1. Створення 3-ьох топіків

```
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$ python3 create_topics.py
Topic 'building_sensors_vp2' created successfully.
Topic 'temperature_alerts_vp2' created successfully.
Topic 'humidity_alerts_vp2' created successfully.
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$
```

2. Генерація даних сенсорів та відправка даних в building_sensors

```
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$ python3 send_msg_building_sensor.py
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:35:55.728957', 'temperature': 40, 'humidity': 65}
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:36:00.739925', 'temperature': 36, 'humidity': 82}
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:36:05.744922', 'temperature': 45, 'humidity': 58}
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:36:10.749815', 'temperature': 36, 'humidity': 61}
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:36:15.756495', 'temperature': 43, 'humidity': 85}
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:36:20.762493', 'temperature': 42, 'humidity': 42}
Sent data: {'sensor_id': 9123, 'timestamp': '2024-11-23T16:36:25.768646', 'temperature': 32, 'humidity': 26}
```

```
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$ python3 send_msg_building_sensor.py
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:51:44.446288', 'temperature': 29, 'humidity': 27}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:51:50.028770', 'temperature': 31, 'humidity': 29}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:51:55.034011', 'temperature': 29, 'humidity': 73}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:00.039893', 'temperature': 31, 'humidity': 62}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:05.045859', 'temperature': 41, 'humidity': 50}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:10.050768', 'temperature': 29, 'humidity': 52}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:15.055911', 'temperature': 30, 'humidity': 23}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:20.061834', 'temperature': 35, 'humidity': 82}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:25.066827', 'temperature': 34, 'humidity': 55}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:30.071820', 'temperature': 36, 'humidity': 71}
Sent data: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:35.077006', 'temperature': 28, 'humidity': 59}
```

3. Отримання даних з building_sensors, фільтрація даних,
4. Відправка фільтрованих даних в temperature_alerts та humidity_alerts

```
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$ python3 read_building_sensor.py
Sent alert to humidity_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:51:53.611891', 'value': 82, 'message': 'Humidity out of range!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:05.045859', 'value': 41, 'message': 'Temperature exceeds threshold!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:08.628816', 'value': 41, 'message': 'Temperature exceeds threshold!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:13.634801', 'value': 42, 'message': 'Temperature exceeds threshold!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:13.634801', 'value': 16, 'message': 'Humidity out of range!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:20.061834', 'value': 82, 'message': 'Humidity out of range!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:23.644993', 'value': 44, 'message': 'Temperature exceeds threshold!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:33.656386', 'value': 44, 'message': 'Temperature exceeds threshold!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:43.666916', 'value': 18, 'message': 'Humidity out of range!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:55.099869', 'value': 17, 'message': 'Humidity out of range!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:53:00.105008', 'value': 43, 'message': 'Temperature exceeds threshold!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:53:05.109925', 'value': 84, 'message': 'Humidity out of range!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:13.700804', 'value': 45, 'message': 'Temperature exceeds threshold!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:23.711820', 'value': 44, 'message': 'Temperature exceeds threshold!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:53:25.131925', 'value': 18, 'message': 'Humidity out of range!'}
Sent alert to humidity_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:33.722913', 'value': 15, 'message': 'Humidity out of range!'}
Sent alert to temperature_alerts_vp2: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:38.727866', 'value': 42, 'message': 'Temperature exceeds threshold!'}
```

5. Отримання даних з temperature_alerts і humidity_alerts та виведення на екран

```
vpryimak@liza-TravelMate-P214-52:~/Documents/PyTEST$ python3 read_alerts.py
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:51:53.611891', 'value': 82, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:05.045859', 'value': 41, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:08.628816', 'value': 41, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:13.634801', 'value': 42, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:13.634801', 'value': 16, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:20.061834', 'value': 82, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:23.644993', 'value': 44, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:33.656386', 'value': 44, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:52:43.666916', 'value': 18, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:52:55.099869', 'value': 17, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:53:00.105008', 'value': 43, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:53:05.109925', 'value': 84, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:13.700804', 'value': 45, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:23.711820', 'value': 44, 'message': 'Temperature exceeds threshold!'}
Received alert: {'sensor_id': 4400, 'timestamp': '2024-11-23T16:53:25.131925', 'value': 18, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:33.722913', 'value': 15, 'message': 'Humidity out of range!'}
Received alert: {'sensor_id': 5597, 'timestamp': '2024-11-23T16:53:38.727866', 'value': 42, 'message': 'Temperature exceeds threshold!'}
```