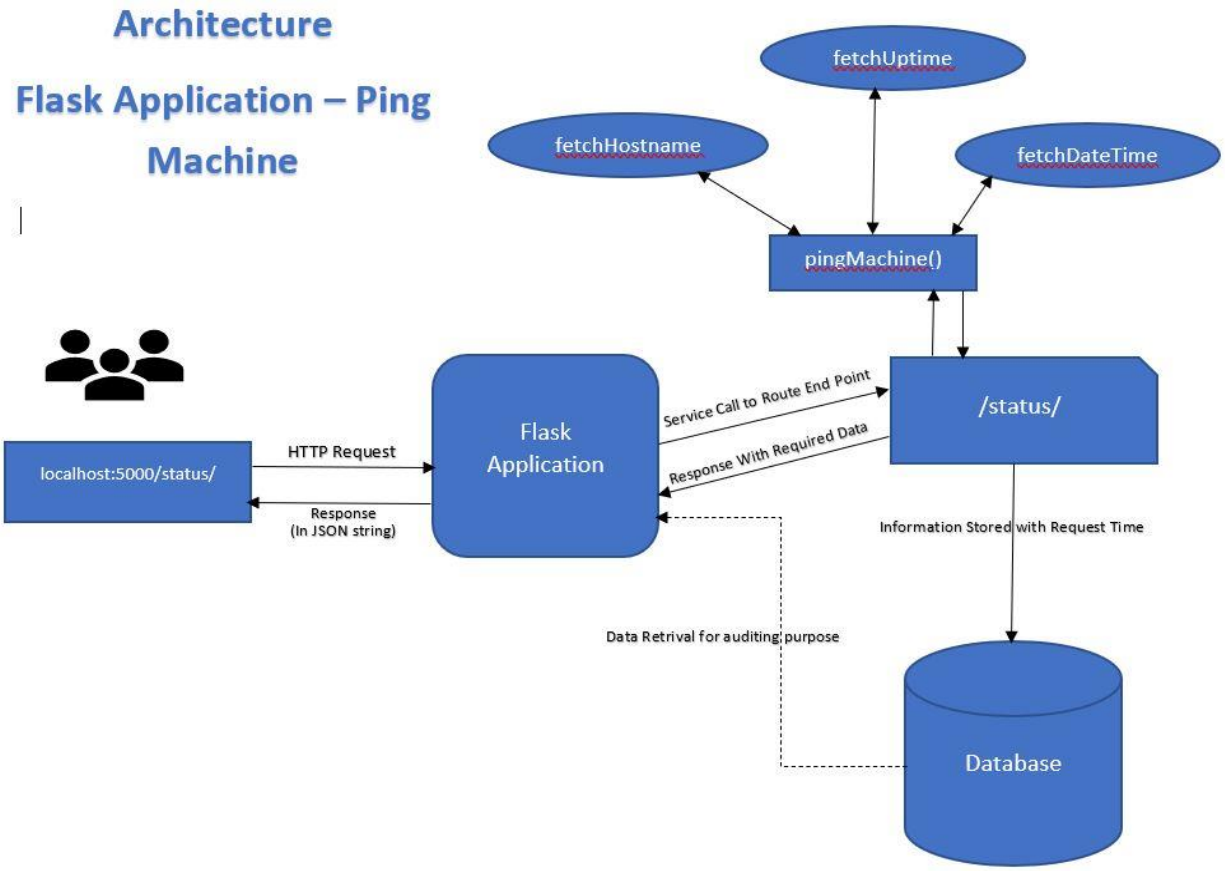
Flask Application – Ping Machines



This application simply sends the HTTP request to machines (say server) to fetch the information like hostname, uptime and current date/time. Here requester is making HTTP request and redirect that request to route (API) end point to get response. After getting the required data API end point send response to requestor in required format (for e.g. By converting python object into JSON string).

Below is the folder structure:

--- src

-- requestor.py

-- serverSide.py

--- testing

-- test.py

--- lawPilotsDB_virtual.db

--- requirements.txt

- **requestor.py** file contains the code that creates the HTTP request which redirect to API end point(in our case http://127.0.0.1:5000/status/), also logic is written to handle the response and show in appropriate format.
- **serverSide.py** is the actual flask application where the flask application is initialized. Then function is written which will be executed when above mention API route hit with the HTTP request. Also, logic to store data in data base is also written so in future data can be retrieve for auditing purpose.
- **test.py** contains the basic simple 3 test cases which check 1. Whether response code is 200 or not 2. Content type is text/html or not and 3. Checks some content is present or not.
- **lawPilotsDB_virtual.db** stores the data with request made date time for further future auditing purpose.
- **requirements.txt** contains all the necessary libraries with versions which required to run this flask application.

