(6) PRODIGY_DS_05-Intern-Pin | Traffic Accident Analysis Visuali | colab.google | Untitled9.ipynb - Colab | Find Open Datasets and Machi

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```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import folium
import geopandas as gpd
from folium.plugins import HeatMap
```

```
import zipfile

with zipfile.ZipFile('Road Accident Data.csv.zip','r') as zip_ref:
  zip_ref.extractall()

  import os
  os.listdir()
```

```
df=pd.read_csv('Road Accident Data.csv')
df.head()
```

	Accident_Index	Accident Date	Day_of_Week	Junction_Control	Junction_Detail	Accident_Severity	Latitude	Light_Conditions	Local_Authority_(District)	Carriageway_Hazards	...	Number_of_Casu
0	200901BS70001	1/1/2021	Thursday	Give way or uncontrolled	T or staggered junction	Serious	51.512273	Daylight	Kensington and Chelsea	NaN	...	
1	200901BS70002	1/5/2021	Monday	Give way or uncontrolled	Crossroads	Serious	51.514399	Daylight	Kensington and Chelsea	NaN	...	
2	200901BS70003	1/4/2021	Sunday	Give way or uncontrolled	T or staggered junction	Slight	51.486668	Daylight	Kensington and Chelsea	NaN	...	
3	200901BS70004	1/5/2021	Monday	Auto traffic signal	T or staggered junction	Serious	51.507804	Daylight	Kensington and Chelsea	NaN	...	
4	200901BS70005	1/6/2021	Tuesday	Auto traffic signal	Crossroads	Serious	51.482076	Darkness - lights lit	Kensington and Chelsea	NaN	...	

