Final_project_plotting

November 24, 2021

0.1 Problem Statement: *Create a program that will be able to extract data from a csv file website, convert it to an numpy array, extract all of the unnecessary data, and plot them out on charts.*

1. Importing all of the necessary libraries.

[ ]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

2. Extract the data from a CSV file using pandas. Which will turn it into a pandas data frame. This data frame is stored in a variable called "arr".

[ ]:
```
df = pd.read_csv('https://data.cdc.gov/resource/9bhg-hcku.csv')
```

3. Convert the pandas data frame to numpy arrays for all of the data.

[ ]:
```
arr=df.to_numpy()
```

4. Slice the numpy array into different columns of data [start:end:column]. We need to do this in order to seprate Influensa, Covid-19 and Pnemonia data. And use 1 column for labels which in this case are the ages.

[ ]:
```
cdata=arr[1:17,9]
label=arr[1:17,8]

pdata=arr[1:17,11]

idata=arr[1:17,13]
```

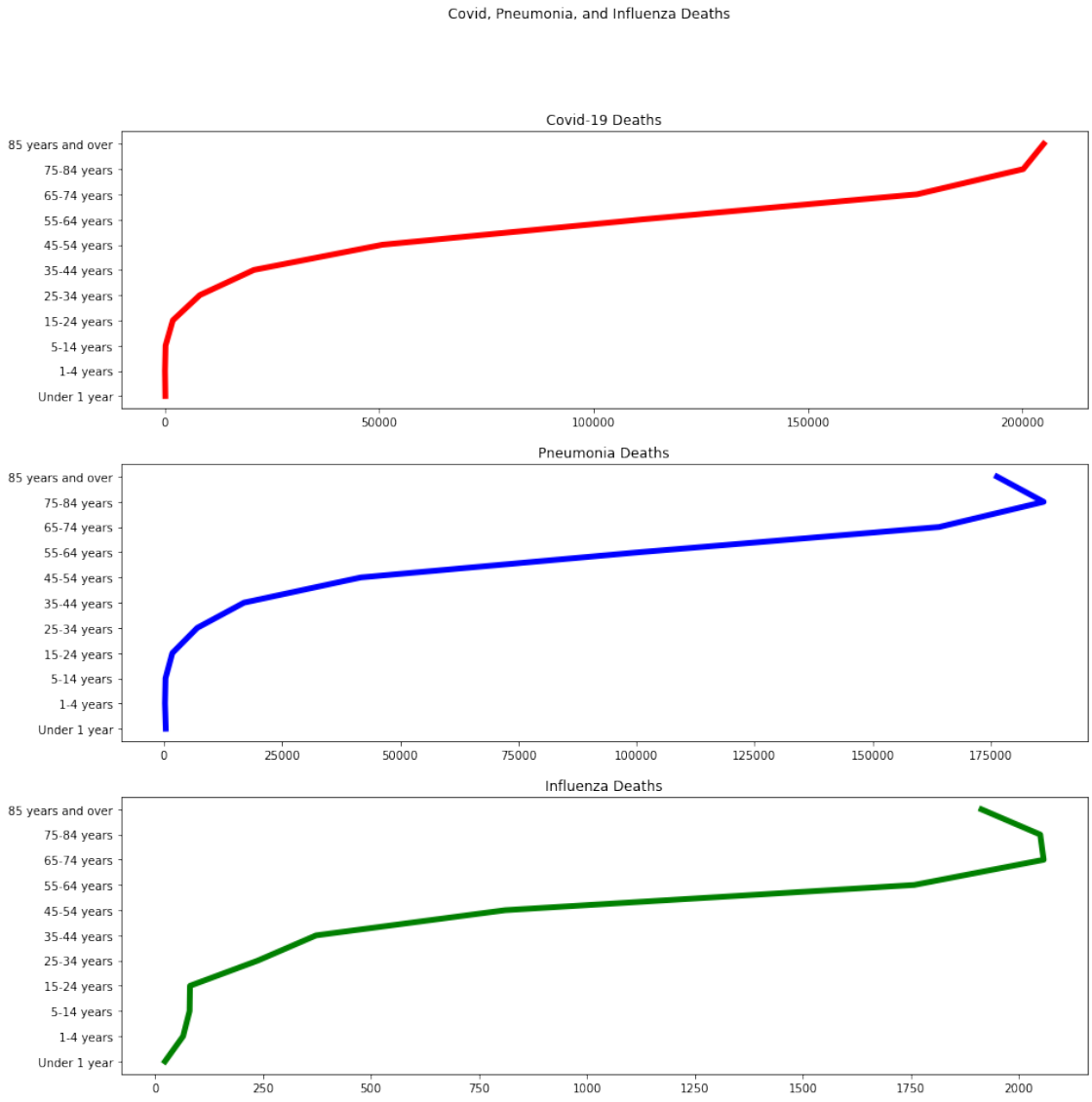
5. Delete all of the data points that include a range of numbers. These numbers will cause an unnecessary spike in the data. An example is if there is a age group from (1-4, 5-7, *3-9*, 8-12) then you have to *remove 3-9* as it will cause an overlap.

[ ]:
```
codata = np.delete(cdata, [1, 5, 7, 9, 11])
pndata = np.delete(pdata, [1, 5, 7, 9, 11])
allabel = np.delete(label, [1, 5, 7, 9, 11])
indata = np.delete(idata, [1, 5, 7, 9, 11])
```

6. Initiating a subplot to plot multiple graphs and stating the size of it.

[ ]:
```
fig, axs = plt.subplots( 3, figsize=(15,15))

#7

fig.suptitle('Covid, Pneumonia, and Influenza Deaths')

#8

axs[0].set_title("Covid-19 Deaths")
axs[1].set_title("Pneumonia Deaths")
axs[2].set_title("Influenza Deaths")

#9

axs[0].plot(codata, allabel, color='red', linewidth=5.0)
axs[1].plot(pndata, allabel, color='blue', linewidth=5.0,)
axs[2].plot(indata, allabel, color='green', linewidth=5.0,)
```

[ ]:
```
[<matplotlib.lines.Line2D at 0x22a0323ca90>]
```



7. Adding a overall title of the entire subplot.
8. Adding a title for each individual subplot.
9. Plotting the graphs based on data and labels, changing the color, line weight, and style.