population-v2

July 30, 2021

[29]:
```
import csv
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
```

[30]:
```
data: [] = list()
home: [] = list()
aways: object = None
result_name: str = ''
```

[31]:
```
#df = pd.read_csv('./data/202106_202106.population -v2.csv', encoding='UTF-8',␣
 ↪thousands=',', index_col=0)
#df.to_csv('./data/202106_202106.population -v2.csv', sep=',', na_rep='NaN')
data = csv.reader(open('./data/202106_202106.population -v2.csv', 'rt',␣
 ↪encoding='UTF-8'))
next(data)
data = list(data)
```

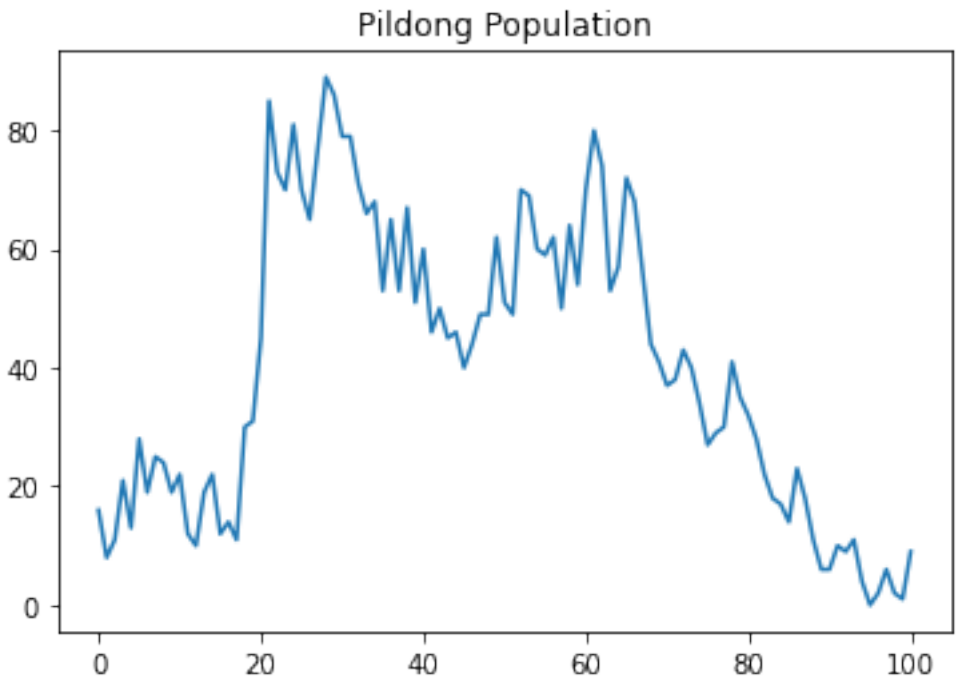
[32]:
```
#print(data)
```

[33]:
```
home = []
[home.append(int(j)) for i in data if ' ' in i[0] for j in i[3:]]
print(home)
```

```
[16, 8, 11, 21, 13, 28, 19, 25, 24, 19, 22, 12, 10, 19, 22, 12, 14, 11, 30, 31,
45, 85, 73, 70, 81, 70, 65, 77, 89, 86, 79, 79, 71, 66, 68, 53, 65, 53, 67, 51,
60, 46, 50, 45, 46, 40, 44, 49, 49, 62, 51, 49, 70, 69, 60, 59, 62, 50, 64, 54,
70, 80, 74, 53, 57, 72, 68, 56, 44, 41, 37, 38, 43, 40, 34, 27, 29, 30, 41, 35,
32, 28, 22, 18, 17, 14, 23, 18, 11, 6, 6, 10, 9, 11, 4, 0, 2, 6, 2, 1, 9]
```

