HM INSIGHTHUB

User Documentation

This user documentation serves as your guide to using HM InsightHub effectively. It explains the dashboard's key features, login procedure, and how to customize, compare, and view sensor data. We're committed to providing you with reliable data and a seamless user experience. If you have any questions or encounter any issues, please don't hesitate to contact support for assistance.

Learning more about HM InsightHub

About HM InsightHub

HM InsightHub is a dashboard designed to provide HM lecturers with access to sensor data collected at HM buildings that they can give to their students to practise what they learned in class (e.g., data analytics or statistics) or to support their research projects.

How HM InsightHub differs from previous HM offerings

HM Insight Hub aims to enable students and teachers to access and download the sensor data stored in the FROST servers more easily than before. HM InsightHub provides three key improvements:

1. Sensor data is accessible faster through an intuitive self-service dashboard.
2. HM lecturers and students can access the sensor data directly and independently which drastically reduces the necessary level of involvement of the data owner.
3. HM InsightHub lays the foundation for scaleable growth as well as support for administrative tasks such as monitoring sensor battery level.

Data Source

The data available on HM InsightHub is collected by sensors located in various HM buildings. It is stored on a FROST server. The application fetches data from the existing FROST-servers and displays it to the user. New sensors can be added to it through API-requests. Location data was manually added to a dynamoDB-database, but no other data is being stored on any databases.

My HM InsightHub Account

User permissions

Standard user: Standard users can use the dashboard to customize a dataset by selecting the sensors, variables, and measures they would like to include and downloading this data in the file type of their choice. They can furthermore use the dashboard to customize visualizations in the form of graphs.

Admin user: The administrative user role has the same capabilities as the standard user as well as additional permissions that cover administrative tasks. He can also

assign it to others. Administrative users have full access to all features and functionalities and can manage the dashboard by customizing settings and configurations and have full rights to make changes in the system and source code. Admin users are designated by the system developers during setup.

How to login

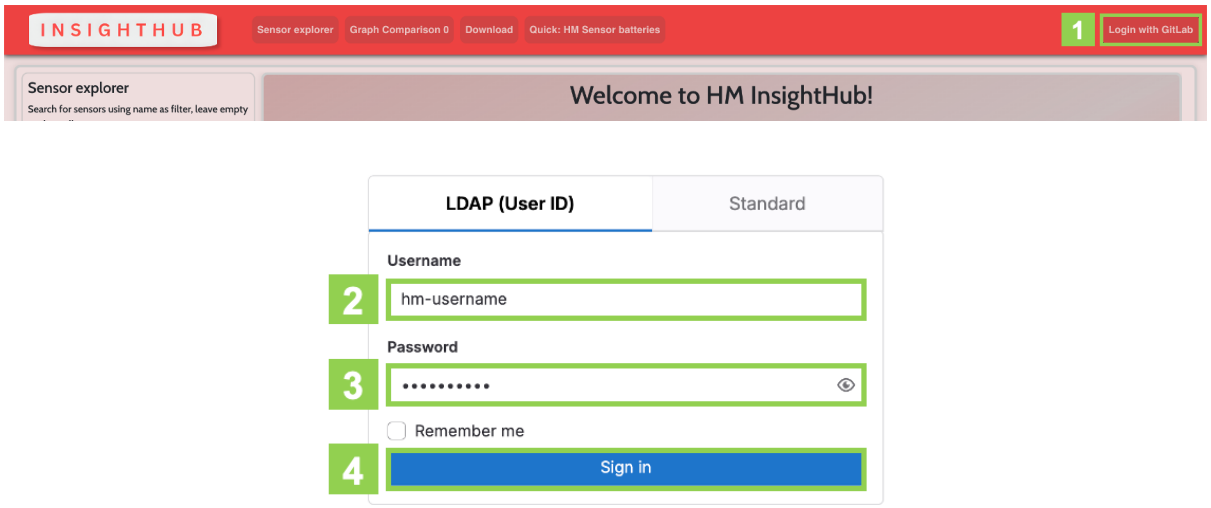
Users need to log in to also view location data. Access is based on existing HM credentials and verified via Gitlab.

(1) To log in, click “Log in with Gitlab” in the navigation bar on the top right.

(2) Type in your HM username as hm-username.

(3) Type in your password.

(4) Click “Sign In”. You will be redirected to HM InsightHub.



How to delete your account

To log in to HM InsightHub, you are using your HM credentials. Thus, there is no need to delete any account should you decide not to use HM InsightHub anymore. Once you are no longer a student or faculty member, your account will be deleted automatically.

Access to HM InsightHub as a non-HM member

Access to HM InsightHub in general is not restricted. However, location data is only available for users logged in with HM credentials. Currently, it is unfortunately not possible to get access to location data as a non-HM member.

