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Bài tập về nhà

Yêu cầu :

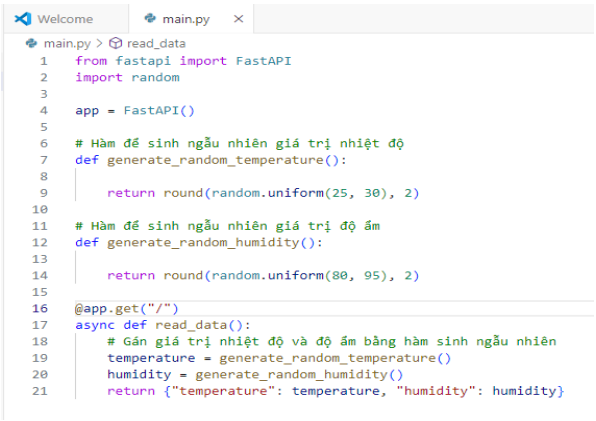
1. gen scripts sql: struct + data.
2. code py fastAPI
3. flow.json export từ node-red
4. full code project web (asp dot net) : html + js + css + aspx + aspx.cs (api): nêu dùng git trên vs2022 để upload.
5. pdf (save as word) : mô tả lại quá trình làm. nhớ chụp ảnh màn hình những bước quan trọng.

Qúa trình làm bài:

1. Thiết lập môi trường
   - Cài đặt fastapi :
     - Mở terminal thực hiện hai câu lệnh

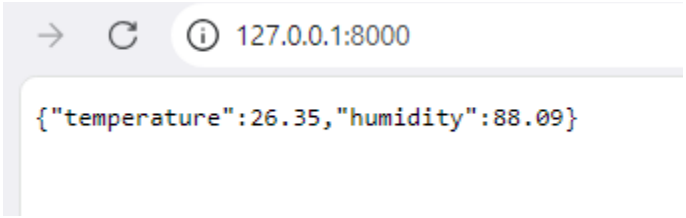
       pip install fastapi

       pip install uvicorn
     - Khởi chạy fastapi :



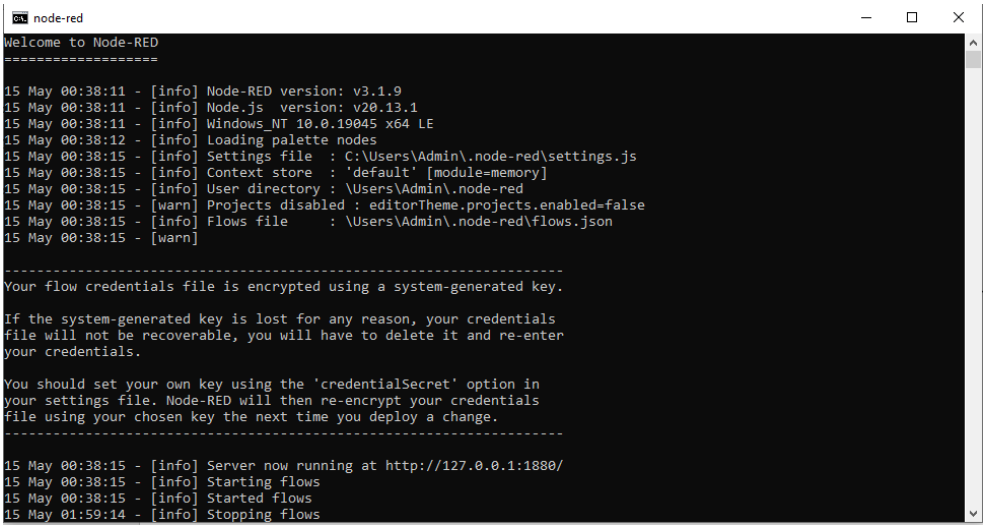

```
PS D:\btvn> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe
PS D:\btvn> uvicorn main:app
INFO:     Started server process [11412]
INFO:     Waiting for application startup.
INFO:     Application startup complete.
INFO:     Uvicorn running on http://127.0.0.1:8000 (Press CTRL+C to quit)
```

