In [2]:

```
# Step 1: Import necessary libraries
import pandas as pd
import matplotlib.pyplot as plt

# Step 2: Load the dataset
# Make sure you have downloaded the dataset from the provided Kaggle link
# and specify the correct file path when reading it.
data = pd.read_csv('covid_vaccine_data.csv')  # Replace with your file path

# Step 3: Explore the dataset
# You can start by checking the first few rows of the dataset to understand its structure.
print(data.head())

# Step 4: Data preprocessing
# You may need to perform various data preprocessing tasks, depending on your analysis goals.
# Here are some common preprocessing tasks:

# Check for missing values
missing_values = data.isnull().sum()
print("Missing Values:\n", missing_values)

# Fill missing values (if necessary)
# Example: data['column_name'].fillna(value, inplace=True)

# Convert date columns to datetime
data['date'] = pd.to_datetime(data['date'])

# Step 5: Perform your analysis
# You can now perform your analysis on the preprocessed data.
# For example, you can create visualizations to understand the vaccine distribution over time.
```

```
# Example: Plot the daily vaccination progress
plt.figure(figsize=(12, 6))
plt.plot(data['date'], data['daily_vaccinations'], marker='o', linestyle='-')
plt.title('Daily Vaccination Progress')
plt.xlabel('Date')
plt.ylabel('Daily Vaccinations')
plt.grid()
plt.show()

# Step 6: Save the preprocessed data (if needed)
# If you want to save the preprocessed data for further analysis, you can use the following:
# data.to_csv('preprocessed_covid_vaccine_data.csv', index=False)

# Step 7: Further analysis
# Depending on your project's goals, you can perform various analyses such as calculating
# vaccination rates, regional analysis, and more.

# Don't forget to add your analysis code based on your project requirements.

# Step 8: Finalize and document your analysis
# Write down your findings, observations, and conclusions from the analysis.

# Remember to customize this code according to your specific analysis needs and goals.
```

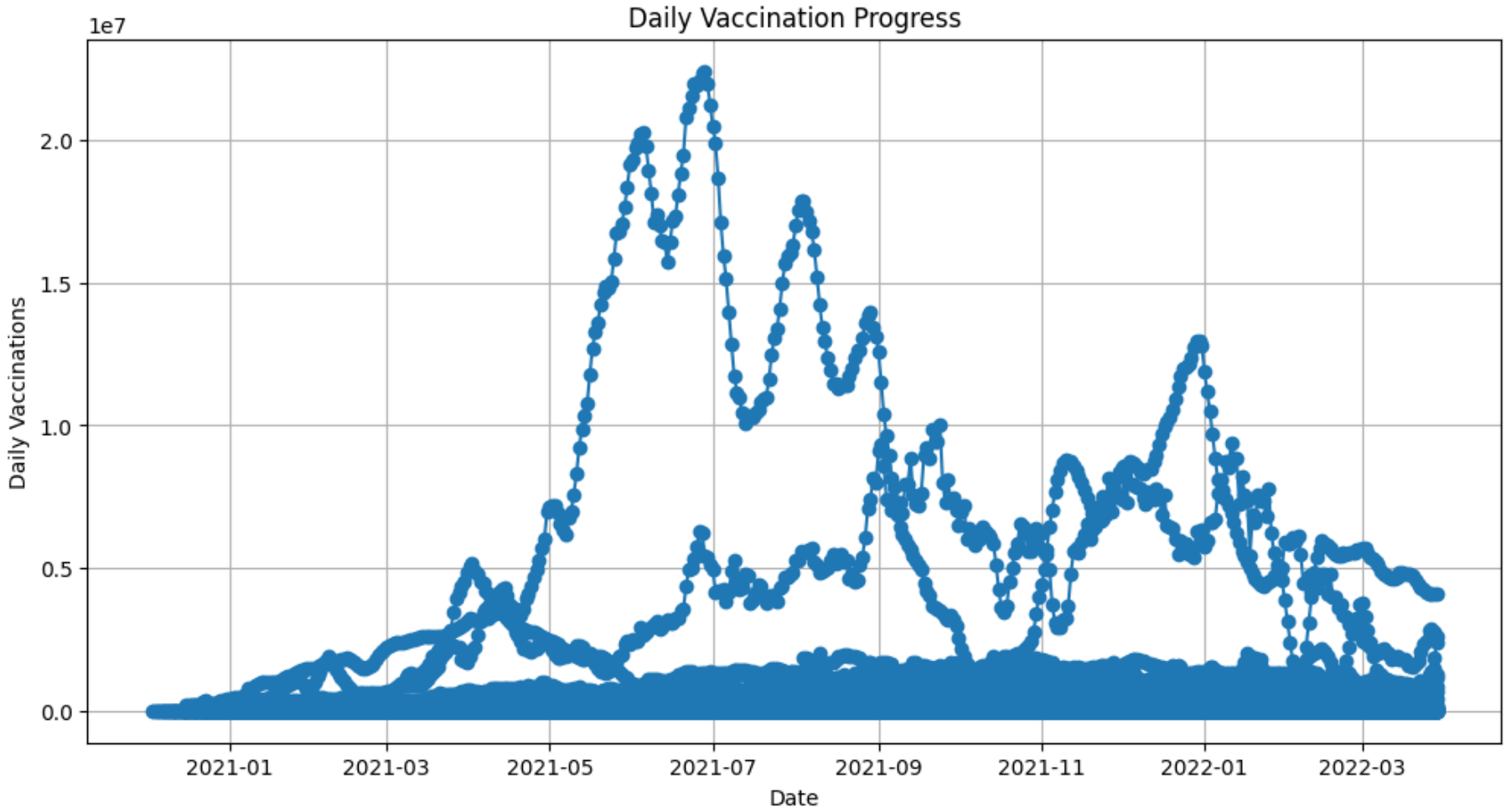
	country	iso_code	date	total_vaccinations	people_vaccinated	people_fully_vaccinated	daily_vaccinations_raw	daily_vaccinations
0	Afghanistan	AFG	2021-02-22	0.0	0.0	NaN	NaN	NaN
1	Afghanistan	AFG	2021-02-23	NaN	NaN	NaN	NaN	1367.0
2	Afghanistan	AFG	2021-02-24	NaN	NaN	NaN	NaN	1367.0