Security and Privacy Guidelines

Log in is based on existing HM/Gitlab access. DynamoDB contains sensor location

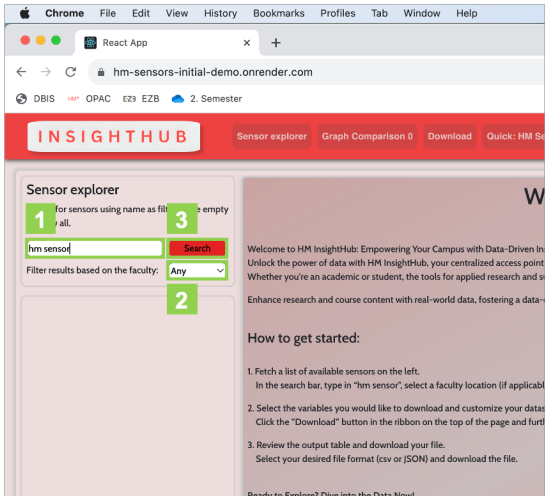
data, but no other data is being stored on any databases. The application only fetches data from already existing FROST-servers and displays it to the user.

Using HM InsightHub

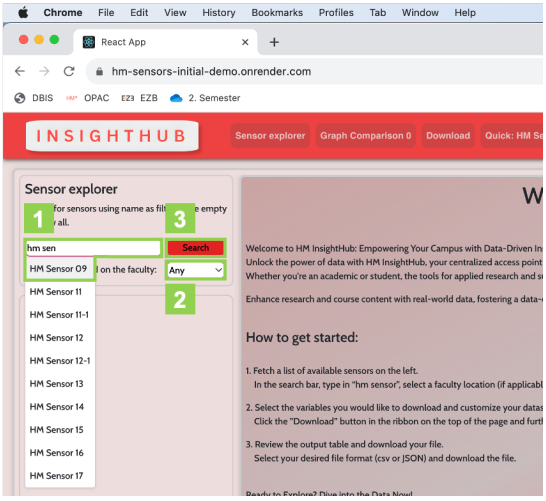
How to fetch sensor data

To view, compare, or download sensor data, you first need to fetch sensor data.

Fetch all sensors:

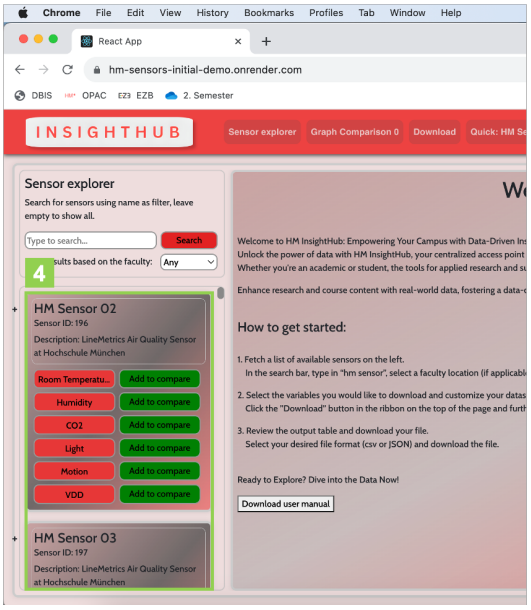


Fetch one sensor:

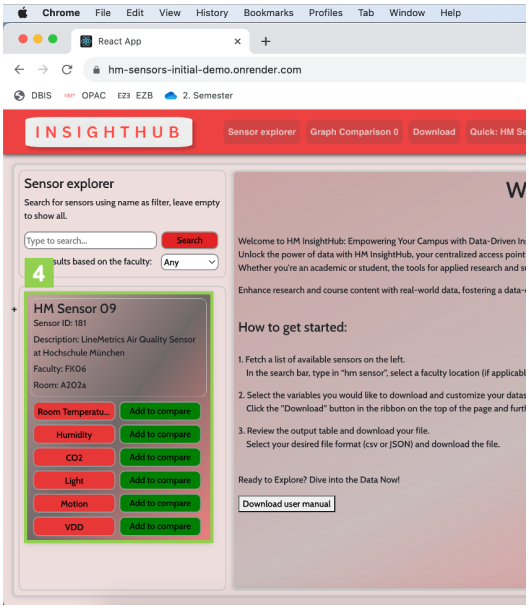


(1) Use the search bar / drop down to select the sensor you are looking for. To fetch all sensors, type in “HM Sensor”, to fetch a specific sensor, select the sensor from the drop down.
(2) If applicable, filter by location.
(3) Click “Search”.
(4) Review the list of results.

