

# Introducing: MentalMap

A database and visualization tool for  
mental health statistics all over the world

Created by: Tayana Roychowdhury



# Getting started

Welcome to MentalMap, a user-friendly tool and database allowing you to view and visualize mental health statistics for places around the world. Currently, we have statistics focusing on suicide rates.

To see the names of the countries or regions we have data for, enter a letter that the names should start with. Enter any other key to continue.

Enter your choice:

```
>>> e
Ecuador
El Salvador
Estonia
```

Enter your choice:

```
>>> n
Netherlands
New Zealand
Nicaragua
Norway
```

When you start the program, you can see all of the country/region names that MentalMap contains data for. MentalMap sources its data from this page on Kaggle:

<https://www.kaggle.com/datasets/russellyates88/suicide-rates-overview-1985-to-2016>

# Requirements for running

To run this program, you need to have the following third party libraries installed:

- NumPy
- Matplotlib

*matplotlib*





# Features: Exporting data



MentalMap allows the user to export raw data in the form of a csv file for any regions they desire. This feature is useful for people looking to do their own data analysis, and who want to export data without the inconvenience of copy-pasting from a file with over 27,000 lines..

```
Users can export raw data from our database in a csv file for any number of countries they choose. Would you like to export data?
```

```
Enter Y or N:
```

```
>>> Y
```

```
Please enter the proper name of the country/region for which you want data. Enter 'd' to remove your last choice. Enter 'done' to finish selecting.
```

```
Enter your choice:
```

```
>>> Denmark
```

```
Denmark
```

```
Enter your choice:
```

```
>>> Paraguay
```

```
Denmark Paraguay
```

```
Enter your choice:
```

```
>>> Macau
```

```
Denmark Paraguay Macau
```

```
Enter your choice:
```

```
>>> United States
```

```
Denmark Paraguay Macau United States
```

```
What should the file name be?  
Enter a name that ends with '.csv':  
>>> parrot.csv
```

```
Export data?  
Enter Y or N:  
>>> y  
Data successfully exported.
```



I chose to export data for Denmark, Paraguay, Macau, and the US in a file called “parrot.csv”, which the program saved to the same directory that it’s located in.

is PC > Windows (C:) > Users > tayan > AppData

☐ Name

__pycache__	1
customlib.py	1
finaldata.csv	1
mainprog.py	1
master.csv	1
parrot.csv	1
test.py	1
workingdata.csv	1

→ Here's the file that was exported.



# Features: Data visualization

MentalMap offers 2 different preset graphs for any country the user chooses to visualize data for. Both are line graphs: the first one plots all years of data for a country on the x-axis and the suicide rates for all age groups of a single sex on the y-axis. This graph compares ages for statistics in a country while keeping other variables constant.

Here's part of the method definition for the first graph:

```
def makeLineGraphAllAges(self, sex):
    stats = self.getStats()
    years = list(self.getYears())
    ages_5_to_14 = []
    ages_15_to_24 = []
    ages_25_to_34 = []
    ages_35_to_54 = []
    ages_55_to_74 = []
    ages_75over = []
    for year in years:
        for key in stats[year][sex].keys():
            y_value = stats[year][sex][key][1]
            if key == '5-14 years':
                ages_5_to_14.append(y_value)
            elif key == '15-24 years':
                ages_15_to_24.append(y_value)
            elif key == '25-34 years':
                ages_25_to_34.append(y_value)
            elif key == '35-54 years':
                ages_35_to_54.append(y_value)
            elif key == '55-74 years':
                ages_55_to_74.append(y_value)
            elif key == '75+ years':
                ages_75over.append(y_value)

    fig, ax = plt.subplots()
    ax.plot(years, ages_5_to_14, label='5-14 years')
```

# Features: Data visualization (cont.)

The second figure plots all years of data for a country on the x-axis and has two subplots: one showing graphs for male and female suicide rates, and another showing trends for male and female demographic population changes. The graph compares sexes for statistics in a country while holding other variables (i.e. age range) constant.

Here's part of the method definition for the second graph:

