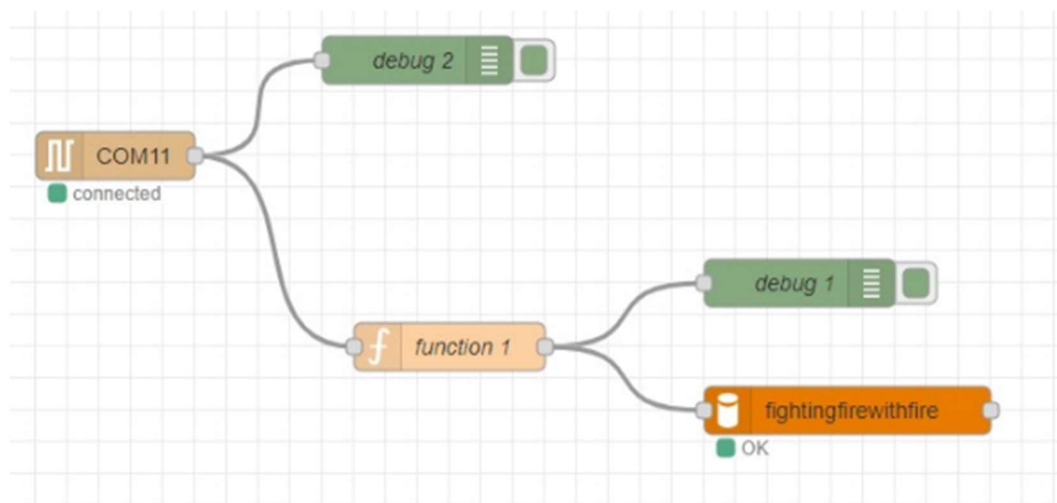


Explanation of Code and Transmission of Sensor Data

To send the data that the Arduino reads from the sensors to the database, the process is as follows:

First, we need to run the code in the Arduino IDE that reads the data collected by the sensors. To confirm the correct reading of the data, we can open the 'Serial monitor.' However, to send the data to be stored in the database, we must close the 'Serial monitor' in the Arduino IDE and execute the 'node-red' command in the Node.js Command prompt. Next, we open XAMPP and initiate the 'Apache' and 'mySql' modules.

At this point, the Node-Red localhost and the database are both active. Within Node-Red, we need to establish the following flow connections:



By configuring these connections, we link the Serial input (Arduino) to the 'fightingfirewithfire' database. To format the collected data into a message that can be sent to the database, we use the following code:

```
// convert the json string to a javascript object
const data = JSON.parse(msg.payload);

// extract each of the readings from the payload
const {SensorID, Latitude, Longitude, Humidity, Temperature, Co2Value } =
data;

// build our message
const message = {
  payload: [SensorID, Latitude, Longitude, Humidity, Temperature,
Co2Value],
  topic: 'INSERT INTO sensordata(SensorID, Latitude, Longitude,
Humidity, Temperature, Co2Value) VALUES (?, ?, ?, ?, ?, ?);'
}

//return
return message;
```

Explanation of Code and Transmission of Sensor Data

Afterward, we click 'Deploy' and navigate to the database's localhost page. There, we can refresh the page or click on our 'sensordata' table within the 'fightingfirewithfire' database, and we will observe the sensor data collected by the Arduino stored in the database.

Looking to the future, our next step will involve transferring the database to the cloud. This will enable us to transmit data from the Arduino to the database via WiFi, eliminating the need for a USB connection. Furthermore, by connecting multiple Arduinos to the database through a WiFi connection, we can monitor variations in temperature, humidity, and CO2 values in different areas, thanks to the coordinates of each sensor (latitude and longitude).