Fetch all sensors:

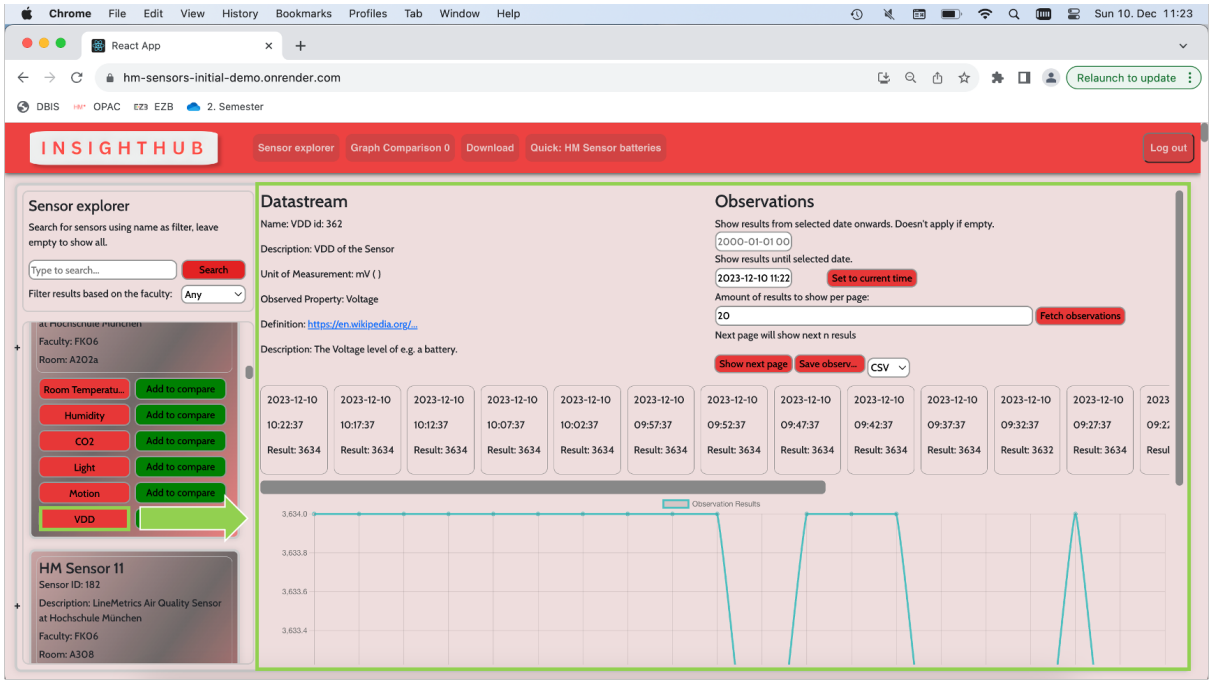


Fetch one sensor:



How to view a detailed datastream for one sensor

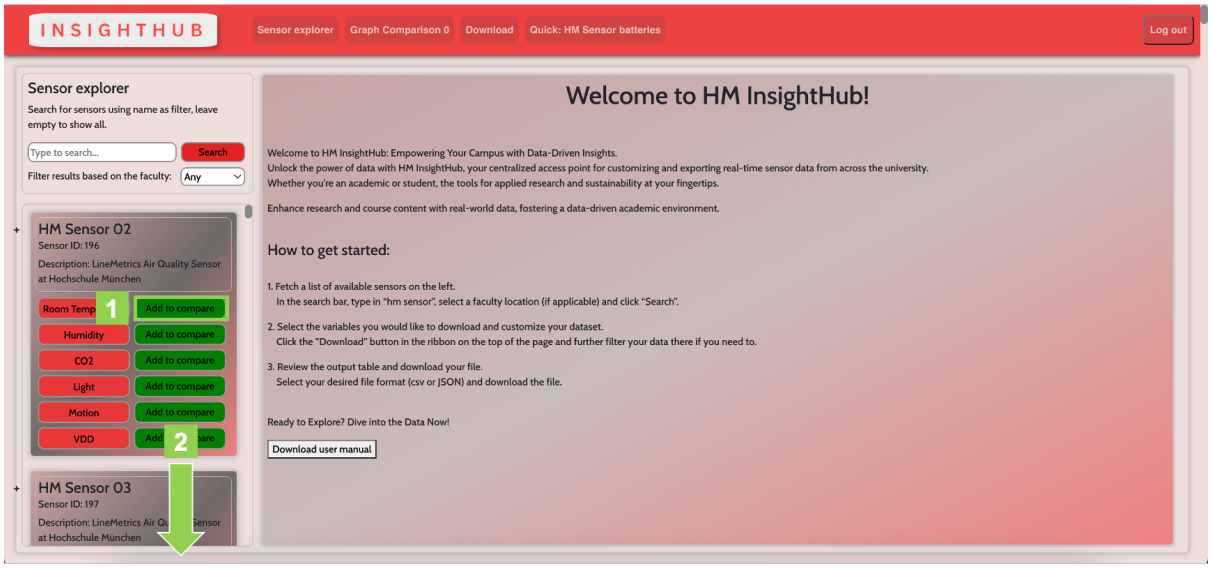
First fetch the sensor data (see above). From the list, select the sensor and datastream you would like to review. Wait for the datastream to load on the right and review the details information.



