In [12]:

```
import requests
import pandas as pd
import json
from datetime import datetime
```

In [83]:

```
sensordata=[]
sensor = pd.read_json('D:\Vito\Work Prep\CADIT\sensor_data.json')
for i in range(1440):
    sensorid = sensor['array'][i]['id']
    timestamp = sensor['array'][i]['timestamp']/1000
    timestamp = datetime.fromtimestamp(timestamp).strftime('%d-%m-%y')
    roomArea = sensor['array'][i]['roomArea']
    temperature = sensor['array'][i]['temperature']
    humidity = sensor['array'][i]['humidity']
    sensordata.append([sensorid, timestamp, roomArea, temperature, humidity])
sensortable = pd.DataFrame(sensordata)
sensortable.columns = ['id','timestamp', 'roomArea', 'temperature', 'humidity']
```

Find unique value first

In [84]:

```
sensortable.roomArea.unique()
```

Out[84]:

```
array(['roomArea1', 'roomArea2', 'roomArea3'], dtype=object)
```

In [87]:

```
sensortable["timestamp"].unique()
```

Out[87]:

```
array(['02-07-20', '03-07-20', '04-07-20', '05-07-20', '06-07-20',
       '07-07-20', '08-07-20', '09-07-20', '10-07-20', '11-07-20',
       '12-07-20'], dtype=object)
```

Continue to aggregate

In [93]:

```
sensoragg = sensortable.groupby(['roomArea','timestamp']).agg({'temperature':['min', 'max','median','mean'],'humidity':['min', 'max','median','mean']})
```

In [94]:

```
sensoragg
```

Out[94]:

		temperature				humidity		
		min	max	median	mean	min	max	m
roomArea	timestamp							
roomArea1	02-07-20	17.174949	24.993609	20.398751	20.484032	87.164583	96.764061	92
	03-07-20	17.134982	26.673704	21.216447	21.757527	87.113511	96.755887	92
	04-07-20	17.005340	26.907201	21.537181	21.752663	87.175241	96.626971	90
	05-07-20	17.051165	26.893966	21.779096	22.148114	87.397639	96.919821	92
	06-07-20	17.115379	26.693667	21.982478	22.028745	87.380310	96.999543	91
	07-07-20	17.412652	26.061930	21.476036	21.687596	87.233410	96.342538	93
	08-07-20	17.218585	26.966150	21.180495	21.450649	87.338590	96.859104	91
	09-07-20	17.328260	26.933809	22.692213	22.415660	87.363798	96.755762	94
	10-07-20	17.116608	26.980360	21.030591	21.605050	87.128247	96.817265	92
	11-07-20	17.365022	26.742453	21.999351	22.157861	87.154560	96.941817	92
	12-07-20	17.131516	26.812108	23.301154	22.668118	87.032932	96.796783	91
roomArea2	02-07-20	17.257017	26.729741	21.277066	21.632895	87.425267	96.949686	92
	03-07-20	17.306579	26.378676	21.228696	21.505185	87.007960	96.837062	92
	04-07-20	17.108971	26.614564	21.349998	22.136718	87.039648	96.628072	91
	05-07-20	17.133661	26.652219	21.052172	21.316407	87.049927	96.609589	92
	06-07-20	17.128593	26.794736	22.387368	22.290365	87.153071	96.946636	91
	07-07-20	17.226528	26.824174	23.040209	22.890910	87.169660	96.787666	91
	08-07-20	17.085249	26.792468	22.097754	21.625330	87.242140	96.692819	91
	09-07-20	17.353111	26.999287	22.653760	22.553706	87.042187	96.752613	91
	10-07-20	17.055808	26.948742	21.928658	21.872476	87.175384	96.937016	91
	11-07-20	17.033950	26.941793	23.521213	22.870383	87.032323	96.478993	93
	12-07-20	17.515441	26.111502	20.519147	21.238934	87.095928	96.696650	89
roomArea3	02-07-20	17.573081	25.933317	23.575467	22.516379	87.253083	96.796979	93
	03-07-20	17.126253	26.333581	21.245536	21.302830	87.105349	96.694474	91
	04-07-20	17.209985	26.786283	22.510920	22.230208	87.205407	96.920165	91
	05-07-20	17.219402	26.842787	21.029846	21.357937	87.266470	96.885803	91
	06-07-20	17.141040	26.979058	21.351162	21.876879	87.108905	96.707755	92
	07-07-20	17.439981	26.950621	21.204163	21.819368	87.026001	96.921077	92
	08-07-20	17.072999	26.854977	22.429570	22.177593	87.223936	96.591245	91
	09-07-20	17.069630	26.953812	22.712133	22.144387	87.192079	96.986598	92
	10-07-20	17.841353	26.951764	22.424772	21.893069	87.075597	96.716429	91
	11-07-20	17.411602	26.804511	21.865134	22.271355	87.086575	96.588537	91
	12-07-20	17.536775	26.981793	22.609928	21.954576	87.385461	96.909171	91