

1. Скрин трьох топиків з команди [print(topic) for topic in admin_client.list_topics() if "my_name" in topic];

```
(.venv) matvieienko@DESKTOP-T2SJUS5:~/goit-de-hw-05$  
Topics created successfully.  
matvieienko humidity_alerts  
matvieienko building_sensors  
matvieienko temperature_alerts  
(.venv) matvieienko@DESKTOP-T2SJUS5:~/goit-de-hw-05$
```

2. Скрини генерації даних сенсорів та відправки даних в building_sensors з демонстрацією двох (або більше) одночасних роботи двох запусків програми (два процеси запущені в один час з різними sensor_id);

```
(.venv) matvieienko@DESKTOP-T2SJUS5:~/goit-de-hw-05 /home/matvieienko/goit-de-hw-05/.venv/bin/python /home/matvieienko/goit-de-hw-05/sensor_producer.py  
Start sending data for sensor_id=73851 to topic 'matvieienko building_sensors'  
[0] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:39:53', 'temperature': 35, 'humidity': 17}  
[1] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:39:55', 'temperature': 38, 'humidity': 76}  
[2] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:39:57', 'temperature': 28, 'humidity': 18}  
[3] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:39:59', 'temperature': 33, 'humidity': 44}  
[4] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:01', 'temperature': 40, 'humidity': 78}  
[5] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:03', 'temperature': 43, 'humidity': 83}  
[6] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:06', 'temperature': 29, 'humidity': 57}  
[7] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:08', 'temperature': 37, 'humidity': 34}  
[8] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:10', 'temperature': 41, 'humidity': 80}  
[9] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:12', 'temperature': 42, 'humidity': 28}  
[10] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:15', 'temperature': 35, 'humidity': 54}  
[11] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:17', 'temperature': 37, 'humidity': 69}  
[12] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:19', 'temperature': 45, 'humidity': 76}  
[13] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:21', 'temperature': 38, 'humidity': 85}  
[14] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:23', 'temperature': 34, 'humidity': 60}  
[15] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:25', 'temperature': 31, 'humidity': 27}  
[16] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:27', 'temperature': 42, 'humidity': 43}  
[17] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:29', 'temperature': 45, 'humidity': 40}  
[18] Sent message: {'sensor_id': 73851, 'timestamp': '2025-11-16 22:40:31', 'temperature': 34, 'humidity': 41}
```

```
(.venv) matvieienko@DESKTOP-T2SJUS5:~/goit-de-hw-05 /home/matvieienko/goit-de-hw-05/.venv/bin/python /home/matvieienko/goit-de-hw-05/sensor_producer.py  
Start sending data for sensor_id=98473 to topic 'matvieienko building_sensors'  
[0] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:39:47', 'temperature': 36, 'humidity': 29}  
[1] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:39:49', 'temperature': 26, 'humidity': 38}  
[2] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:39:51', 'temperature': 27, 'humidity': 68}  
[3] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:39:53', 'temperature': 27, 'humidity': 75}  
[4] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:39:55', 'temperature': 44, 'humidity': 53}  
[5] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:39:58', 'temperature': 29, 'humidity': 16}  
[6] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:00', 'temperature': 41, 'humidity': 25}  
[7] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:02', 'temperature': 36, 'humidity': 76}  
[8] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:04', 'temperature': 30, 'humidity': 84}  
[9] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:06', 'temperature': 41, 'humidity': 16}  
[10] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:08', 'temperature': 45, 'humidity': 75}  
[11] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:10', 'temperature': 41, 'humidity': 18}  
[12] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:12', 'temperature': 44, 'humidity': 46}  
[13] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:15', 'temperature': 25, 'humidity': 54}  
[14] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:18', 'temperature': 30, 'humidity': 29}  
[15] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:20', 'temperature': 36, 'humidity': 53}  
[16] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:23', 'temperature': 37, 'humidity': 24}  
[17] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:24', 'temperature': 40, 'humidity': 80}  
[18] Sent message: {'sensor_id': 98473, 'timestamp': '2025-11-16 22:40:26', 'temperature': 29, 'humidity': 21}
```