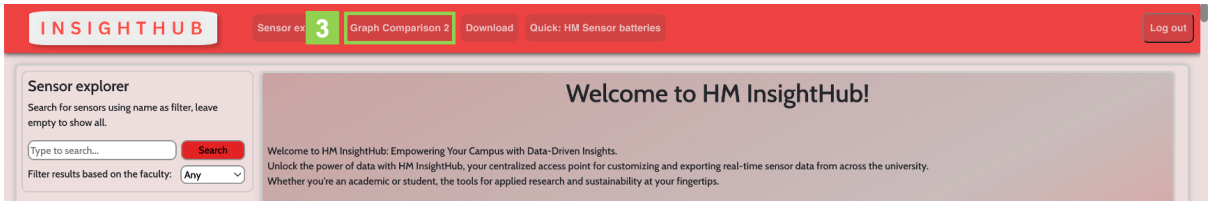
How to view and compare sensor data from multiple sensors

First fetch the sensor data (see above).

(1) For the datastream you would like to compare, click “Add to compare”.
(2) Do this for every sensor you would like to include.

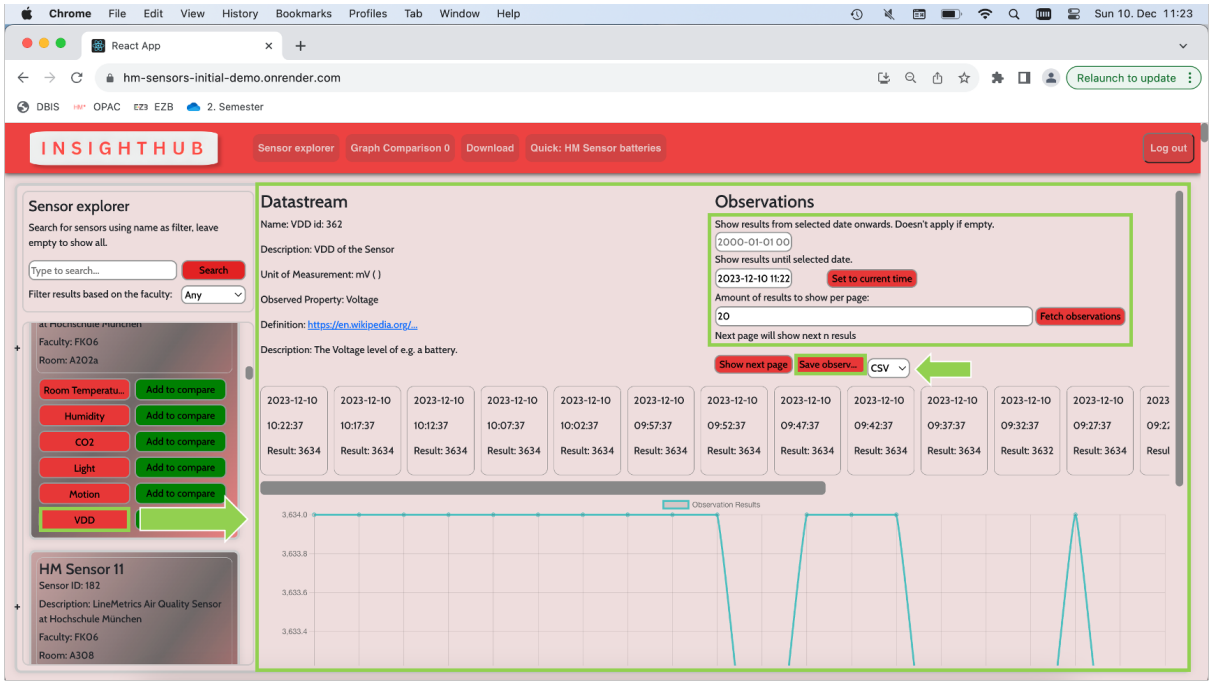


(3) Click “Graph comparison” in the navigation bar.



