HOW TO GET DATA FROM SENSORS TO MYSQL DATABASE

DHT11
NODEMCU (ESP8266 + MICROCONTROL BOARD)
WE CAN PROGRAM THE NODEMCU USING ARDUINO IDE

DOWNLOAD THE LATEST ARDUINO IDE FROM arduino.cc AND INSTALL

open arduino ide

goto >file>preferences
Add url to additional boards manager
http://arduino.esp8266.com/stable/package_esp8266com_index.json
Restart arduino ide
Goto >tools>Board>Boards Manager
Download esp8266 boards
Restart arduino ide

Goto >tools>Board>select nodemcu 1.0
And com port
And programmer as “Arduino ISP”

Connect the nodemcu board
Upload a sample code like blink led program from examples of nodemuc
Goto>file>examples>esp8266>blink

Need to setup a database in server side system

Installing Mosquitto

MQTT is a machine-to-machine messaging protocol, designed to provide lightweight publish/subscribe communication to "Internet of Things" devices.

$ sudo apt-get install mosquitto mosquitto-clients
By default, linux will start the Mosquitto service after install.

Log in to your server a second time, so you have two terminals side-by-side.
In the new terminal, use `mosquitto_sub` *to subscribe to the test topic*

```
$ mosquitto_sub -h localhost -t test
```

`-h` is used to specify the hostname of the MQTT server, and `-t` is the topic name.
You'll see no output after hitting `ENTER` because `mosquitto_sub` is waiting for messages to arrive.

```
 mosquitto_pub -h localhost -t test -m "hello world"
```

Switch back to your other terminal and publish a message:
The options for `mosquitto_pub` are the same as `mosquitto_sub`, though this time we use the additional `-m` option to specify our message.
Hit `ENTER`, and you should see **hello world** pop up in the other terminal. You've sent your first MQTT message!

Install MySQL database:

MySQL is a popular database management system used for web and server applications

$ sudo apt-get install mysql-server

During the installation process, you will be prompted to set a password for the MySQL root user .

Choose a strong password and keep it in a safe place for future reference.

$ sudo mysql_secure_installation

You will be given the choice to change the MySQL root password, remove anonymous user accounts, disable root logins outside of localhost, and remove test databases. It is recommended that

you answer yes to these options. You can read more about the script in the MySQL Reference Manual.

Then start MySQL:

$ sudo service mysql start

to stop

$ sudo service mysql stop

start agian

How to use mysql :

Use MySQL

To log in to MySQL as the root user:

mysql -u root -p

When prompted, enter the root password you assigned when the `mysql_secure_installation` script was run.

You'll then be presented with the MySQL monitor prompt:

Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 1
Server version: 5.0.45 Source distribution

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql>

Create a New MySQL User and Database:

In the example below, `testdb` is the name of the database, `testuser` is the user, and `password` is the user's password.

Mysql> create database testdb;

Mysql> create user 'testuser'@'localhost' identified by 'password';
Mysql> grant all on testdb.* to 'testuser';

or

Mysql> create database testdb;

Mysql> grant all on testdb.* to 'testuser' identified by 'password';

Exit MySQL.

Mysql> exit;

Create a Sample Table

create table text(varchar device, varchar attribute, varchar value, varchar timestamp);

Install python
goto python official website and download python latest
uzip it
open terminal
./configure
make
make install

Install pip
$ sudo apt-get install python-pip python-dev build-essential
$ sudo pip install --upgrade pip

```
sudo pip install MySQL-python (used to link mysql database)
pip install paho-mqtt( used to link mqtt data)

(https://eclipse.org/paho/clients/python/)
```

porject:

connect the dht11 sensor to digital pin of nodemcu

Uplode nodemcu code to nodemcu board(by doing all required changes)

wifi ssid and password

mqtt link

And in server side system start masquito server

Check this

$mosquitto_sub -t 'outopic' >log.txt

By adding database details to main.py

Run runthiscode.py