

410921208 楊右宇

```
from selenium import webdriver
from time import sleep
from selenium.webdriver.common.by import By
from selenium.webdriver.chrome.service import Service
import matplotlib.pyplot as plt
import matplotlib.image as img
import requests
import pandas as pd
import numpy as np
```

```
plt.rcParams['font.sans-serif']=['Microsoft JhengHei'] # 自訂字體
plt.rcParams['axes.unicode_minus']=False # 為了正常顯示正負號
```

```
df = pd.read_csv("marriageTaoyuanData.csv")
df = df.drop(['Nationality - Female', 'Mainland Hong Kong and Macao Regions - Female', 'Foreign Nationality - Female'], 1)
```

```
fig = plt.figure(figsize = (16, 16), facecolor = "lightblue")
fig.suptitle('Taoyuan Marriage Population', fontsize=16)
```

```
width = 0.4
ax1 = fig.add_subplot(211)
bars1 = ax1.barh(df.iloc[:, 0] + width / 2, df.iloc[:, 1], height=width, label='Male',
tick_label = df.iloc[:, 0])
bars2 = ax1.barh(df.iloc[:, 0] - width / 2, df.iloc[:, 2], height=width, label='Female')
ax1.bar_label(bars1, color='blue')
ax1.bar_label(bars2, color='orange')
```

```
plt.xlabel("population")
plt.ylabel("year")
plt.title("Total marriage population")
plt.legend(loc=4)
```

```
ax2 = fig.add_subplot(212)
```

```

ax2.bar(df.iloc[:, 0], df.iloc[:, 5], tick_label = df.iloc[:, 0], label='Foreign')
ax2.bar(df.iloc[:, 0], df.iloc[:, 4], bottom=0, label='Mainland')
plt.xticks(rotation = 90)
plt.xlabel('year')
plt.ylabel('population')
plt.title("Mainland & Foreign marriage population")
plt.legend(loc=2)

plt.tight_layout()
df

```

```

In [60]: from selenium import webdriver
from time import sleep
from selenium.webdriver.common.by import By
from selenium.webdriver.chrome.service import Service
import matplotlib.pyplot as plt
import matplotlib.image as img
import requests
import pandas as pd
import numpy as np

plt.rcParams['font.sans-serif']=['Microsoft JhengHei'] # 自訂字體
plt.rcParams['axes.unicode_minus']=False # 為了正常顯示正負號

df = pd.read_csv("marriageTaoyuanData.csv")
df = df.drop(['Nationality - Female', 'Mainland Hong Kong and Macao Regions - Female', 'Foreign Nationality - Female'], 1)

fig = plt.figure(figsize = (16, 16), facecolor = "lightblue")
fig.suptitle('Taoyuan Marriage Population', fontsize=16)

width = 0.4
ax1 = fig.add_subplot(211)
bars1 = ax1.barh(df.iloc[:, 0] + width / 2, df.iloc[:, 1], height=width, label='Male', tick_label = df.iloc[:, 0])
bars2 = ax1.barh(df.iloc[:, 0] - width / 2, df.iloc[:, 2], height=width, label='Female')
ax1.bar_label(bars1, color='blue')
ax1.bar_label(bars2, color='orange')

plt.xlabel("population")
plt.ylabel("year")
plt.title("Total marriage population")
plt.legend(loc=4)

```

```

ax2 = fig.add_subplot(212)
ax2.bar(df.iloc[:, 0], df.iloc[:, 5], tick_label = df.iloc[:, 0], label='Foreign')
ax2.bar(df.iloc[:, 0], df.iloc[:, 4], bottom=0, label='Mainland')
plt.xticks(rotation = 90)
plt.xlabel('year')
plt.ylabel('population')
plt.title("Mainland & Foreign marriage population")
plt.legend(loc=2)

plt.tight_layout()
df

```

Out[60]:

	Year	Total - Male	Total - Female	Nationality - Male	Mainland Hong Kong and Macao Regions - Male	Foreign Nationality - Male
0	2004	11887	11887	11553	29	305
1	2005	13167	13167	12847	48	272
2	2006	13307	13307	13012	48	247
3	2007	12512	12512	12249	65	198
4	2008	14591	14591	14268	77	246
5	2009	10938	10938	10624	78	236
6	2010	12926	12926	12559	86	281
7	2011	15525	15525	15161	101	263
8	2012	13621	13621	13213	126	282
9	2013	13679	13679	13283	118	278
10	2014	13839	13839	13418	118	303
11	2015	15507	15507	15071	144	292
12	2016	15048	15048	14585	125	338
13	2017	14648	14648	14137	144	367
14	2018	14544	14544	13967	172	405
15	2019	13957	14189	13348	190	419
16	2020	13037	13299	12670	79	288