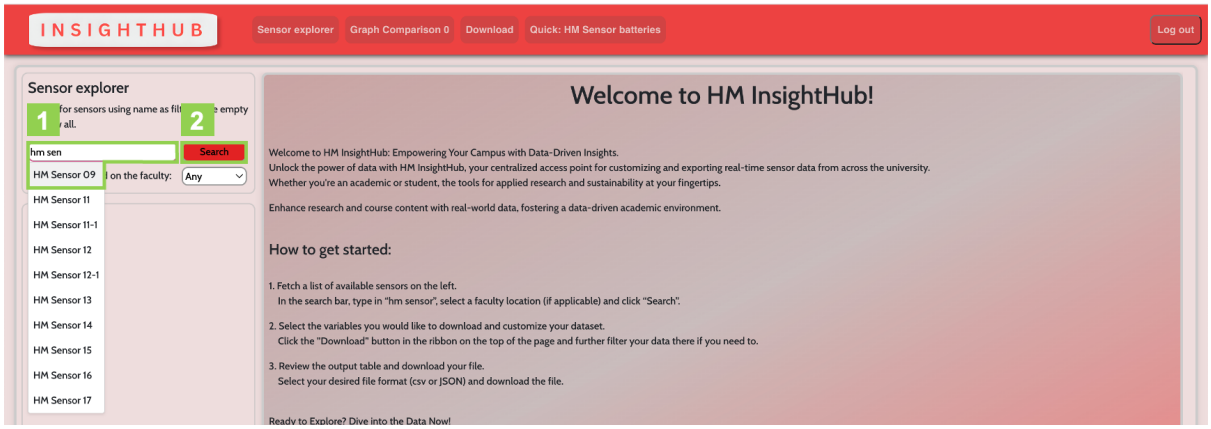
How to download sensor data from one datastream from one sensor

Fetch the sensor data (see above) and then select one datastream for one sensor (see above). **On the right,** filter the observations, select your desired file type (csv or JSON) and then click “Save observations as…”.

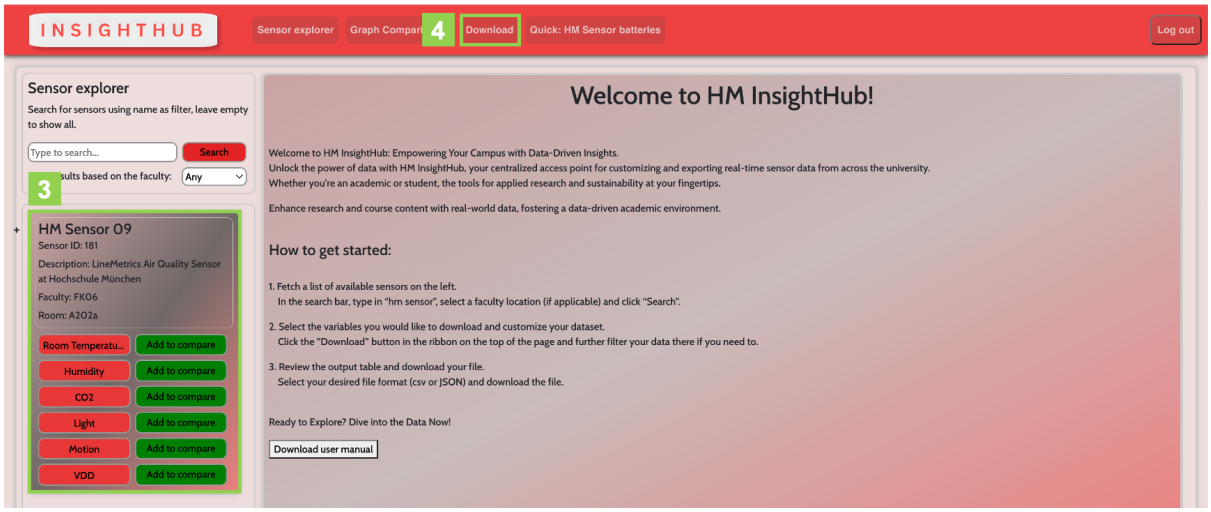


How to download all sensor data from one sensor

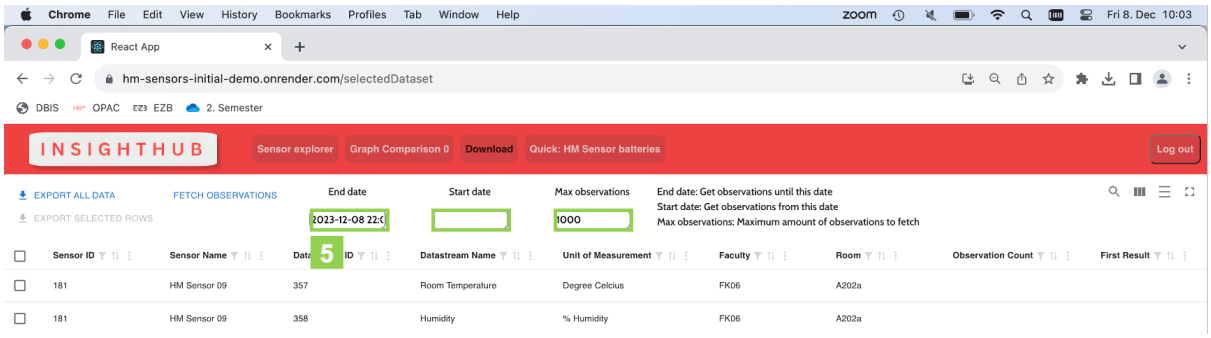
(1) Use the search bar / drop down to select the sensor you are looking for.
(2) Click “Search”.



