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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.common.by import By
from selenium.webdriver.common.by import By
from selenium.webdriver.chrome.service import Service
import matplotlib.jnage as jnt
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 # 為了正常體示正真聲

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(bars1, color='blue')
    ax1.bar_label(bars2, color='orange')

plt.xlabel("population")
    plt.vilabel("year")
    plt.vilabel("rotal marriage population")
    plt.vilabel("rotal marriage population")
    plt.vilabel("rotal marriage population")
```

```
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.tlegend(loc=2)

plt.tight_layout()
df
```

Out[60]:

1 2005 13167 13167 12847 48 27 2 2006 13307 13307 13012 48 24 3 2007 12512 12512 12249 65 15 4 2008 14591 14591 14268 77 24 5 2009 10938 10938 10624 78 23 6 2010 12926 12926 12559 86 26 7 2011 15525 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 14585 125 33 13 2017 14648 14137 144 36 14 2018		Year	Total - Male	Total - Female	Nationality - Male	Mainland Hong Kong and Macao Regions - Male	Foreign Nationality - Male
2 2006 13307 13307 13012 48 24 3 2007 12512 12512 12249 65 15 4 2008 14591 14591 14268 77 24 5 2009 10938 10938 10624 78 23 6 2010 12926 12926 12559 86 28 7 2011 15525 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 14137 144 36 14 2018 14544 14544 13967 172 46 15 2019	0	2004	11887	11887	11553	29	305
3 2007 12512 12512 12249 65 18 4 2008 14591 14591 14268 77 24 5 2009 10938 10938 10624 78 23 6 2010 12926 12926 12559 86 26 7 2011 15525 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 144137 144 36 14 2018 14544 14544 13967 172 46 15 2019 13957 14189 13348 190 44	1	2005	13167	13167	12847	48	272
4 2008 14591 14591 14268 77 24 5 2009 10938 10938 10624 78 23 6 2010 12926 12926 12559 86 26 7 2011 15525 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 14137 144 36 14 2018 14544 14544 13967 172 46 15 2019 13957 14189 13348 190 44	2	2006	13307	13307	13012	48	247
5 2009 10938 10938 10624 78 23 6 2010 12926 12926 12559 86 26 7 2011 15525 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 14137 144 36 14 2018 14544 14544 13967 172 46 15 2019 13957 14189 13348 190 44	3	2007	12512	12512	12249	65	198
6 2010 12926 12926 12559 86 26 7 2011 15525 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 46 15 2019 13957 14189 13348 190 44	4	2008	14591	14591	14268	77	246
7 2011 15625 15525 15161 101 26 8 2012 13621 13621 13213 126 28 9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 14137 144 36 14 2018 14544 14544 13967 172 46 15 2019 13957 14189 13348 190 44	5	2009	10938	10938	10624	78	236
8 2012 13621 13621 13213 126 28 9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 16048 14585 125 33 13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 44	6	2010	12926	12926	12559	86	281
9 2013 13679 13679 13283 118 27 10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 28 12 2016 15048 15048 14585 125 33 13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 44	7	2011	15525	15525	15161	101	263
10 2014 13839 13839 13418 118 30 11 2015 15507 15507 15071 144 25 12 2016 15048 15048 14585 125 33 13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 44	8	2012	13621	13621	13213	126	282
11 2015 15507 15507 15071 144 25 12 2016 15048 15048 14585 125 33 13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 41	9	2013	13679	13679	13283	118	278
12 2016 15048 15048 14585 125 33 13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 41	10	2014	13839	13839	13418	118	303
13 2017 14648 14648 14137 144 36 14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 41	11	2015	15507	15507	15071	144	292
14 2018 14544 14544 13967 172 40 15 2019 13957 14189 13348 190 41	12	2016	15048	15048	14585	125	338
15 2019 13957 14189 13348 190 41	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 28	16	2020	13037	13299	12670	79	288



