Task Description:

MQTT is one of the most commonly used message protocols in the Internet of Things (IoT). Your task is to create a Python program to demonstrate MQTT-based communication between smart sensors and a monitoring service. The demonstration should represent a period of 2 h with a sampling rate of 1 min.

Requirements:

1. **MQTT Integration**: Utilize the Paho MQTT client library (**https://pypi.org/project/paho-mqtt/**) to establish connections to an MQTT broker.
2. **Smart Sensors**: Create virtual smart sensors within your program capable of measuring parameters such as temperature, humidity, and CO_2 concentration in an office environment. These sensors should publish the collected data to the MQTT broker.
3. **Monitoring Service:** Develop a monitoring service within your program to subscribe to the MQTT topics and receive the data transmitted by the smart sensors. Visualize this data in a user-friendly format for easy interpretation.
4. **Deliverable Quality**: Document your code thoroughly, including explanations of its functionality and requirements. Provide instructions for setting up the Python environment so that others can seamlessly use your program.

Hints:

- You can utilize the freely accessible MQTT broker provided at **test.mosquitto.org** for testing purposes.
- Smart sensors can act as MQTT publishers, and the monitoring service can act as MQTT subscriber.
- You can speed up your program by using a simulated time stamp.