[34]:
```
plt.title('Pildong Population')
plt.plot(home)
```

[34]:
```
[<matplotlib.lines.Line2D at 0x7f9c3f450e20>]
```



[35]:
```
np.array(home)
```

[35]:
```
array([16,  8, 11, 21, 13, 28, 19, 25, 24, 19, 22, 12, 10, 19, 22, 12, 14,
       11, 30, 31, 45, 85, 73, 70, 81, 70, 65, 77, 89, 86, 79, 79, 71, 66,
       68, 53, 65, 53, 67, 51, 60, 46, 50, 45, 46, 40, 44, 49, 49, 62, 51,
       49, 70, 69, 60, 59, 62, 50, 64, 54, 70, 80, 74, 53, 57, 72, 68, 56,
       44, 41, 37, 38, 43, 40, 34, 27, 29, 30, 41, 35, 32, 28, 22, 18, 17,
       14, 23, 18, 11,  6,  6, 10,  9, 11,  4,  0,  2,  6,  2,  1,  9])
```

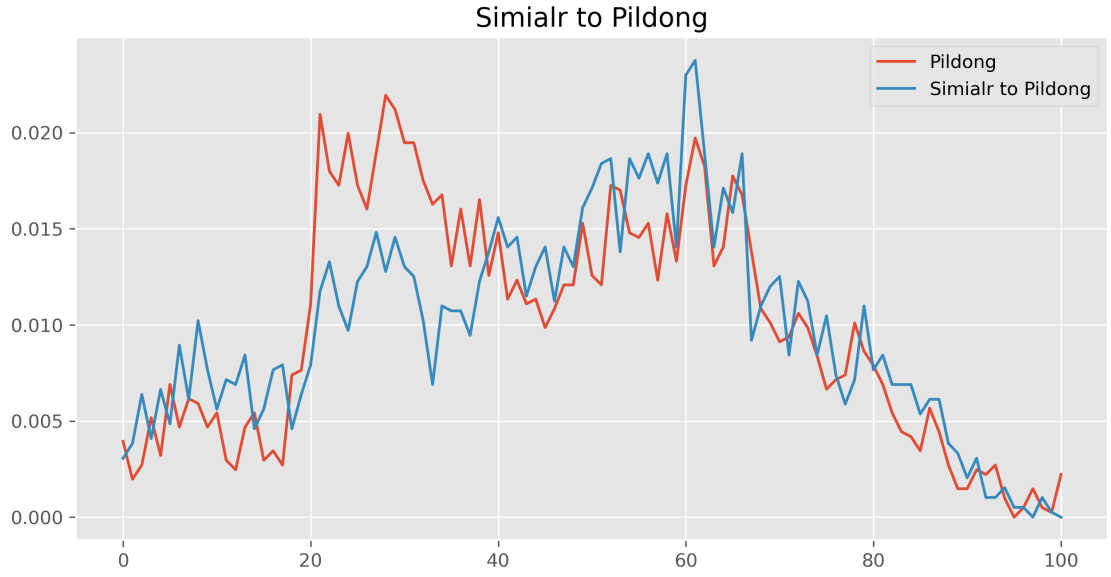
[39]:
```
mn = 1
result = 0
home = []
for i in data:
    if ' ' in i[0]:
        home = np.array(i[3:], dtype=int)/int(i[2])
```

[40]:
```
result_name=''
away= []
for i in data:
    away = np.array(i[3:], dtype=int)/ int(i[2])
    s = np.sum((home - away)**2)
    if s < mn and ' ' not in i[0]:
        mn = s
        result_name = i[0]
```

```
        result = away
aways = result
```

```
<ipython-input-40-5c8a73aca1b4>:4: RuntimeWarning: invalid value encountered in
true_divide
  away = np.array(i[3:], dtype=int)/ int(i[2])
```

[41]:
```
plt.style.use('ggplot')
plt.figure(figsize=(10, 5), dpi=300)
plt.title('Simialr to Pildong')
plt.plot(home, label='Pildong')
plt.plot(away, label='Simialr to Pildong')
plt.legend()
plt.show()
```



[ ]:
```

```