

Coding Test – IoT Application Engineer/Developer

Given 3 days to complete the test from the email is sent and confirmed by the applicant. Kindly submit the source codes and the documentation in a zip file with the name: “IoT Application Developer Tech Test – Applicant Name”.

Coding Test

Develop 3 applications in any programming language (JavaScript/Python/Go/C/C++/C#/Java), each for the following functionalities:

1. Salary Conversion

- Fetch data from <http://jsonplaceholder.typicode.com/users>
- Join the fetched data with the salary data from the JSON file by using the id
- Add one field to represent salary in USD (salary in the JSON file is in IDR) using currency converter (such as <https://free.currencyconverterapi.com>). Please be efficient with the resources by not using a GET request at the endpoint after every conversion
- The Outputs from the endpoint should be: id, name, username, email, address, phone, salary in IDR, and salary in USD

The output will look similar to the following screenshot.

ID	Name	Username	Email	Address	phone	salary in IDR	salary in USD
1	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3874	1-770-736-8031 x56442	15,000	1
2	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3875	1-770-736-8031 x56443	15,000	1
3	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3876	1-770-736-8031 x56444	15,000	1
4	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3877	1-770-736-8031 x56445	15,000	1
5	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3878	1-770-736-8031 x56446	15,000	1
6	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3879	1-770-736-8031 x56447	15,000	1
7	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3880	1-770-736-8031 x56448	15,000	1
8	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3881	1-770-736-8031 x56449	15,000	1
9	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3882	1-770-736-8031 x56450	15,000	1
10	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3883	1-770-736-8031 x56451	15,000	1
11	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3884	1-770-736-8031 x56452	15,000	1
12	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3885	1-770-736-8031 x56453	15,000	1
13	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3886	1-770-736-8031 x56454	15,000	1
14	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3887	1-770-736-8031 x56455	15,000	1
15	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3888	1-770-736-8031 x56456	15,000	1
16	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3889	1-770-736-8031 x56457	15,000	1
17	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3890	1-770-736-8031 x56458	15,000	1
18	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3891	1-770-736-8031 x56459	15,000	1
19	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3892	1-770-736-8031 x56460	15,000	1
20	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3893	1-770-736-8031 x56461	15,000	1
21	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3894	1-770-736-8031 x56462	15,000	1
22	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3895	1-770-736-8031 x56463	15,000	1
23	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3896	1-770-736-8031 x56464	15,000	1
24	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3897	1-770-736-8031 x56465	15,000	1
25	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3898	1-770-736-8031 x56466	15,000	1
26	Leanne Graham	Bret	Sincere@april.biz	Kulas Light, Apt. 556, Gwenborough, 92998-3899	1-770-736-8031 x56467	15,000	1

2. Sensors Aggregation

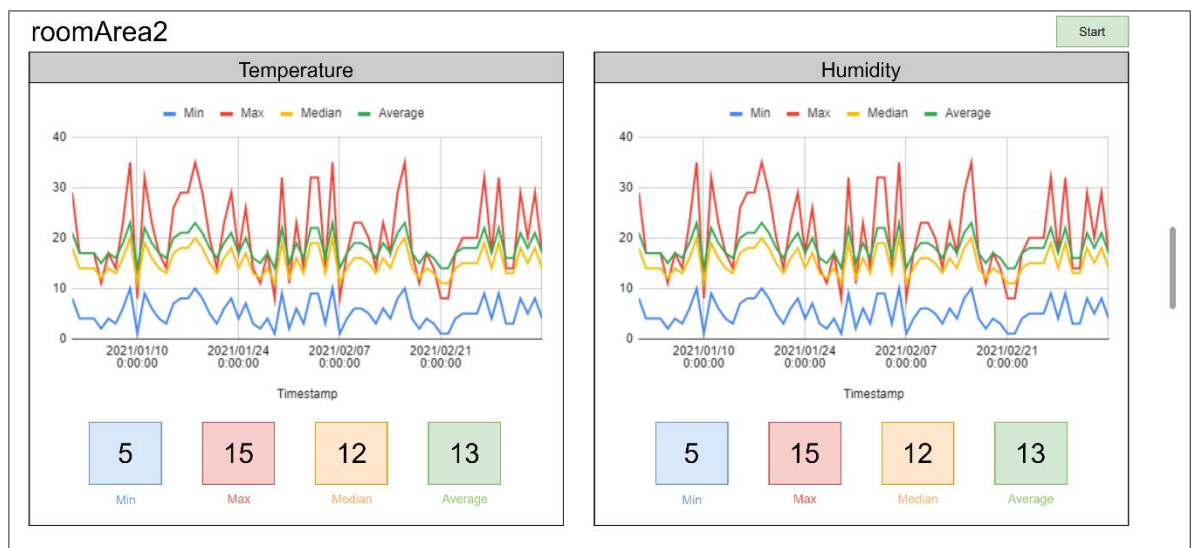
- Group sensor data from the JSON file by room and day
- The outputs of the endpoint should be: min, max, median, and avg from sensors' values (temperature, humidity)

3. Sensors Aggregation Simulation

- Generate simulated random values with a period of 2 seconds and store the simulation data to a JSON file similar to the point (2) JSON file
- The User can "Start" and "Stop" the simulation program
- When the user clicks "Start", it will run the simulation and store the simulation data to the JSON file, and the frontend should show real-time charts (the charts should be updated automatically)
- When the user clicks "Stop", it will stop the simulation and stop storing the simulation data to the JSON file (the charts will stop updating)
- Group the sensor data by room and day
- Outputs of the endpoint should be: min, max, median, and avg from sensors' values (temperature, humidity)

The outputs will look similar to the following wireframes.

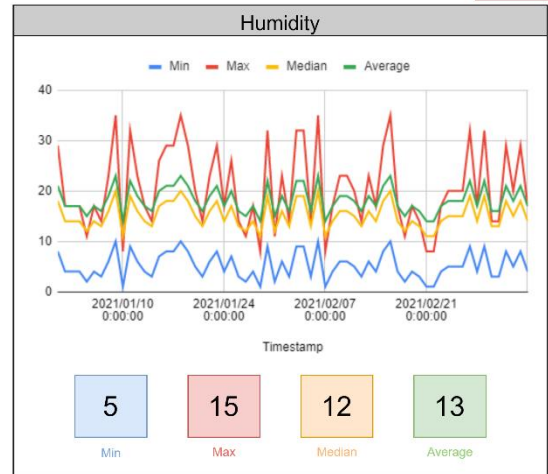
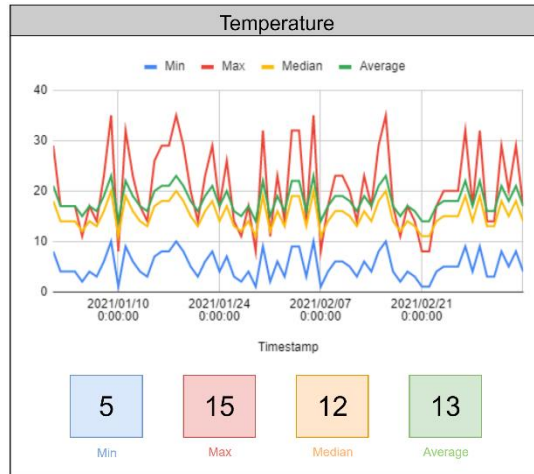
Stopped.



Started.

roomArea2

Stop



Kindly provide the how-to-run of the program in the documentation

The test result will be evaluated based on the following aspects:

1. Unit testing
2. Modules structure
3. Quality of code

Kindly submit the test to the email in a zip file or provide us a Git link.