Variables Terminal

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	0
Accident_Index	0
Accident Date	0
Day_of_Week	0
Junction_Control	0
Junction_Detail	0
Accident_Severity	0
Latitude	0
Light_Conditions	0
Local_Authority_(District)	0
Carriageway_Hazards	302549
Longitude	0
Number_of_Casualties	0
Number_of_Vehicles	0
Police_Force	0
Road_Surface_Conditions	317
Road_Type	1534
Speed_limit	0
Time	17
Urban_or_Rural_Area	0
Weather_Conditions	6057

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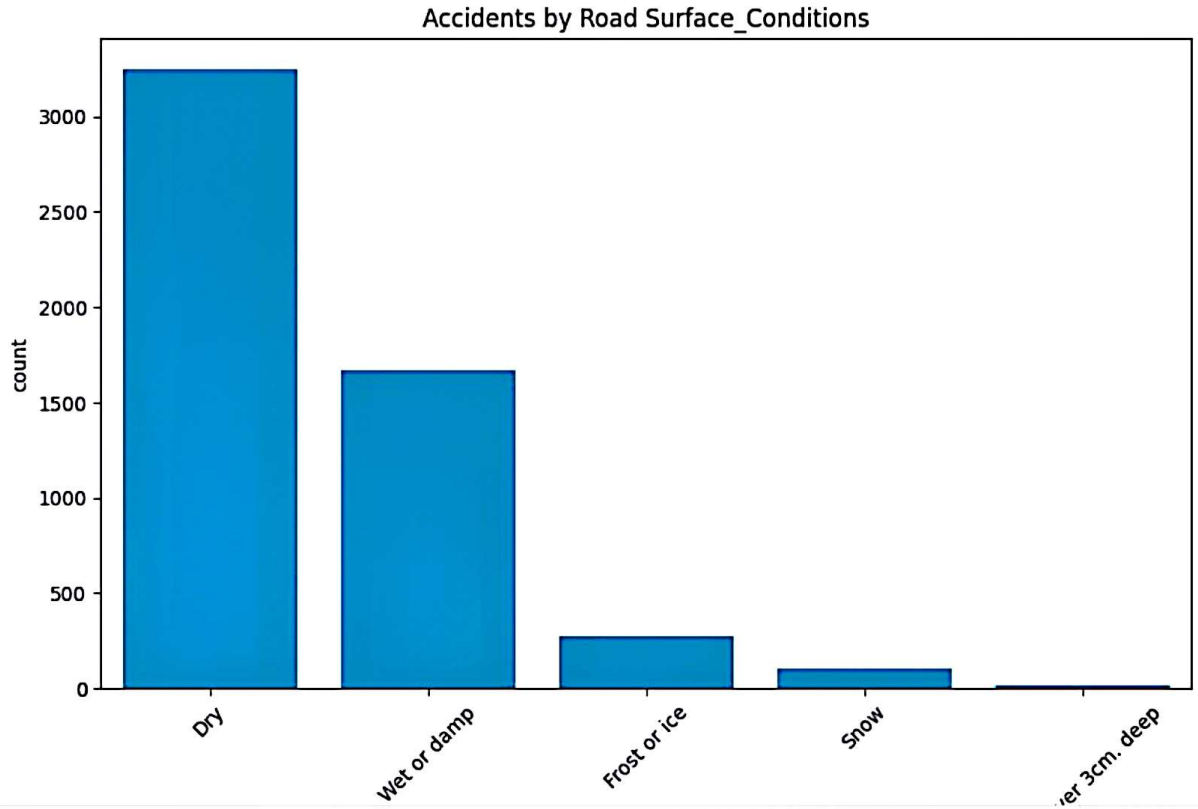
```
plt.figure(figsize=(10,6))
sns.countplot(x='Road_Surface_Conditions', data=df_clean, order=df_clean['Road_Surface_Conditions'].value_counts().index)
plt.title('Accidents by Road Surface_Conditions')
plt.xticks(rotation=45)
plt.show()
```



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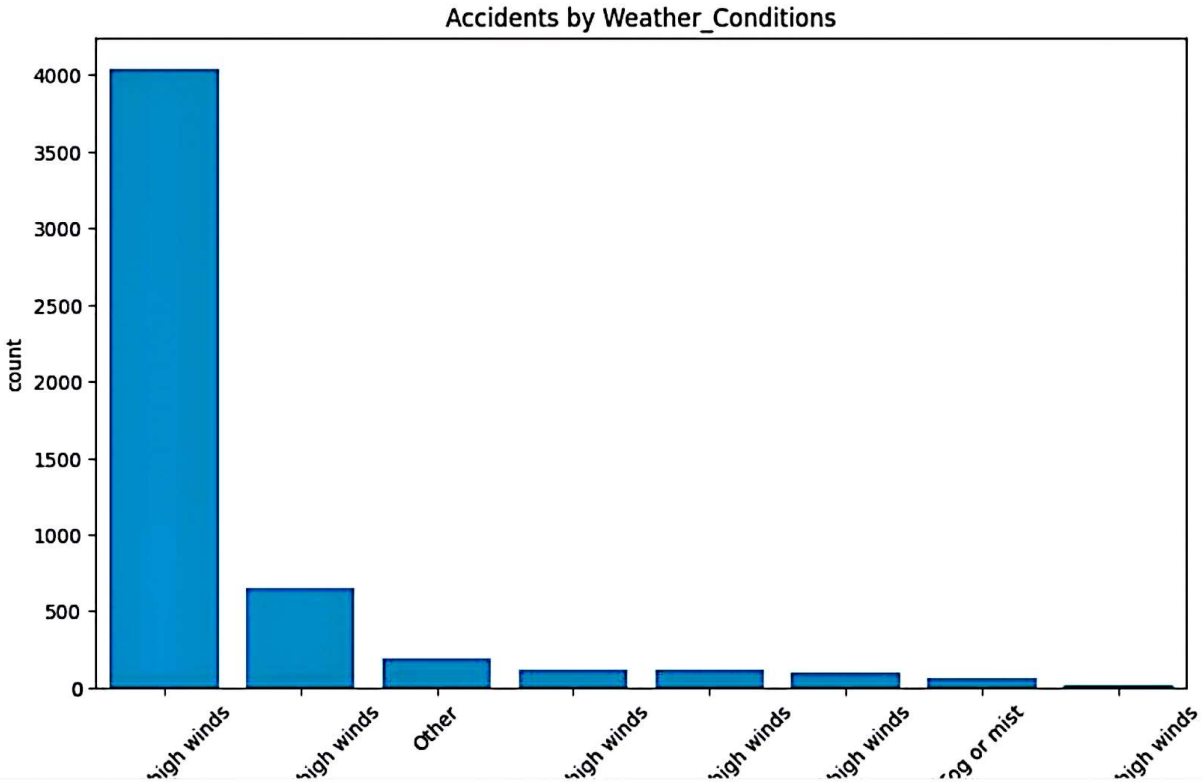
```
plt.figure(figsize=(10,6))
sns.countplot(x='Weather_Conditions', data=df_clean, order=df_clean['Weather_Conditions'].value_counts().index)
plt.title('Accidents by Weather_Conditions')
plt.xticks(rotation=45)
plt.show()
```



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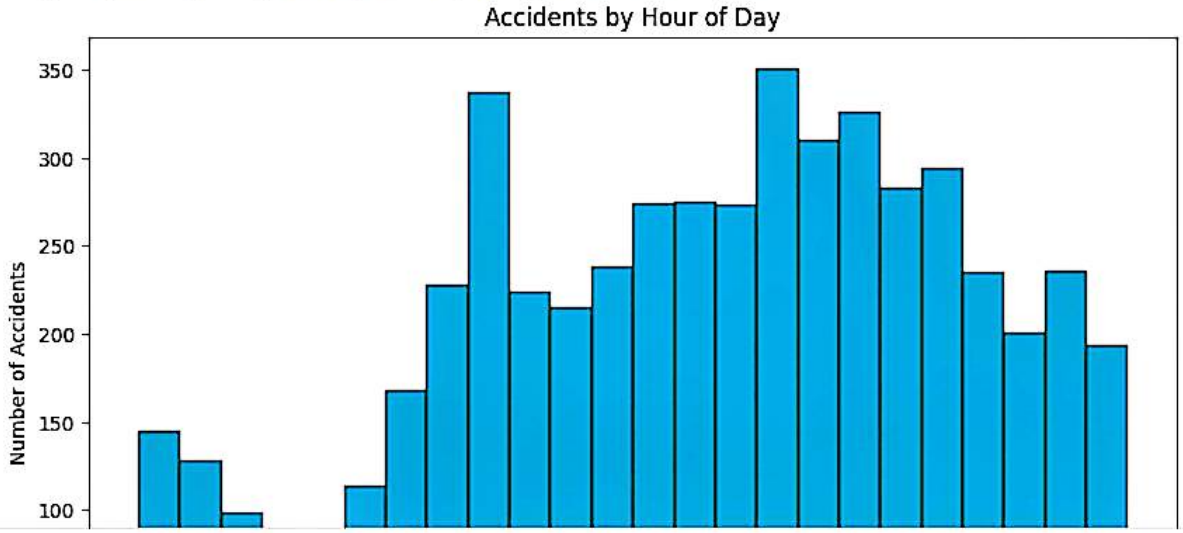
```
df_clean['Hour']=pd.to_datetime(df_clean['Time'],errors='coerce').dt.hour

