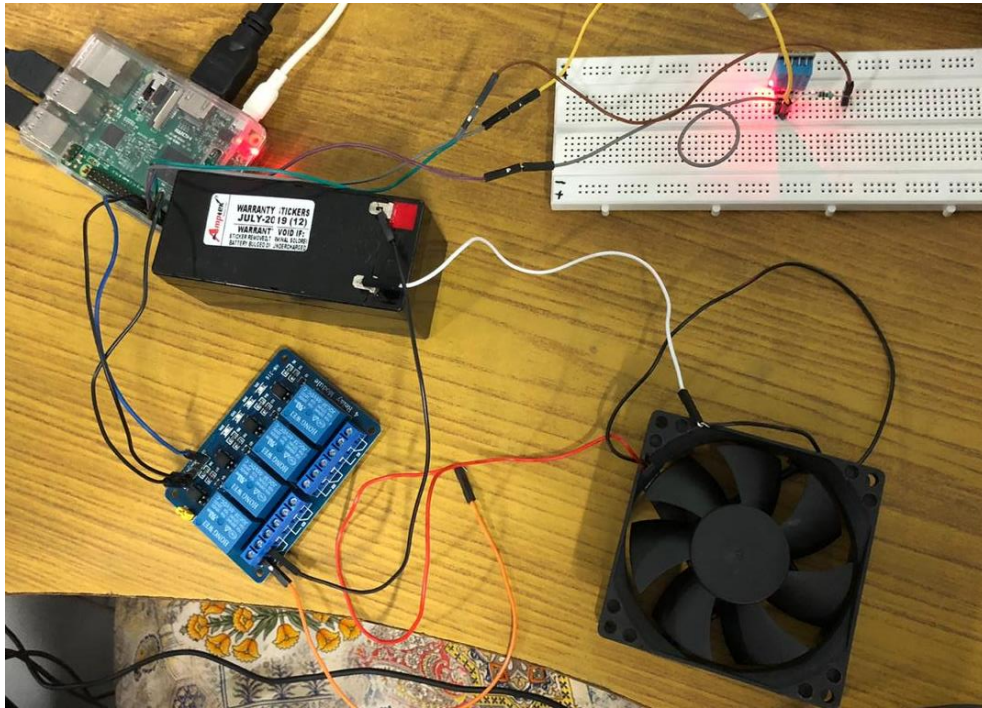


Figure 8.2: Fan in Stationary State

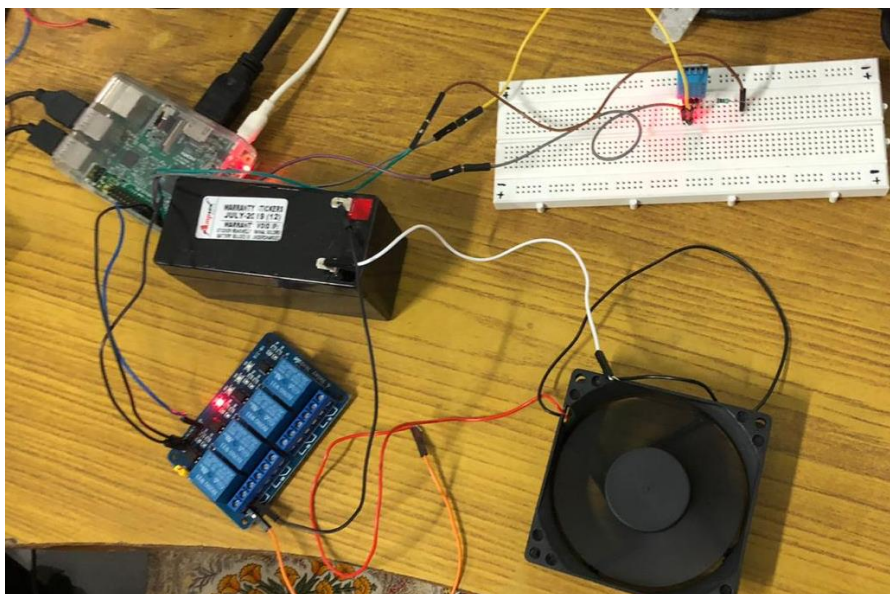


Figure 8.3: Fan in Running State