

Development of a Microservice for Open Weather Data

Summary

The Open-Data-Service (ODS) is an open source software project, which collects heterogeneous data from various sources and makes this data easy to consume through a unified programmatic interface. Moreover, the ODS can improve the quality and availability of the data, and apply different operations to enhance the data.

On the source side, different adapters ensure that the proliferation of protocols, formats, and the complexity of the sources is easy to handle. On the user side, a query interface provides all data in a uniform and simple interface, regardless of their original format or interface.

A user who uses the ODS can focus on application development and doesn't have to struggle with different formats or interfaces of data sources.

The goal of this master thesis is to design and develop a microservice to make open weather data from the Deutsche Wetterdienst (DWD) easy accessible. The provided open data from DWD aren't usable in its current form, see <https://opendata.dwd.de/>.

Work Results

- Literature review
 - Microservice architecture style
- Thesis methods
 - Definition of requirements.
 - Design and implementation of a microservice.
 - Evaluation of work.
- Thesis results
 - Implement of a microservice.
 - ODS adapter to access microservice
 - Extend current weather model
 - Provide current temperature and solar radiation for a given location (GPS, city name, or zip code)
 - (optional) Provide forecasts for a given location
 - (optional) Provide historical data for a given location
 - Can be used as a template for other microservices

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