PIE CHART

# -\*- coding: utf-8 -\*-

"""

Created on Thu Nov 9 23:16:40 2023

@author: Administrator

"""

import pandas as pd

import matplotlib.pyplot as plt

def plot\_pie\_chart\_covid\_cases(dataframe, time\_period):

"""

Function to create a pie chart for the distribution of COVID cases among countries.

Arguments:

dataframe -- A pandas DataFrame with countries as rows and time periods as columns.

time\_period -- A specific time period for which the pie chart is to be created.

"""

plt.figure(figsize=(8, 8))

# Extract data for the selected time period

data\_for\_time\_period = dataframe[time\_period]

# Plotting the pie chart

plt.pie(data\_for\_time\_period, labels=data\_for\_time\_period.index, autopct='%1.1f%%', startangle=140, colors=['blue', 'red', 'orange'])

plt.title(f'Distribution of COVID Cases among Countries')

# Save the figure as an image file (e.g., PNG)

plt.savefig(f'Covid\_Cases\_Pie\_Chart.png')

# Show the plot

plt.show()

return

# Read data from Excel file

file\_path = r'C:/Users/Administrator/downloads/CovidComparison.xlsx' # Using a raw string

covid\_df = pd.read\_excel(file\_path, index\_col=0)

# Choose a specific time period (e.g., the last one in the DataFrame)

selected\_time\_period = covid\_df.columns[0]

# Call the pie chart function

plot\_pie\_chart\_covid\_cases(covid\_df, selected\_time\_period)

LINE PLOT

# -\*- coding: utf-8 -\*-

"""

Created on Thu Nov 9 22:20:41 2023

@author: Administrator

"""

import pandas as pd

import matplotlib.pyplot as plt

def plot\_covid\_data(dataframe):

"""

Function to create a line plot for COVID cases and deaths.

Arguments:

dataframe -- A pandas DataFrame with time periods as columns and categories as rows.

"""

plt.figure(figsize=(16, 8))

for category in dataframe.index:

plt.plot(dataframe.columns, dataframe.loc[category], label=category)

plt.xlabel('Time Period')

plt.ylabel('Cases and Deaths')

plt.title('COVID Cases and Deaths in USA')

plt.legend()

plt.grid(True)

# Save the figure as an image file (e.g., PNG)

plt.savefig('Covid\_in\_USA\_Line\_Plot.png')

# Show the plot

plt.show()

return

# Read data from Excel file

file\_path = r'C:/Users/Administrator/downloads/CovidData.xlsx' # Using a raw string

covid\_df = pd.read\_excel(file\_path, index\_col=0)

# Call the plot function

plot\_covid\_data(covid\_df)

SCATTER PLOT

# -\*- coding: utf-8 -\*-

"""

Created on Thu Nov 9 22:20:41 2023

@author: Administrator

"""

import pandas as pd

import matplotlib.pyplot as plt

def plot\_scatter\_covid\_data(dataframe):

"""

Function to create a scatter plot for COVID cases and deaths.

Arguments:

dataframe -- A pandas DataFrame with time periods as columns and categories as rows.

"""

plt.figure(figsize=(12, 8))

# Scatter plot for each category

for category in dataframe.index:

plt.scatter(dataframe.columns, dataframe.loc[category], label=category, alpha=0.7)

plt.xlabel('Time Period')

plt.ylabel('Cases and Deaths')

plt.title('Scatter Plot of COVID Cases and Deaths in USA')

plt.legend()

plt.grid(True)

# Save the figure as an image file (e.g., PNG)

plt.savefig('Covid\_in\_USA\_Scatter\_Plot.png')

# Show the plot

plt.show()

return

# Read data from Excel file

file\_path = r'C:/Users/Administrator/downloads/CovidData.xlsx' # Using a raw string

covid\_df = pd.read\_excel(file\_path, index\_col=0)

# Call the scatter plot function

plot\_scatter\_covid\_data(covid\_df)