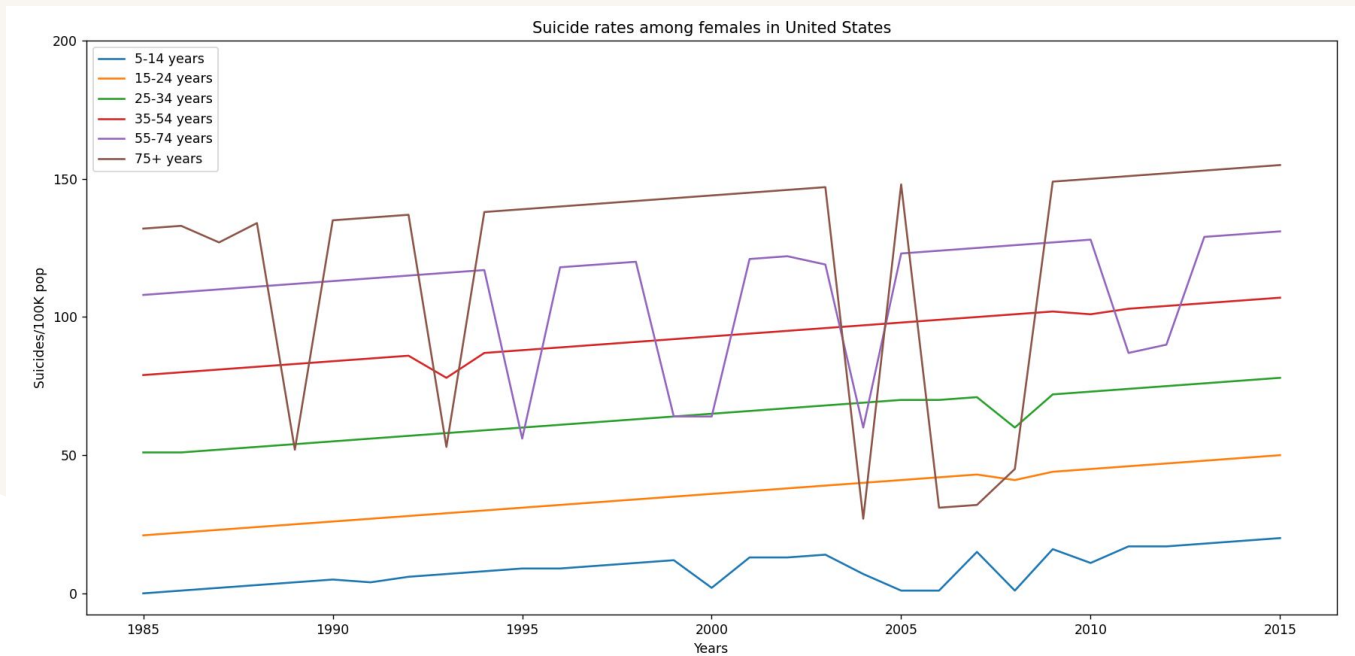
```
# makes line graph with all years on x-axis and plots suicides/100k people
# for one age group in both sexes
def makeLineGraphOneAge(self, age):
    stats = self.getStats()
    years = list(self.getYears())
    male_data = []
    female_data = []
    pop_male = []
    pop_female = []
    for year in years:
        male_rate = stats[year]["male"][age][1]
        male_data.append(male_rate)
        mpop = stats[year]["male"][age][0]
        pop_male.append(mpop)

        female_rate = stats[year]["female"][age][1]
        female_data.append(female_rate)
        fpop = stats[year]["female"][age][0]
        pop_female.append(fpop)

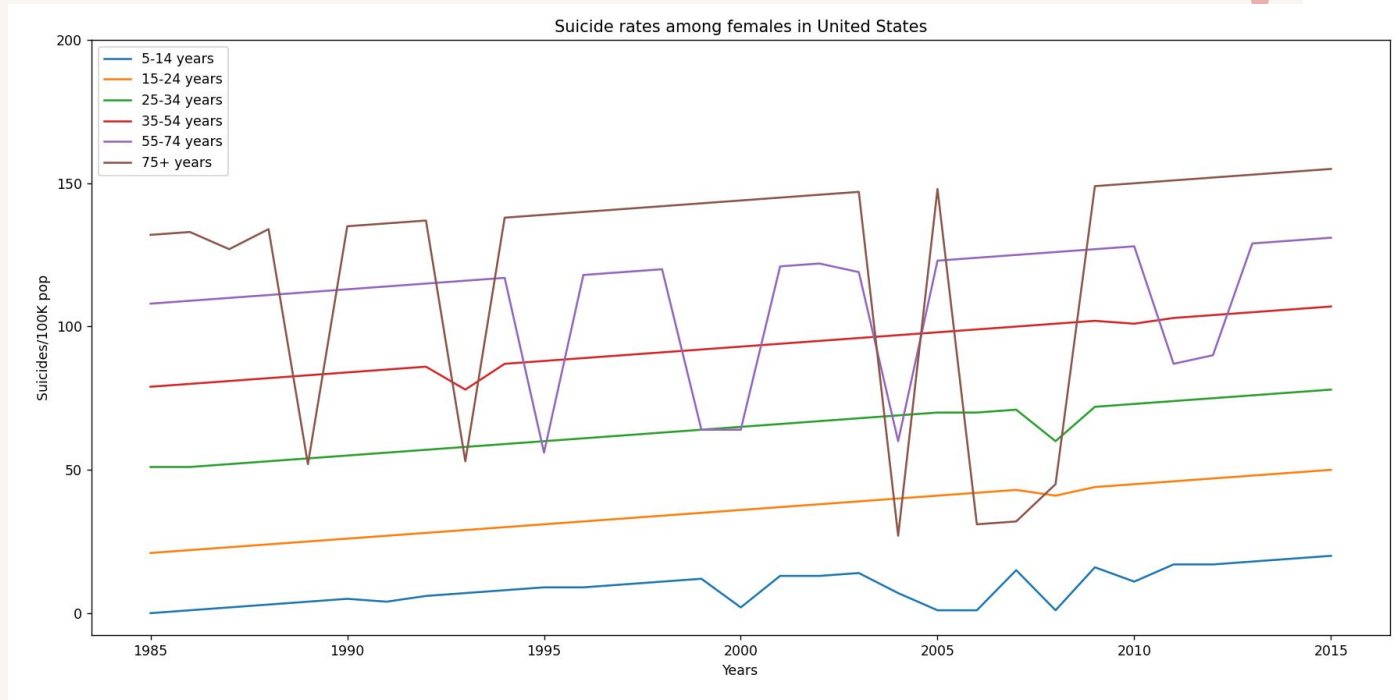
    fig, (ax1, ax2) = plt.subplots(2,1, sharex=True)
    ax1.plot(years, male_data)
    ax1.plot(years, female_data)
    ax1.set_yticks(np.arange(0, 250, 50))
    ax1.set_yticklabels(['0', '50', '100', '150', '200'])
    ax1.set_ylabel('Suicides/100K pop')
    ax1.legend(labels=['Female rate', 'Male rate'])
    ax1.set_title('Suicide rates in '+self.name+' for ages '+age)
```