3. Скрин отримання даних та фільтрації саме тих даних, що будуть далі використані, відфільтровані та послані у відповідні топіки;

```
(.venv) matvieienko@DESKTOP-T2SJUS5:~/goit-de-hw-05 /home/matvieienko/goit-de-hw-05/.venv/bin/python /home/matvieienko/goit-de-hw-05/sensor_processor.py  
Subscribed to 'matvieienko building_sensors'  
Temperature alerts topic: 'matvieienko temperature_alerts'  
Humidity alerts topic: 'matvieienko humidity_alerts'  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:23', 'temperature': 40, 'humidity': 26}  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:25', 'temperature': 42, 'humidity': 16}  
Sent temperature alert: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:25', 'temperature': 42, 'humidity': 16, 'alert_type': 'temperature', 'message': 'Temperature 42°C is above 40°C'}  
Sent humidity alert: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:25', 'humidity': 16, 'alert_type': 'humidity', 'message': 'Humidity 16% is below 20%'}  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:27', 'temperature': 41, 'humidity': 39}  
Sent temperature alert: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:27', 'temperature': 41, 'humidity': 39, 'alert_type': 'temperature', 'message': 'Temperature 41°C is above 40°C'}  
Received from matvieienko building_sensors: {'sensor_id': 28143, 'timestamp': '2025-11-16 23:27:27', 'temperature': 41, 'humidity': 46}  
Sent temperature alert: {'sensor_id': 28143, 'timestamp': '2025-11-16 23:27:27', 'temperature': 41, 'humidity': 46, 'alert_type': 'temperature', 'message': 'Temperature 41°C is above 40°C'}  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:29', 'temperature': 42, 'humidity': 36}  
Sent temperature alert: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:29', 'temperature': 42, 'humidity': 36, 'alert_type': 'temperature', 'message': 'Temperature 42°C is above 40°C'}  
Received from matvieienko building_sensors: {'sensor_id': 28143, 'timestamp': '2025-11-16 23:27:30', 'temperature': 26, 'humidity': 74}  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:32', 'temperature': 43, 'humidity': 44}  
Sent temperature alert: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:32', 'temperature': 43, 'humidity': 44, 'alert_type': 'temperature', 'message': 'Temperature 43°C is above 40°C'}  
Received from matvieienko building_sensors: {'sensor_id': 28143, 'timestamp': '2025-11-16 23:27:32', 'temperature': 39, 'humidity': 77}  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:34', 'temperature': 37, 'humidity': 41}  
Received from matvieienko building_sensors: {'sensor_id': 28143, 'timestamp': '2025-11-16 23:27:35', 'temperature': 35, 'humidity': 65}  
Received from matvieienko building_sensors: {'sensor_id': 95266, 'timestamp': '2025-11-16 23:27:37', 'temperature': 25, 'humidity': 53}
```