plt.figure(figsize=(10,6))
sns.histplot(df_clean['Hour'].dropna(), bins=24, kde=False)
plt.title('Accidents by Hour of Day')
plt.xlabel('Hour of Day')
plt.ylabel('Number of Accidents')
plt.show()
```

```
/tmp/ipython-input-27-3421518767.py:1: UserWarning: Could not infer format, so each element will be parsed individually, falling back to `dateutil`. To ensure parsing is consistent and as-expe
  df_clean['Hour']=pd.to_datetime(df_clean['Time'],errors='coerce').dt.hour
/tmp/ipython-input-27-3421518767.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  df_clean['Hour']=pd.to_datetime(df_clean['Time'],errors='coerce').dt.hour
```



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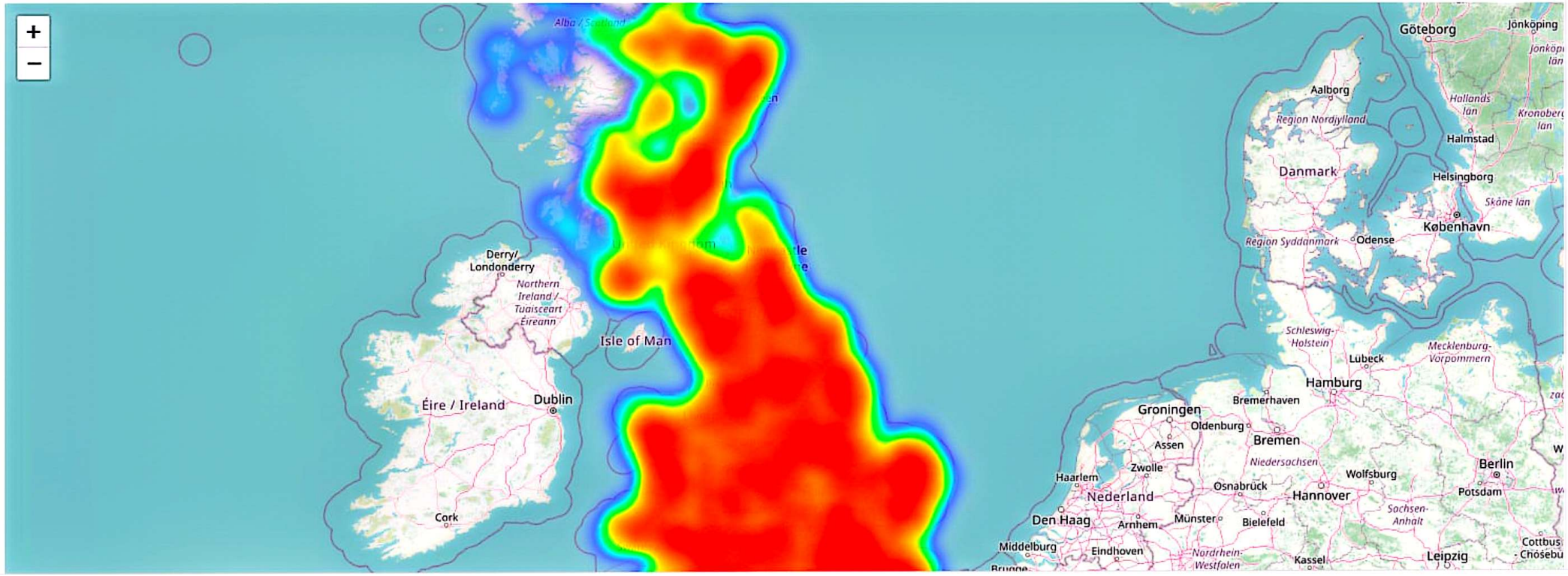
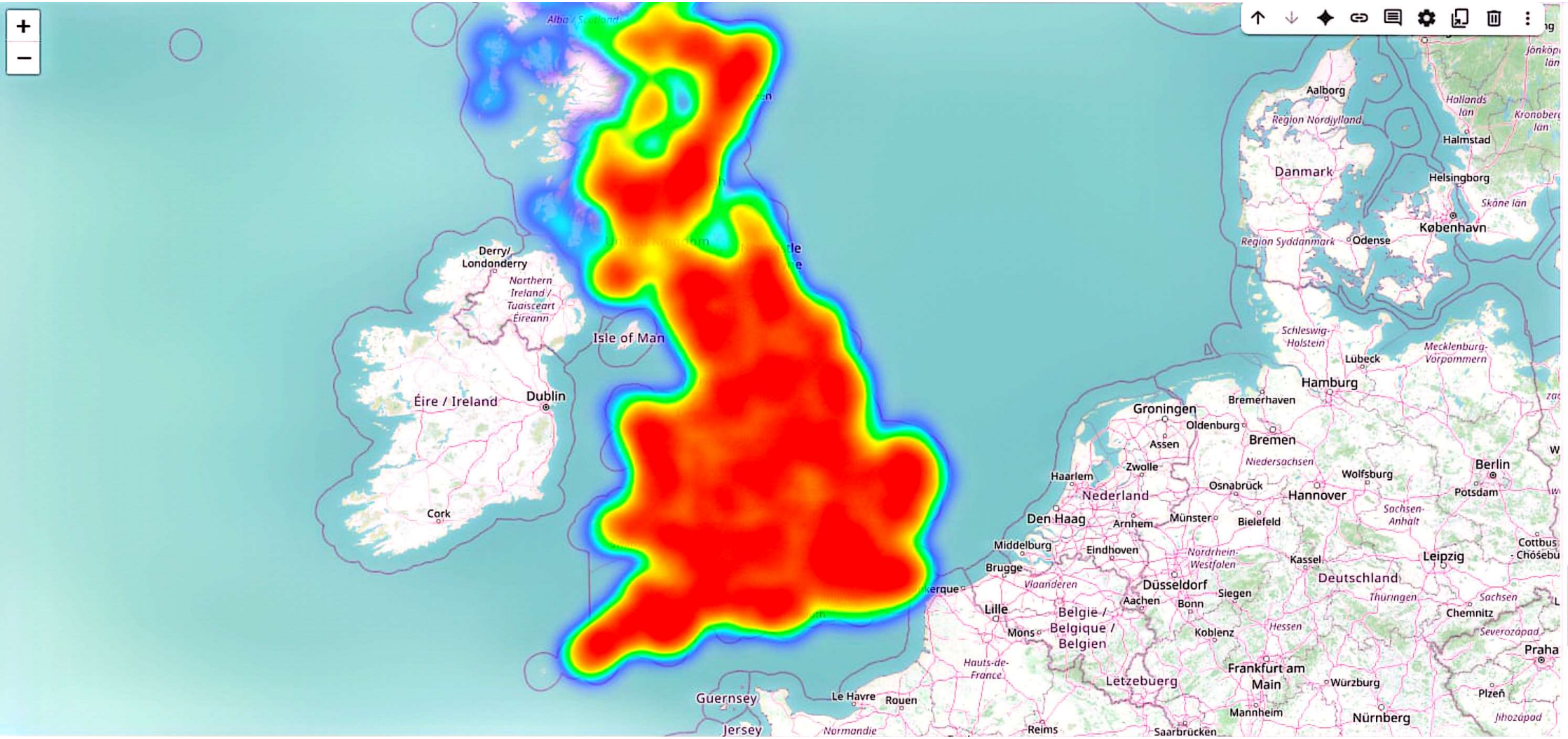
```
df_map = df_clean[['Latitude', 'Longitude']].dropna()
latitude = df_map['Latitude'].mean()
longitude = df_map['Longitude'].mean()
m= folium.Map(location=[latitude, longitude], zoom_start=6)
heat_data = df_map.values.tolist()
HeatMap(heat_data).add_to(m)
m
```

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