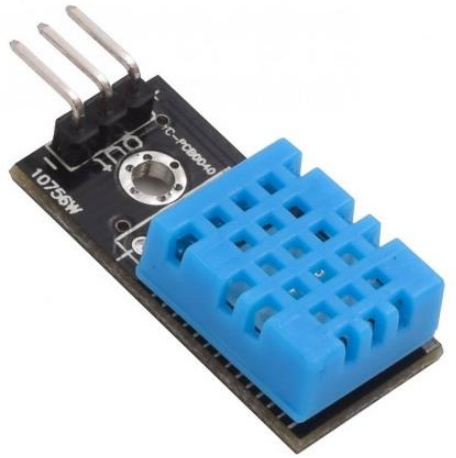
DHT11 SENSOR INTERFACE WITH ARDUINO

TEMPERATURE AND HUMIDITY FROM A DHT11 SENSOR

- DHT11 sensor measures and provides humidity and temperature values serially over a single wire.
- It can measure relative humidity in percentage (20 to 90% RH) and temperature in degree Celsius in the range of 0 to 50°C.
- It has 4 pins; one of which is used for data communication in serial form.
- Pulses of different T_{ON} and T_{OFF} are decoded as logic 1 or logic 0 or start pulse or end of a frame.



- The DHT11 measures *relative humidity*. The relative humidity is the amount of water vapor in air vs. the saturation point of water vapor in the air. At the saturation point, water vapor starts to condense and accumulate on surfaces forming dew.

```
#include <DHT.h>

#define DHTPIN 2

#define DHTTYPE DHT11
DHT dht(DHTPIN, DHTTYPE);
void setup() {
  Serial.begin(9600);
  dht.begin();
}
```

```
void loop() {
  delay(2000);
  float h = dht.readHumidity();
  float t = dht.readTemperature();
  float f = dht.readTemperature(true);
  if (isnan(h) || isnan(t) || isnan(f))
 {
    Serial.println(F("Failed to read from
DHT sensor!"));
    return;
  }
  Serial.print(F(" Humidity: "));
  Serial.print(h);
  Serial.print(F("%  Temperature: "));
  Serial.print(t);
  Serial.print(F("C "));
}
```