# Features: Data visualization (cont.)

Here's the first method called on a CountryGraphs object containing stats for the United States:

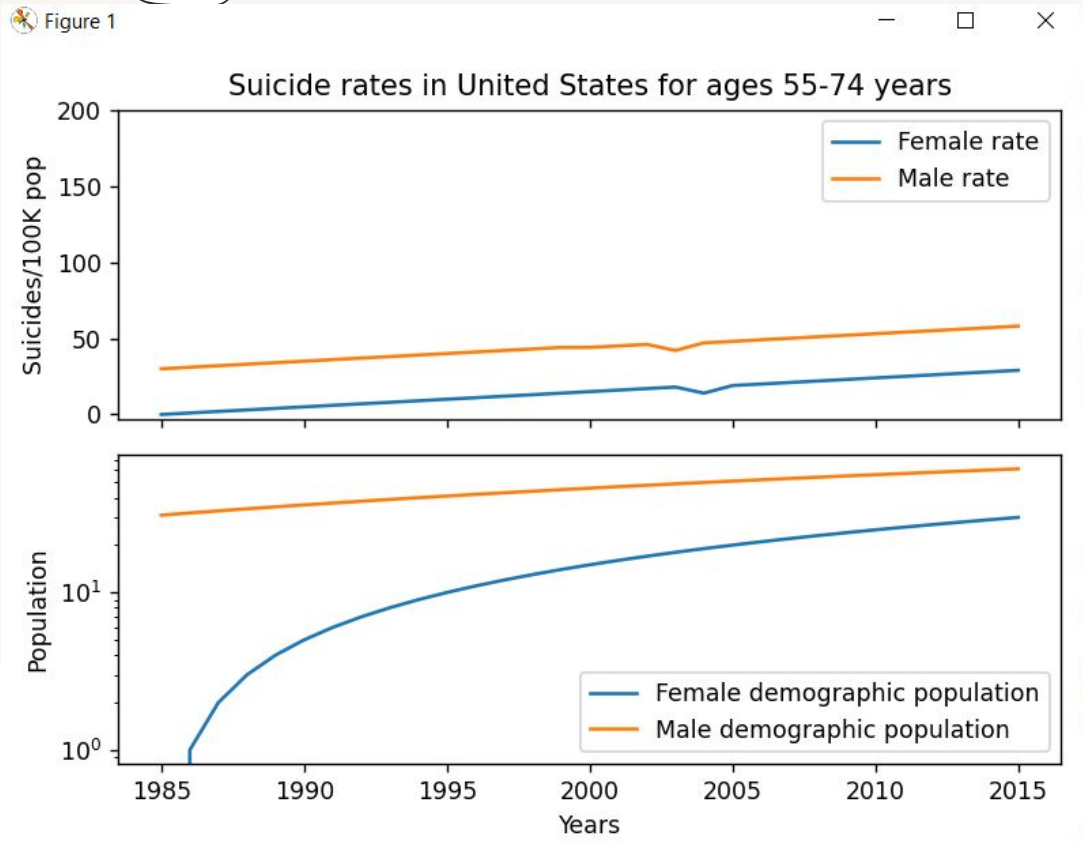






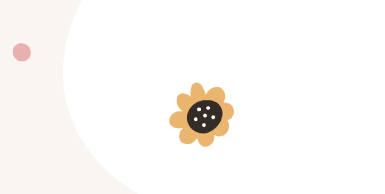

This graph shows a direct correlation between age and suicide rate (per 100K people in each age subset) for women in the United States.

# Features: Data visualization (cont.)



Here's the second method called on the same CountryGraphs object as before.

It shows that males in the United States committed suicide more often than women did for the years shown, and that this rate seems to be climbing for both men and women.



That's all we have right now. Thanks for using MentalMap.

Thanks for viewing my program! I hope that MentalMap will accomplish the goal of educating people about the realities of mental health statistics, one country and graph at a time.