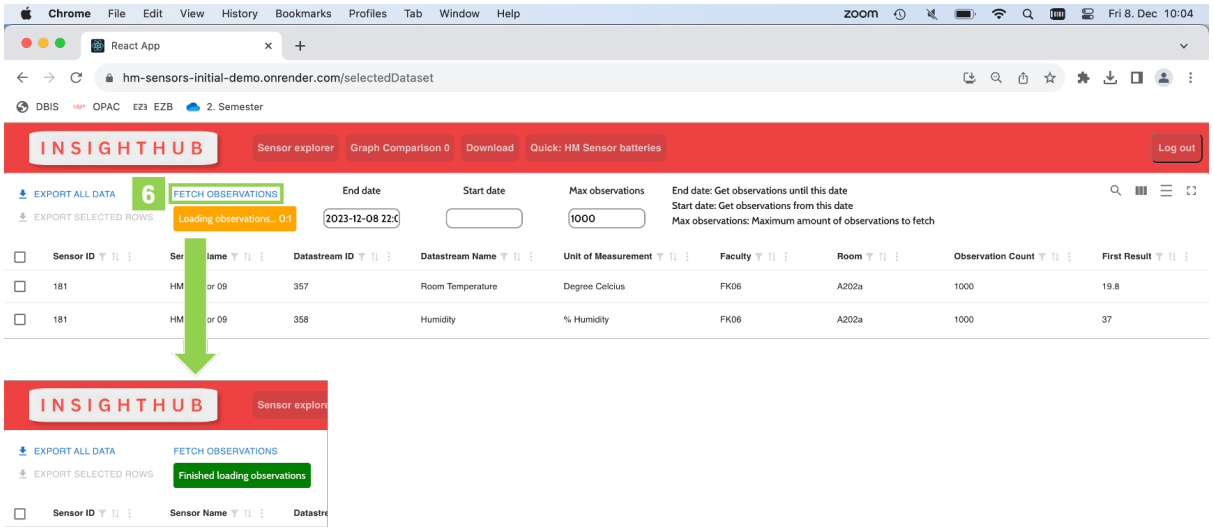
(3) The list should now have loaded the selected sensor.
(4) Click “Download”.



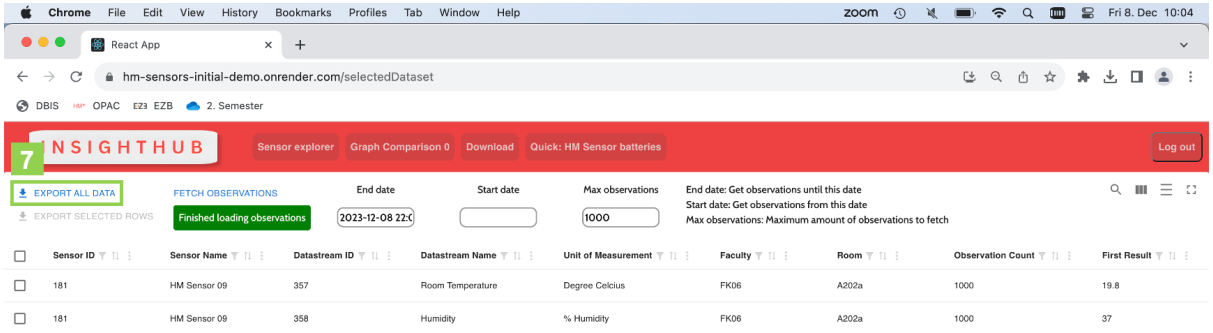
(5) Set the start and end date (if applicable) as well as the maximum number of observations you would like to download.



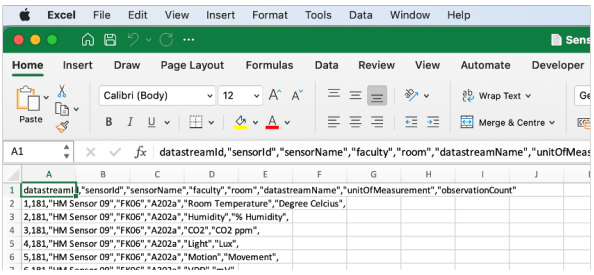
(6) Click “Fetch Observations” and wait for the tool to load the observations (complete when status turns green and say “Finished loading observations”).



