

《用 Python 玩转数据》数据比较图绘制

请将 Intel 和 IBM 公司近一年来每个月开票价的平均值绘制在一张图中（用 `subplot()` 或 `subplots()` 函数）。

【参考程序见下一页】

```
# -*- coding: utf-8 -*-
```

```
"""
```

```
Count days
```

```
@author: Dazhuang
```

```
"""
```

```
import requests
```

```
import re
```

```
import json
```

```
import pandas as pd
```

```
import matplotlib.pyplot as plt
```

```
from datetime import date
```

```
import time
```

```
def retrieve_quotes_historical(stock_code):
```

```
    quotes = []
```

```
    url = 'https://finance.yahoo.com/quote/%s/history?p=%s' % (stock_code, stock_code)
```

```
    r = requests.get(url)
```

```
    m = re.findall('"HistoricalPriceStore":{"prices":(.*?), "isPending"', r.text)
```

```
    if m:
```

```
        quotes = json.loads(m[0])
```

```
        quotes = quotes[::-1]
```

```
    return [item for item in quotes if not 'type' in item]
```

```
def create_aveg_open(stock_code):
```

```
    quotes = retrieve_quotes_historical(stock_code)
```

```
    list1 = []
```

```
    for i in range(len(quotes)):
```

```
        x = date.fromtimestamp(quotes[i]['date'])
```

```
        y = date.strftime(x, '%Y-%m-%d')
```

```
        list1.append(y)
```

```
    quotesdf_ori = pd.DataFrame(quotes, index = list1)
```

```
    listtemp = []
```

```
    for i in range(len(quotesdf_ori)):
```

```
        temp = time.strptime(quotesdf_ori.index[i], "%Y-%m-%d")
```

```
        listtemp.append(temp.tm_mon)
```

```
    tempdf = quotesdf_ori.copy()
```

```
    tempdf['month'] = listtemp
```

```
    meanopen = tempdf.groupby('month').open.mean()
```

```
    return meanopen
```

```
open1 = create_aveg_open('INTC')
open2 = create_aveg_open('IBM')
plt.subplot(211)
plt.plot(open1.index,open1.values,color='r',marker='o')
plt.subplot(212)
plt.plot(open1.index,open2.values,color='green',marker='o')
```