# Report

## 7) Analyze Both Geovisualizations

The two maps provide critical insights:

1. **Concentration of Charging Stations**:
   - The city center, particularly areas like **Mitte**, **Friedrichshain-Kreuzberg**, and **Charlottenburg**, has the highest number of charging stations. These areas are marked with darker red or orange on the charging station map.
   - This is expected because the center of Berlin is a hub for commercial activities and urban mobility.
2. **Areas with High Population Density but Fewer Charging Stations**:
   - **Köpenick (southeast)**: This area has many residents (yellow regions on the population map) but very few charging stations.
   - **Spandau (west)**: Another region with high population density and a lack of charging infrastructure.
   - **Lichtenberg and Marzahn (northeast)**: These areas also have high population density with a notable shortage of charging stations.

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## 8) Write Documentation

### Program: Structure, What Means What?
The program is structured as follows:

1. **Data Sources**:
   - The project uses datasets containing:
     - The number of residents per postal code.
     - The number of electric charging stations per postal code.
2. **Processing**:
   - The data was cleaned and merged so that both maps could visualize data by postal code.
3. **Geovisualizations**:
   - Two maps were created:
     - **Population Density Map**: Shows where most people live. The darker yellow areas indicate higher population density.
     - **Charging Stations Map**: Highlights where charging stations are located. The redder the area, the more stations it has.
4. **Analysis**:
   - We compared both maps to identify gaps in charging station distribution relative to population density.

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**Interpretation of Results**:

1. The **city center** is well-covered with charging stations. However, it likely reflects demand from businesses and commuters rather than residents.
2. **Outer areas of Berlin**, such as **Köpenick**, **Spandau**, and **Marzahn**, show a mismatch. These areas have a high number of residents but very few charging stations. This suggests a lack of infrastructure in residential areas.
3. Expanding the number of charging stations in the **outer areas** would ensure better accessibility for residents, especially for those commuting to the city center.

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**Conclusion**

The maps show that Berlin's charging stations are concentrated in the center, while the outer residential areas are underserved. To promote electric vehicle usage and meet future demand, it is crucial to focus on building infrastructure in the outskirts, where the population is dense but facilities are lacking.