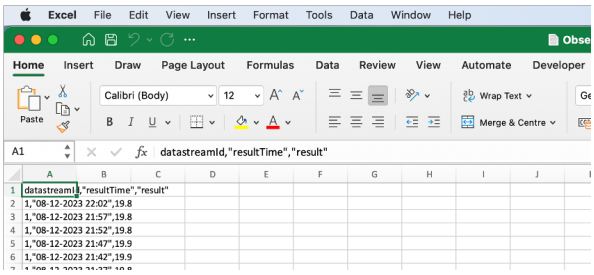
(7) Click “EXPORT ALL DATA”. You will download two files: one file containing sensor, datastream and location information and one file containing the observations.



File: “SensorData”

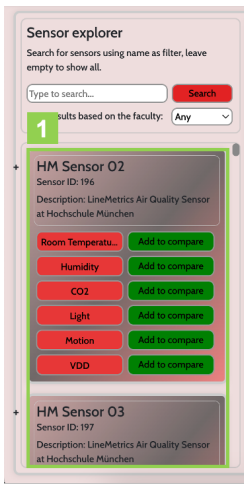


File: “Observations”

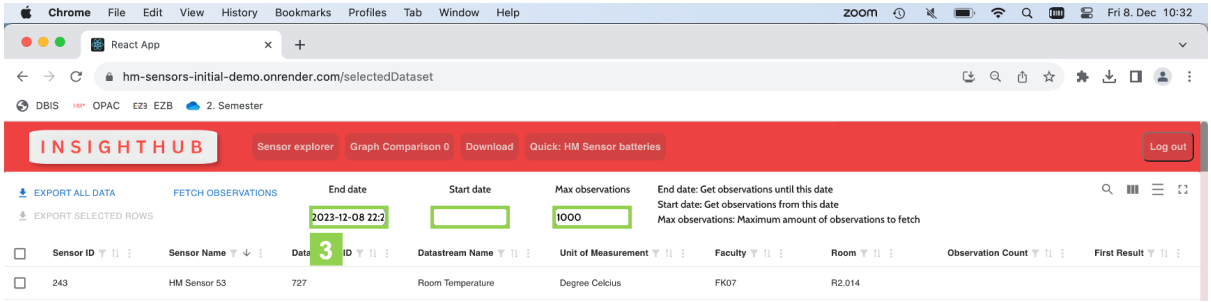


How to download sensor data from multiple sensors

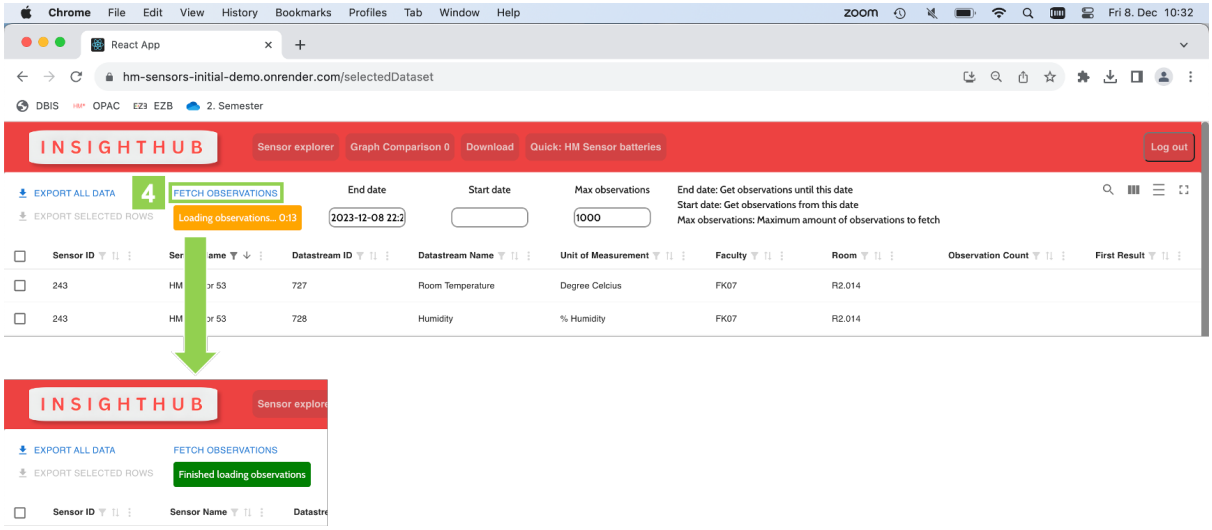
(1) Fetch the HM sensors based on the instructions listed above. Then follow the instructions below.
(2) Click “Download” in the top ribbon.