How it works?

- User will make HTTP request using requests library from python to specified route API end point which is http://127.0.0.1:5000/status/. This request lands to the flask application.
- After landing the request, flask application redirect that request to specific function for which requested route is associated (here /status/). /status/ route is associated to function create_status(). After hitting this function, all the statements and operations are getting executed in order to fulfil the request.
- After all necessary operations gets executed data is collected and it can be stores in any python object. Here I stored that in python dict object.
- To send response we have to send response in JSON string or format, hence using json.dumps() we can convert the python object into json string and send to the requestor as the response for request.

- Once response is arrived at the requestor end, we can extract the json string and reformat any way we want. In this application I just print the information in simple plain text.
- Before sending response all the data and request data time is stored in sqlite DB so that data can be used in future for auditing purpose.

How to RUN the flask application?

- First of all, install the requirements.txt file which install all necessary libraries using following command.

  $ pip install -r requirements.txt
- Once install the requirements.txt, go the *src* folder via terminal or CMD. After that type below command which starts the server or service,

  $ python serverSide.py

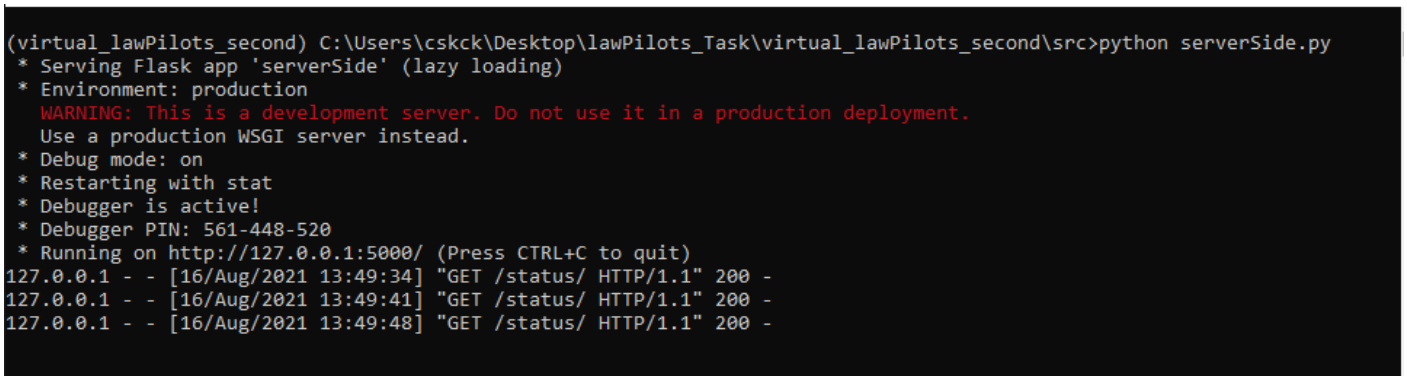
  This will start the service. Now our service is up and running we can make he HTTP request. Below is the image looks like after server/service is getting started.

- Now its time to send request. For this I made driver code where using requests library we can create HTTP request that send to API end point to get response. For this in *src* folder we need fire below command in second terminal or CMD.

