Untitled

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Script for 'swiss_residents' program in Python Licensed under the Apache License, Version 2.0 http://www.apache.org/licenses/LICENSE-2.0

The program parses a xlsx file containing the data of the swiss population over the years 1950-2019, and then produces bar plots of the results.

The initial file 'su-e-01.01.01.xlsx' is taken from the Swiss Federal Statistical Office repository repository: https://www.bfs.admin.ch/asset/en/su-e-01.01.01

[26]:
```
import matplotlib.pyplot as plt; plt.rcdefaults()
import pandas as pd
```

- Opens the xlsx file 'su-e-01.01.01.xlsx' from the Swiss Federal Statistical Office repository;
- Puts its data in the dataframe df:

[27]:
```
url = 'https://www.bfs.admin.ch/bfsstatic/dam/assets/17104142/master'
df = pd.read_csv(url, sep=';')
```

- Collects the data of the swiss, foreign, male and female populations:

[28]:
```
swiss_population = df.loc[(df['SEX'] == 'T') & (df['CITIZENSHIP_CATEGORY'] ==␣
↪'CH')]
foreign_population = df.loc[(df['SEX'] == 'T') & (df['CITIZENSHIP_CATEGORY'] ==␣
↪'F')]
male_population = df.loc[(df['SEX'] == 'M') & (df['CITIZENSHIP_CATEGORY'] ==␣
↪'T')]
female_population = df.loc[(df['SEX'] == 'F') & (df['CITIZENSHIP_CATEGORY'] ==␣
↪'T')]
```

[29]:
```
years = swiss_population['YEAR']
males = male_population['VALUE']
females = female_population['VALUE']
swiss = swiss_population['VALUE']
foreign = foreign_population['VALUE']
```

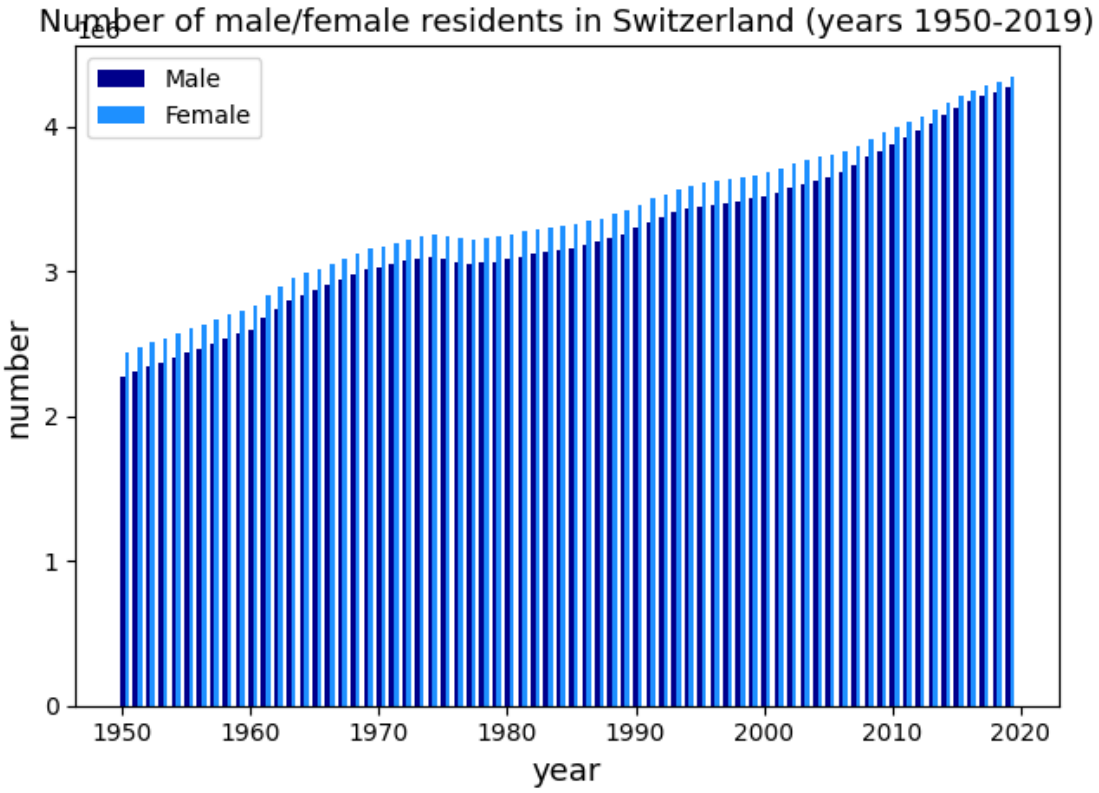
- Creates a multiple plot figure;
- Fixes the width of the bars (1 = maximal width);
- Creates the bar charts;
- Defines the titles and legend;
- Plots the resulting figure:

[30]:
```
fig, ax = plt.subplots()
width = 0.35

ax.bar(years, males, width, color='darkblue', label='Male')
ax.bar(years+width, females, width, color='dodgerblue', label='Female')

plt.title('Number of male/female residents in Switzerland (years 1950-2019)',␣
 ↪fontsize=13)
plt.xlabel('year', fontsize=13)
plt.ylabel('number', fontsize=13)
ax.legend()

plt.tight_layout()
plt.show()
```



- Fixes a new width of the bars (1 = maximal width);
- Creates a second bar chart;
- Defines the titles and legend;
- Plots the resulting figure:

[31]:
```
width_bis = 0.5

p1 = plt.bar(years, swiss, width_bis, color='royalblue', label='Swiss')
p2 = plt.bar(years, foreign, width_bis, color='lightskyblue', bottom=swiss,␣
 ↪label='Foreign')

plt.title('Number of swiss/foreign residents in Switzerland (years 1950-2019)',␣
 ↪fontsize=13)
plt.xlabel('year', fontsize=13)
plt.ylabel('number', fontsize=13)
plt.legend()

plt.tight_layout()
plt.show()
```