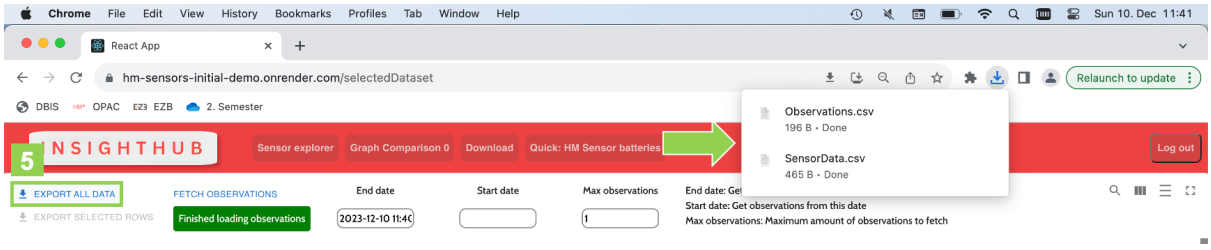
(3) Set the start and end date (if applicable) as well as the maximum number of observations you would like to download.



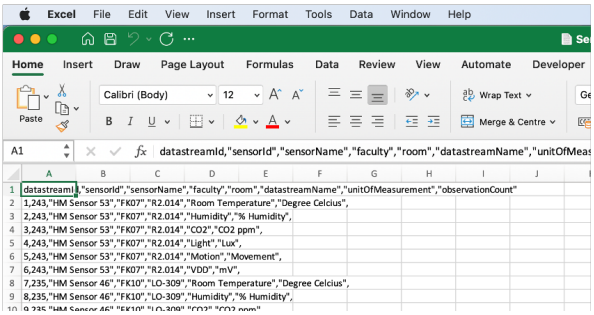
(4) Click “Fetch Observations” and wait for the tool to load the observations (complete when status turns green and say “Finished loading observations”).



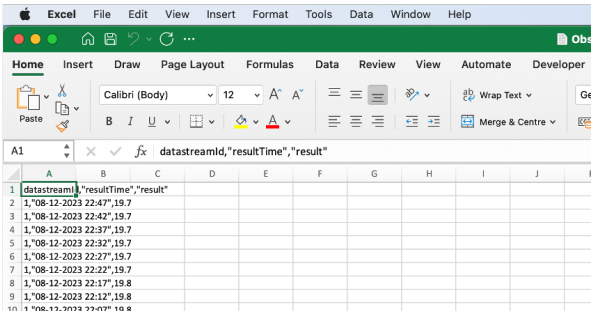
(5) Click “EXPORT ALL DATA”. You will download two files: one file containing sensor, datastream and location information and one file containing the observations.



File: “SensorData”

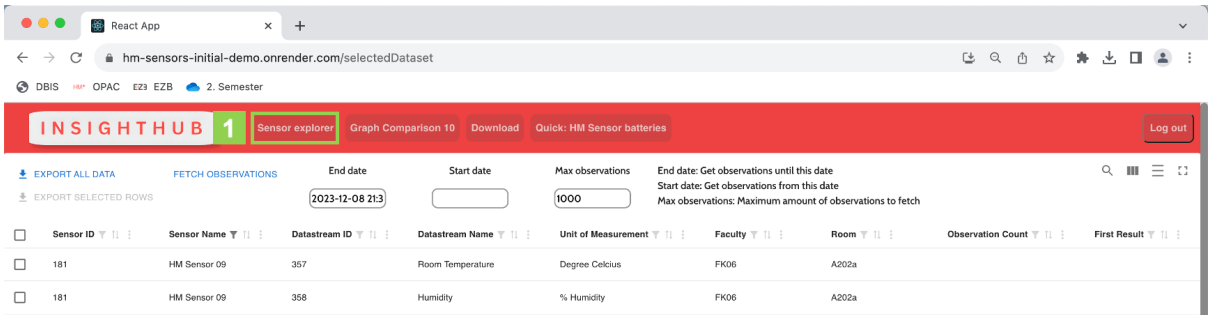


File: “Observations”



How to return to home

(1) To navigate back to the home page, click “Sensor explorer” on the top left of the top ribbon.



Glossary

Definitions of key terms used in the dashboard:

CO2	–	CO2 concentration (CO2 in ppm).
Datastream	–	Datastream refers to a sequence of observations collected from a specific sensor. It represents a real-time or near-real-time stream of data that provides information about a particular aspect of the environment being monitored.
Humidity	–	The humidity inside the room (% Humidity).
Light	–	Amount of light in the room (Lux).
Motion	–	Number of motion counts (Movement).
Observation	–	An observation is a specific datapoint or set of datapoints that have been recorded or measured by a sensor.
Room Temperature	–	The temperature inside the room (Degree °C).
VDD	–	Voltage of the sensor (mV).

Troubleshooting

No reaction

The tool can be quite slow, so if the page seems to not be reacting, wait a few minutes.

Location data is missing

Not all sensors have location data assigned, if it is missing it is likely one of those sensors.

Other issues

For all other issues, contact Johannes.Ebke@hm.edu