Analysis of Charging Infrastructure Usage via Data Aggregation

Problem Definition
With the goal of more than 7 million electric vehicles registered in Germany by 2030, the Federal Government set ambitious goals for the mobility sector. In order to enable a seamless usage of these vehicles, a sufficiently dimensioned and easily available charging infrastructure is key. Especially users without the option of charging their vehicles at privately owned charging points on their own premises need publicly available charging points. Today, this type of infrastructure is neither well documented nor is it possible for researchers to access respective data. In this situation, the only way to gather data for analysis and optimization is the web-based data aggregation, allowing for a better understanding of the usage and the difficulties of current charging infrastructure.

Task Description
This project aims to develop a data aggregation backend that is able to poll status updates of charging points, collects the data, and provides easy statistics for spatiotemporal usage of these charging points, as well as statistical analysis about the spatial distribution, properties, providers, and failures of the existing charging points. In the further course of the project, a front-end application should be developed which is able to display the obtained data on a map. Furthermore, a possibility to filter the map data is to be implemented. Attention should be paid to the fact that the structure of the websites used can change, making the developed project error-prone for the future. The analyzed data could later be used to research the utilization of charging infrastructure and propose improvements.

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