3	Afghanistan	AFG	2021-02-25	NaN	NaN	NaN	NaN	1367.0
4	Afghanistan	AFG	2021-02-26	NaN	NaN	NaN	NaN	1367.0

```
   total_vaccinations_per_hundred  people_vaccinated_per_hundred  \
0                             0.0                            0.0
1                             NaN                            NaN
2                             NaN                            NaN
3                             NaN                            NaN
4                             NaN                            NaN

   people_fully_vaccinated_per_hundred  daily_vaccinations_per_million  \
0                                  NaN                             NaN
1                                  NaN                            34.0
2                                  NaN                            34.0
3                                  NaN                            34.0
4                                  NaN                            34.0

                                        vaccines  \
0  Johnson&Johnson, Oxford/AstraZeneca, Pfizer/Bi...
1  Johnson&Johnson, Oxford/AstraZeneca, Pfizer/Bi...
2  Johnson&Johnson, Oxford/AstraZeneca, Pfizer/Bi...
3  Johnson&Johnson, Oxford/AstraZeneca, Pfizer/Bi...
4  Johnson&Johnson, Oxford/AstraZeneca, Pfizer/Bi...

                source_name            source_website
0  World Health Organization  https://covid19.who.int/
1  World Health Organization  https://covid19.who.int/
2  World Health Organization  https://covid19.who.int/
3  World Health Organization  https://covid19.who.int/
4  World Health Organization  https://covid19.who.int/
Missing Values:
 country                                0
iso_code                                0
date                                    0
total_vaccinations                  42905
people_vaccinated                   45218
people_fully_vaccinated             47710
daily_vaccinations_raw              51150
daily_vaccinations                    299
total_vaccinations_per_hundred      42905
people_vaccinated_per_hundred       45218
people_fully_vaccinated_per_hundred 47710
daily_vaccinations_per_million        299
vaccines                                0
source_name                             0
source_website                          0
dtype: int64
```


Daily Vaccination Progress
1e7
2.0
1.5
1.0
0.5
0.0
Daily Vaccinations
2021-01
2021-03
2021-05
2021-07
2021-09
2021-11
2022-01
2022-03
Date