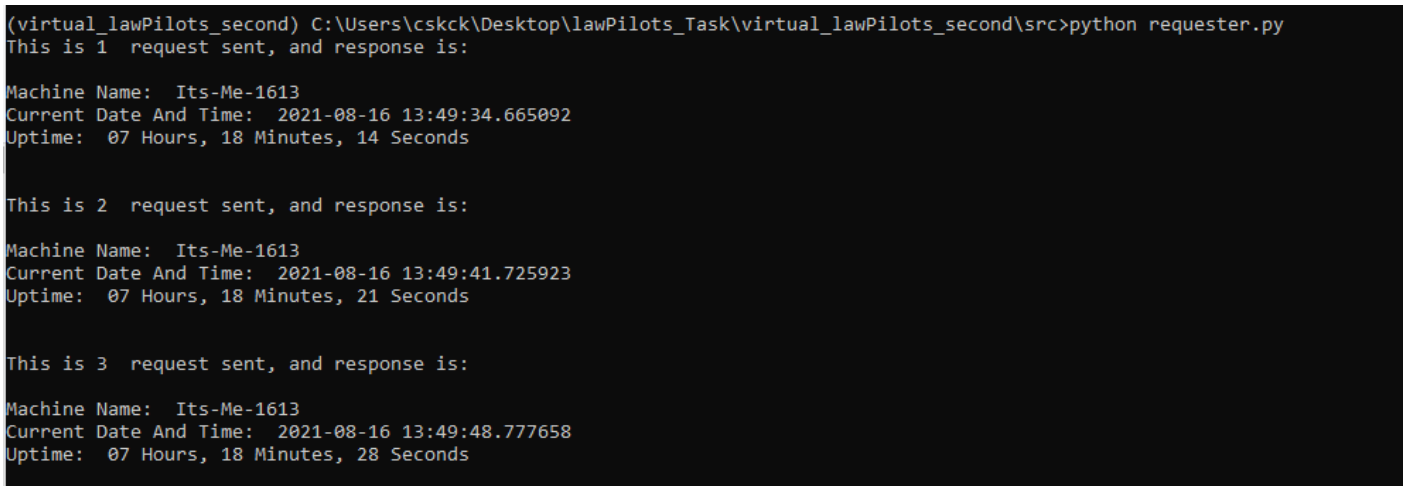
  $ python requester.py

Below are images where we can see server responds with success code 200 with HTTP response and at requestor side response is received and display in proper format.

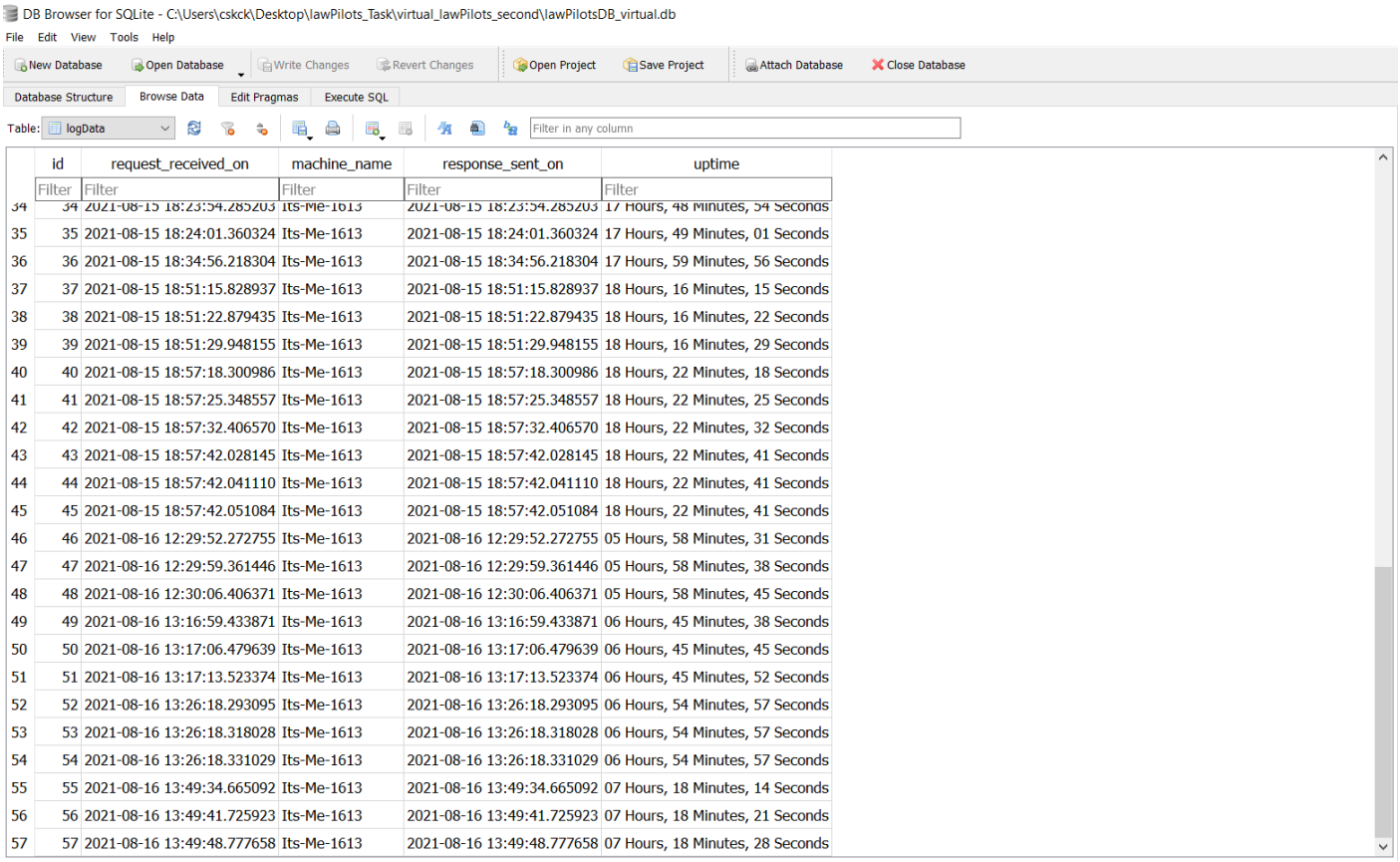
Server Side:



