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In this graph we will graph 4 European countries to compare how many new deaths they have gotten every day throughout the pandemic. Hoewever, we will also try to see if there's an association with the number of deaths and the average age of the population in the selected countries.

▾ We begin by importing the necessary libraries as well as reading the file in.

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
import matplotlib.pyplot as plt
import matplotlib.dates as mdates
from matplotlib.dates import DateFormatter
import matplotlib.cm as cm

# Read the CSV file into a pandas DataFrame
df = pd.read_csv("https://covid.ourworldindata.org/data/owid-covid-data.csv")
```

We now filter the data to include only the rows for Spain, Italy, France, and Germany as well as calculate the median age for each country. For each country we will assign a darker colored blue for higher median age and a lighter blue for the lower median age.

```
countries = ["Spain", "Italy", "France", "Germany"]
df_filtered = df[df["location"].isin(countries)]

median_ages = df_filtered.groupby("location")["median_age"].max()

colormap = cm.ScalarMappable(cmap=cm.Blues)
colormap.set_clim(vmin=median_ages.min(), vmax=median_ages.max())
```

A line graph is made of the daily new deaths, set the y-axis limit so we see the values more clearly, and set the titles for the axes. Finally we clean up anything that doesn't look right and plot our graph.

```
fig, ax = plt.subplots(figsize=(10, 6))
for country in countries:
    df_country = df_filtered[df_filtered["location"]==country]
    color = colormap.to_rgba(median_ages[country])
    ax.plot(df_country["date"].iloc[::35], df_country["new_deaths"].iloc[::35], color=color, label=country)

ax.set_ylim([0, 1200])

ax.set_title("Daily New Deaths in Selected Countries")
ax.set_ylabel("Number of Daily New Deaths")
ax.set_xlabel("Date")

ax.axhspan(df_filtered["new_deaths"].min(), df_filtered["new_deaths"].max(), facecolor='gray', alpha=0.3)

plt.xticks(rotation=80)

ax.legend()
plt.show()
```
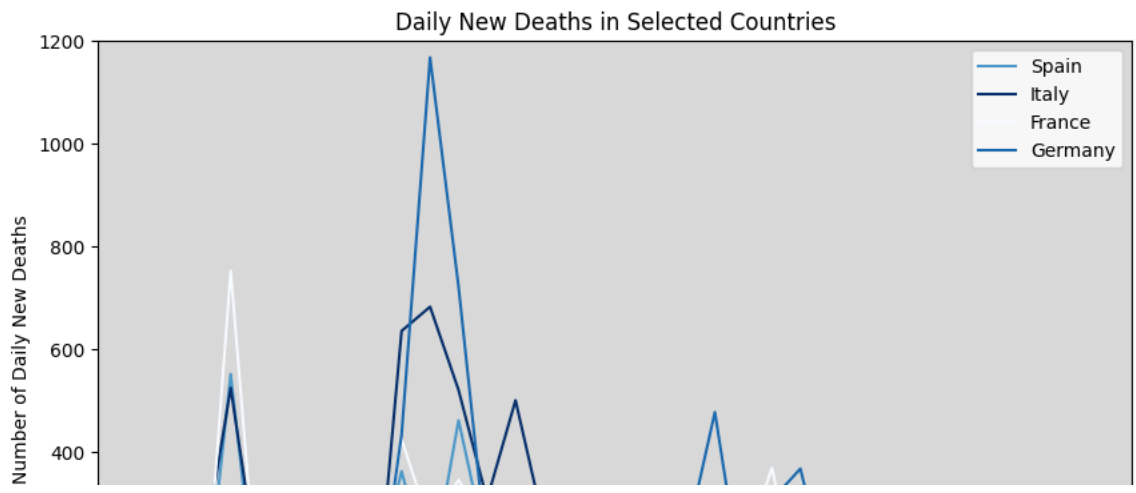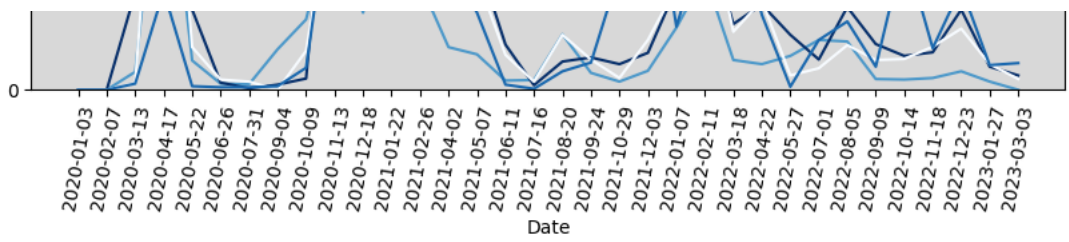
⤷

Daily New Deaths in Selected Countries

We might expect to see an association between a higher median age and a a higher number of daily deaths, but it is not clear from this graph. Perhaps trying more countries may make it easier to see a trend.