covid19_global_tracker.

May 13, 2025

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#  COVID-19 Global Data Tracker

This Jupyter Notebook analyzes COVID-19 trends globally using the [Our World in␣
 ↪Data](https://ourworldindata.org/covid-cases) dataset.
It covers:
- Case and death trends
- Vaccination progress
- Comparisons between countries
- Visual insights and summaries

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import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

%matplotlib inline
sns.set(style="whitegrid")

# Load dataset
df = pd.read_csv("owid-covid-data.csv")
df.head()
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df['date'] = pd.to_datetime(df['date'])

# Select countries
countries = ['Kenya', 'India', 'United States']
df_countries = df[df['location'].isin(countries)]

# Select important columns
columns = [
    'date', 'location', 'total_cases', 'new_cases', 'total_deaths',
    'new_deaths', 'total_vaccinations', 'people_vaccinated',
    'people_fully_vaccinated', 'population'
]
df_countries = df_countries[columns]
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# Handle missing values
df_countries.fillna(0, inplace=True)
df_countries.head()
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plt.figure(figsize=(12, 6))
for country in countries:
    data = df_countries[df_countries['location'] == country]
    plt.plot(data['date'], data['total_cases'], label=country)

plt.title('Total COVID-19 Cases Over Time')
plt.xlabel('Date')
plt.ylabel('Total Cases')
plt.legend()
plt.tight_layout()
plt.show()
```

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plt.figure(figsize=(12, 6))
for country in countries:
    data = df_countries[df_countries['location'] == country]
    plt.plot(data['date'], data['total_deaths'], label=country)

plt.title('Total COVID-19 Deaths Over Time')
plt.xlabel('Date')
plt.ylabel('Total Deaths')
plt.legend()
plt.tight_layout()
plt.show()
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plt.figure(figsize=(12, 6))
for country in countries:
    data = df_countries[df_countries['location'] == country]
    plt.plot(data['date'], data['total_vaccinations'], label=country)

plt.title('COVID-19 Vaccination Progress Over Time')
plt.xlabel('Date')
plt.ylabel('Total Vaccinations')
plt.legend()
plt.tight_layout()
plt.show()
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df_countries['death_rate'] = df_countries['total_deaths'] /␣
 ↪df_countries['total_cases']
df_countries['death_rate'] = df_countries['death_rate'].fillna(0)

plt.figure(figsize=(12, 6))
for country in countries:
    data = df_countries[df_countries['location'] == country]
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    plt.plot(data['date'], data['death_rate'], label=country)

plt.title('COVID-19 Death Rate Over Time')
plt.xlabel('Date')
plt.ylabel('Death Rate')
plt.legend()
plt.tight_layout()
plt.show()
```

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##  Key Insights

- The United States had the highest number of total cases and deaths.
- India experienced a steep rise in cases during mid-2021.
- Kenya's vaccination rollout started later and progressed more slowly.
- Death rates fluctuate and show spikes indicating critical periods.

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*Data Source: Our World in Data*
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