- Sau khi chạy sẽ trả về 1 chuỗi dạng json



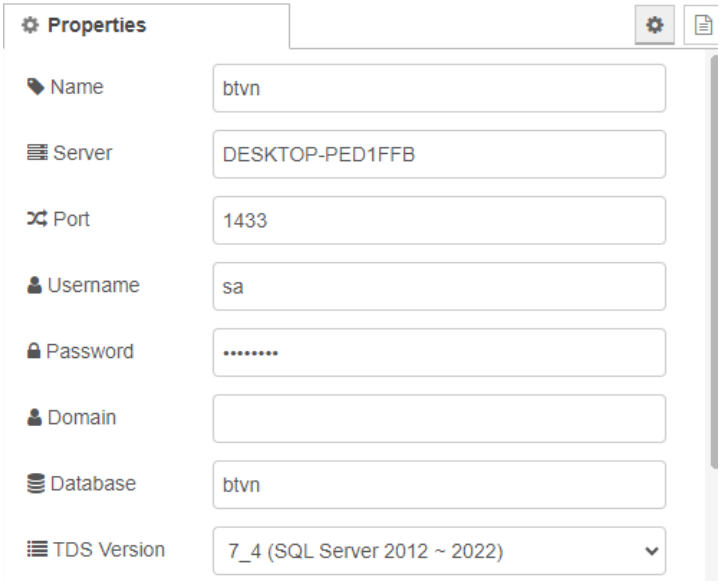

```
PS D:\btvn> uvicorn main:app
INFO:     Started server process [11412]
INFO:     Waiting for application startup.
INFO:     Application startup complete.
INFO:     Uvicorn running on http://127.0.0.1:8000 (Press CTRL+C to quit)
INFO:     127.0.0.1:54153 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54216 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54216 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54300 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54300 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54306 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54312 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54317 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54322 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54325 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54327 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54331 - "GET / HTTP/1.1" 200 OK
INFO:     127.0.0.1:54334 - "GET / HTTP/1.1" 200 OK
```

- Cài đặt node-red: cần tải nodejs trước sau đó mới cài đặt được node-red bằng câu lệnh
  npm install -g --unsafe-perm node-red

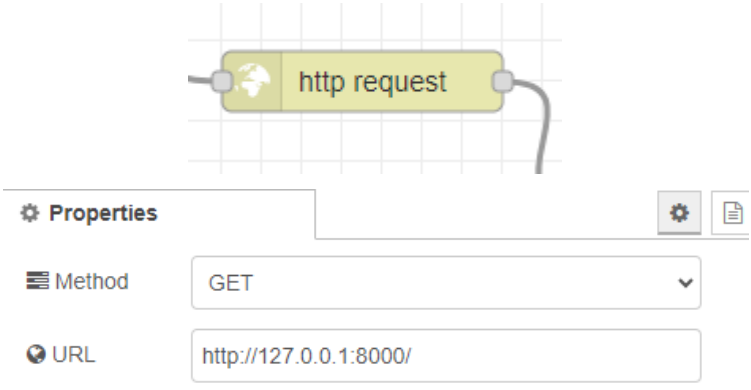


Sau đó dán đường link http//127.0.0.1:1880 để mở node-red.

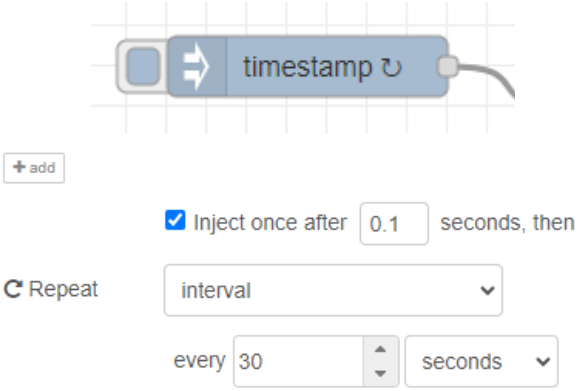
- Kết nối node-red với sql
  Cài đặt **node-red-contrib-mssql-plus** sau đó kết nối với sql



- Sử dụng node-red lấy dữ liệu:
  - Dán đường link vào http request



  - Set thời gian lấy dữ liệu và lưu vào database trong timestamp



- Sau đó viết funcion để lưu dữ liệu vào database


```
msg.payload = `insert into history(sid, value) values
(1,${msg.payload.temperature}); insert into history(sid, value)
values (2,${msg.payload.humidity})`
return msg;
```

- Dữ liệu được lưu vào database

	id	sid	value	time
16	20	2	93	2024-05-14 22:42:35.950
17	21	1	25	2024-05-14 22:43:06.100
18	22	2	85	2024-05-14 22:43:06.103
19	23	1	26	2024-05-14 22:43:36.730
20	24	2	90	2024-05-14 22:43:36.737
21	25	1	30	2024-05-14 22:44:06.110
22	26	2	88	2024-05-14 22:44:06.110
23	27	1	26	2024-05-14 22:44:36.063
24	28	2	88	2024-05-14 22:44:36.067
25	29	1	27	2024-05-14 22:45:06.043
26	30	2	80	2024-05-14 22:45:06.043
27	31	1	28	2024-05-14 22:45:36.053
28	32	2	88	2024-05-14 22:45:36.053
29	33	1	28	2024-05-14 22:46:06.110
30	34	2	82	2024-05-14 22:46:06.113
31	35	1	26	2024-05-14 22:46:36.090
32	36	2	85	2024-05-14 22:46:36.117
33	37	1	27	2024-05-14 22:47:06.090
34	38	2	81	2024-05-14 22:47:06.090
35	39	1	27	2024-05-14 22:47:36.117
36	40	2	85	2024-05-14 22:47:36.120
37	41	1	29	2024-05-14 22:48:06.140
38	42	2	87	2024-05-14 22:48:06.140
39	43	1	28	2024-05-14 22:48:36.150
40	44	2	87	2024-05-14 22:48:36.150
41	45	1	30	2024-05-14 22:49:06.147
42	46	2	89	2024-05-14 22:49:06.150