Requestor Side:



When sending the data, that data is also stored in sqlite DB. Below is image where we can see how data is stored in sqlite DB.



	id	request_received_on	machine_name	response_sent_on	uptime
	Filter	Filter	Filter	Filter	Filter
34	34	2021-08-15 18:23:54.285203	Its-Me-1613	2021-08-15 18:23:54.285203	17 Hours, 48 Minutes, 54 Seconds
35	35	2021-08-15 18:24:01.360324	Its-Me-1613	2021-08-15 18:24:01.360324	17 Hours, 49 Minutes, 01 Seconds
36	36	2021-08-15 18:34:56.218304	Its-Me-1613	2021-08-15 18:34:56.218304	17 Hours, 59 Minutes, 56 Seconds
37	37	2021-08-15 18:51:15.828937	Its-Me-1613	2021-08-15 18:51:15.828937	18 Hours, 16 Minutes, 15 Seconds
38	38	2021-08-15 18:51:22.879435	Its-Me-1613	2021-08-15 18:51:22.879435	18 Hours, 16 Minutes, 22 Seconds
39	39	2021-08-15 18:51:29.948155	Its-Me-1613	2021-08-15 18:51:29.948155	18 Hours, 16 Minutes, 29 Seconds
40	40	2021-08-15 18:57:18.300986	Its-Me-1613	2021-08-15 18:57:18.300986	18 Hours, 22 Minutes, 18 Seconds
41	41	2021-08-15 18:57:25.348557	Its-Me-1613	2021-08-15 18:57:25.348557	18 Hours, 22 Minutes, 25 Seconds
42	42	2021-08-15 18:57:32.406570	Its-Me-1613	2021-08-15 18:57:32.406570	18 Hours, 22 Minutes, 32 Seconds
43	43	2021-08-15 18:57:42.028145	Its-Me-1613	2021-08-15 18:57:42.028145	18 Hours, 22 Minutes, 41 Seconds
44	44	2021-08-15 18:57:42.041110	Its-Me-1613	2021-08-15 18:57:42.041110	18 Hours, 22 Minutes, 41 Seconds
45	45	2021-08-15 18:57:42.051084	Its-Me-1613	2021-08-15 18:57:42.051084	18 Hours, 22 Minutes, 41 Seconds
46	46	2021-08-16 12:29:52.272755	Its-Me-1613	2021-08-16 12:29:52.272755	05 Hours, 58 Minutes, 31 Seconds
47	47	2021-08-16 12:29:59.361446	Its-Me-1613	2021-08-16 12:29:59.361446	05 Hours, 58 Minutes, 38 Seconds
48	48	2021-08-16 12:30:06.406371	Its-Me-1613	2021-08-16 12:30:06.406371	05 Hours, 58 Minutes, 45 Seconds
49	49	2021-08-16 13:16:59.433871	Its-Me-1613	2021-08-16 13:16:59.433871	06 Hours, 45 Minutes, 38 Seconds
50	50	2021-08-16 13:17:06.479639	Its-Me-1613	2021-08-16 13:17:06.479639	06 Hours, 45 Minutes, 45 Seconds
51	51	2021-08-16 13:17:13.523374	Its-Me-1613	2021-08-16 13:17:13.523374	06 Hours, 45 Minutes, 52 Seconds
52	52	2021-08-16 13:26:18.293095	Its-Me-1613	2021-08-16 13:26:18.293095	06 Hours, 54 Minutes, 57 Seconds
53	53	2021-08-16 13:26:18.318028	Its-Me-1613	2021-08-16 13:26:18.318028	06 Hours, 54 Minutes, 57 Seconds
54	54	2021-08-16 13:26:18.331029	Its-Me-1613	2021-08-16 13:26:18.331029	06 Hours, 54 Minutes, 57 Seconds
55	55	2021-08-16 13:49:34.665092	Its-Me-1613	2021-08-16 13:49:34.665092	07 Hours, 18 Minutes, 14 Seconds
56	56	2021-08-16 13:49:41.725923	Its-Me-1613	2021-08-16 13:49:41.725923	07 Hours, 18 Minutes, 21 Seconds
57	57	2021-08-16 13:49:48.777658	Its-Me-1613	2021-08-16 13:49:48.777658	07 Hours, 18 Minutes, 28 Seconds