4. Скрини з результатом запису відфільтрованих даних

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
(.venv) matvielienko@DESKTOP-125JUS5:~/goit-de-hw-05$ /home/matvielienko/goit-de-hw-05/.venv/bin/python /home/matvielienko/goit-de-hw-05/sensor_producer.py
[9] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:16:59', 'temperature': 25, 'humidity': 84}
[10] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:01', 'temperature': 30, 'humidity': 51}
[11] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:04', 'temperature': 41, 'humidity': 42}
[12] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:06', 'temperature': 41, 'humidity': 47}
[13] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:08', 'temperature': 40, 'humidity': 51}
[14] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:10', 'temperature': 42, 'humidity': 62}
[15] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:12', 'temperature': 25, 'humidity': 24}
[16] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:14', 'temperature': 27, 'humidity': 77}
[17] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:16', 'temperature': 39, 'humidity': 73}
[18] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 43, 'humidity': 17}
[19] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:20', 'temperature': 36, 'humidity': 29}
[20] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:23', 'temperature': 31, 'humidity': 81}
[21] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:25', 'temperature': 34, 'humidity': 22}
[22] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:27', 'temperature': 25, 'humidity': 29}
[23] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:29', 'temperature': 45, 'humidity': 73}
[24] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:31', 'temperature': 34, 'humidity': 15}
[25] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:33', 'temperature': 32, 'humidity': 25}
[26] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:35', 'temperature': 31, 'humidity': 80}
[27] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:38', 'temperature': 31, 'humidity': 16}
[28] Sent message: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:40', 'temperature': 29, 'humidity': 74}
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```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
(.venv) matvielienko@DESKTOP-125JUS5:~/goit-de-hw-05$ /home/matvielienko/goit-de-hw-05/.venv/bin/python /home/matvielienko/goit-de-hw-05/sensor_alert.py
Sent temperature alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 42, 'humidity': 62, 'alert_type': 'temperature', 'message': 'Temperature 42°C is above 40°C'}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:12', 'temperature': 25, 'humidity': 24}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:14', 'temperature': 27, 'humidity': 77}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:16', 'temperature': 39, 'humidity': 73}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 43, 'humidity': 17}
Sent temperature alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 43, 'humidity': 17, 'alert_type': 'temperature', 'message': 'Temperature 43°C is above 40°C'}
Sent humidity alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 43, 'humidity': 17, 'alert_type': 'humidity', 'message': 'Humidity 17% is below 20%'}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:20', 'temperature': 36, 'humidity': 29}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:23', 'temperature': 31, 'humidity': 81}
Sent humidity alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:23', 'temperature': 31, 'humidity': 81, 'alert_type': 'humidity', 'message': 'Humidity 81% is above 80%'}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:27', 'temperature': 25, 'humidity': 29}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:29', 'temperature': 45, 'humidity': 73}
Sent temperature alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:29', 'temperature': 45, 'humidity': 73, 'alert_type': 'temperature', 'message': 'Temperature 45°C is above 40°C'}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:31', 'temperature': 34, 'humidity': 15}
Sent humidity alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:31', 'temperature': 34, 'humidity': 15, 'alert_type': 'humidity', 'message': 'Humidity 15% is below 20%'}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:33', 'temperature': 32, 'humidity': 25}
Received from matvielienko_building_sensors: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:35', 'temperature': 31, 'humidity': 80}
Sent humidity alert: {'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:38', 'temperature': 31, 'humidity': 16, 'alert_type': 'humidity', 'message': 'Humidity 16% is below 20%'}
Ln 10, Col 33 (10 selected) Spaces 4 UTF-8 LF Python Finish Setup 3.10.12 (venv)
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```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
(.venv) matvielienko@DESKTOP-125JUS5:~/goit-de-hw-05$ /home/matvielienko/goit-de-hw-05/.venv/bin/python /home/matvielienko/goit-de-hw-05/alert_message.py
[ALERT from matvielienko_temperature_alerts]
{'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:06', 'temperature': 41, 'humidity': 47, 'alert_type': 'temperature', 'message': 'Temperature 41°C is above 40°C'}
[ALERT from matvielienko_temperature_alerts]
{'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:10', 'temperature': 42, 'humidity': 62, 'alert_type': 'temperature', 'message': 'Temperature 42°C is above 40°C'}
[ALERT from matvielienko_temperature_alerts]
{'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 43, 'humidity': 17, 'alert_type': 'temperature', 'message': 'Temperature 43°C is above 40°C'}
[ALERT from matvielienko_humidity_alerts]
{'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:18', 'temperature': 43, 'humidity': 17, 'alert_type': 'humidity', 'message': 'Humidity 17% is below 20%'}
[ALERT from matvielienko_humidity_alerts]
{'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:23', 'temperature': 31, 'humidity': 81, 'alert_type': 'humidity', 'message': 'Humidity 81% is above 80%'}
[ALERT from matvielienko_temperature_alerts]
{'sensor_id': 24064, 'timestamp': '2025-11-17 00:17:29', 'temperature': 45, 'humidity': 73, 'alert_type': 'temperature', 'message': 'Temperature 45°C is above 40°C'}
[ALERT from matvielienko_humidity_alerts]
Ln 10, Col 33 (10 selected) Spaces 4 UTF-8 LF Python Finish Setup 3.10.12 (venv)
```