

1. Set up MongoDB

Create a database called “ng-dashboard” or as you like

Create collections as the shown in the picture. Each collection stores data from one sensor.

Import two json files provided in the **test_data** folder into MongoDB using command below

mongoimport --db ng-dashboard --collection 3357.0.TL1 --file test_3357.json

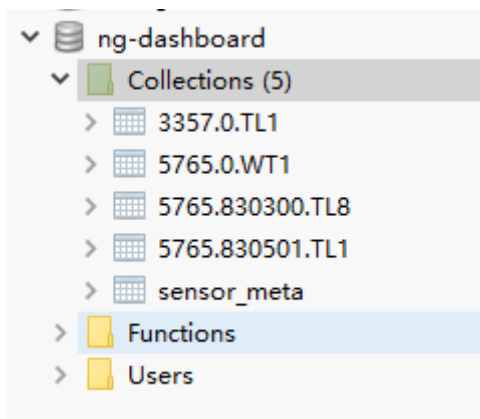


Figure 1. MongoDB Database Organization

▼ (1) 3357.0.TL1628-2016-08-19	{ 9 fields }	Object
_id	3357.0.TL1628-2016-08-19	String
00:00:00	0.0	Double
d	0	Int32
dt	2016-08-19	String
i	1628	Int32
l	3357	Int32
rev	4	String
t	TL	String
ts_utc	2018-05-20 01:23:52.146Z	Date
> (2) 3357.0.TL1628-2016-08-30	{ 9 fields }	Object
> (3) 3357.0.TL1628-2016-08-31	{ 9 fields }	Object
> (4) 3357.0.TL1628-2016-09-01	{ 9 fields }	Object
> (5) 3357.0.TL1628-2016-09-02	{ 9 fields }	Object
> (6) 3357.0.TL1628-2016-09-03	{ 9 fields }	Object
> (7) 3357.0.TL1628-2016-09-04	{ 9 fields }	Object
> (8) 3357.0.TL1628-2016-09-06	{ 9 fields }	Object
> (9) 3357.0.TL1628-2016-09-07	{ 9 fields }	Object
> (10) 3357.0.TL1628-2016-09-05	{ 9 fields }	Object
> (11) 3357.0.TL1628-2016-09-08	{ 9 fields }	Object
> (12) 3357.0.TL1628-2016-08-21	{ 9 fields }	Object
> (13) 3357.0.TL1628-2016-09-10	{ 9 fields }	Object
> (14) 3357.0.TL1628-2016-09-09	{ 9 fields }	Object
> (15) 3357.0.TL1628-2016-09-12	{ 9 fields }	Object
> (16) 3357.0.TL1628-2016-08-24	{ 9 fields }	Object
> (17) 3357.0.TL1628-2016-09-14	{ 9 fields }	Object
> (18) 3357.0.TL1628-2016-09-16	{ 9 fields }	Object
> (19) 3357.0.TL1628-2016-09-15	{ 9 fields }	Object
> (20) 3357.0.TL1628-2016-08-25	{ 9 fields }	Object
> (21) 3357.0.TL1628-2016-08-20	{ 9 fields }	Object
> (22) 3357.0.TL1628-2016-09-17	{ 9 fields }	Object
> (23) 3357.0.TL1628-2016-09-20	{ 9 fields }	Object
> (24) 3357.0.TL1628-2016-09-19	{ 9 fields }	Object

Figure 2. Collection ‘3357.0.TL1’

▼ (1) 3357.0.TL1	{ 9 fields }	Object
_id	3357.0.TL1	String
units	1	String
log_interval	1	Int32
name	Air Temperature	String
units_name	1628	String
source	3357	String
first	2016-08-19	String
last	2016-08-28	String
ts_utc	2018-05-20 01:23:52.146Z	Date
> (2) 5765.0.WT1	{ 9 fields }	Object
> (3) 5765.830501.TL1	{ 9 fields }	Object
> (4) 5765.830300.TL8	{ 9 fields }	Object

Figure 3. Collection 'sensor_meta'

2. Set up SQL Server

Restore the .bak file provided in the test_data folder.

3. Import the Java Spring file as a Maven project in the IntelliJ IDEA

4. Configure the 'application.properties' file in the Spring program as your own database user setting

```
spring.data.mongodb.host=localhost
spring.data.mongodb.port=27017
spring.data.mongodb.username=thesis
spring.data.mongodb.password=demo
spring.data.mongodb.database=ng-dashboard

spring.datasource.url=jdbc:sqlserver://localhost;databaseName=4490Z
spring.datasource.username=sa
spring.datasource.password=summer2020
spring.datasource.driverClassName=com.microsoft.sqlserver.jdbc.SQLServerDriver
spring.jpa.show-sql=true
```

5. Run the Maven project

6. Run the Angular program

Make sure you have installed npm, then run command: **npm install -g @angular/cli**

After Angular's CLI has been installed, go to the root directory of 'dashboard-new'. Open the terminal and run command: **npm install** (this will download the required dependencies)

Run '**ng serve**'

Then open 'localhost:4200', the dashboard should now work properly now.