

# 商管程式設計（107-2）

## 第二次期中考

題目設計：盧信銘  
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截止時間：2019 年 5 月 6 日下午 12 點 10 分

程式請上傳至 PDOGS (<http://pdogs.ntu.im/judge/>)。為各題上傳一份 Python 3.5 原始碼 (以複製貼上原始碼的方式上傳)。題目自己做。不接受紙本繳交，不接受遲交。請以英文或中文作答。作弊被確認者，整門課的成績將直接被評為 F，沒有第二種可能（也不能停修）。

本次期中考共有四題，總分最高一百分。如果你各題的分數加起來超過一百分的話，會以一百分計算。

所有題目的分數都由程式運算的正確性給分，一筆測試資料佔 2 分。你可以使用任何方法回答問題 (包含課堂上沒教的)。你可以使用任何 Python 3.5 內建的模組，如 `math`, `datetime`, `csv`, `sys` 等。然而，你不可以使用非 Python 3.5 內建的模組 (比如說 `csvsorter`, `numpy` 或 `sklearn` 等)，如有使用當題以 0 分計算。

### 第一題

(30 points) [生日星期幾] 寫一個程式，由使用者輸入生日資料，資料格式為 Year/Month/Day (如 2002/12/11)，每行一筆資料。你的程式必須不斷的由使用者讀入資料，直到使用者輸入“BREAK”為止。計算在這些資料中，分別有幾個日期是在星期一、星期二、...、星期六、星期日。然後輸出。輸出的格式範例如下：

1	23
2	40
3	50
4	12
5	56
6	29
7	7

輸出共七行，各代表星期一 (1) 至星期日 (7)。每行的第一個數字代表是星期幾，第二個數字代表有幾個。兩個數字間應有一個空格。如果輸入的資料不符合預期格式，應輸出 "DATA\_ERROR"。

範例輸入

```
2019/04/01
2019/04/02
2019/04/03
2019/4/4
2019/4/5
2019/4/6
2019/4/7
2019/4/8
2019/4/9
2019/4/10
2029/4/11
2020/4/22
2020/4/23
BREAK
```

範例輸出

```
1 2
2 2
3 4
4 2
5 1
6 1
7 1
```

範例輸入

```
BREAK
```

範例輸出

```
1 0
2 0
3 0
4 0
5 0
6 0
7 0
```

範例輸入

```
101/1/2
102-3-4
BREAK
```

範例輸出

DATA_ERROR
------------

## 第二題

(30 points) [去週期性] 在處理時間數列的資料時，我們時常會遇到數列有週期性。去除週期性的方法有很多，本題將考慮一個使用歷史中位數的去週期性方法。假設我們要處理週期為  $C$  的時間數列，則我們去週期性的方法為

$$x_t = y_t - \text{median}([y_{t-C}, y_{t-2C}, y_{t-3C}, y_{t-4C}, y_{t-5C}]),$$

其中  $y_1, y_2, \dots, y_T$  為一個時間數列，我們針對第  $t$  期的資料  $y_t$  減去過去五個位在同一個週期位置的資料的中位數，得到第  $t$  期去週期的時間數列值  $x_t$ 。

為了簡化問題，我們考慮的週期為 7 ( $C=7$ )。

寫一個程式，由使用者讀入一個時間數列，然後輸出去週期性的時間數列。讀入資料時每行一筆，直到遇到“BREAK”為止。輸出時應去除前  $C$  期的資料，由第  $C+1$  期開始輸出。如果資料的歷史不足五個，則使用可取得的部分套入去週期性公式。比如說，如果要處理第 8 期的資料，則計算  $x_8 = y_8 - y_1$ 。另外集合個數為偶數時，取位在中間的兩個數的平均數為中位數。

輸出時每行一個數字，四捨五入至小數第二位。如果輸入的資料含有非數值資料，則輸出“DATA\_ERROR”。如果資料內容皆為數值資料但小於八筆，則輸出“NOT\_ENOUGH\_DATA”。

範例輸入

54
83
312
368
142
136
255
61
137
235
413
130
82
197
169
87

84  
281  
291  
156  
101  
236  
251  
78  
81  
203  
254  
195  
38  
165  
100  
112  
104  
255  
357  
90  
1  
154  
162  
123  
109  
212  
266  
123  
162  
248  
158  
78  
98  
305  
367  
237  
39  
197  
129  
82  
116  
207  
418  
100  
54  
269  
228  
212  
141

```
264
320
73
128
194
265
217
77
341
356
93
10
230
241
86
54
363
328
117
92
208
200
149
155
335
419
164
176
130
239
135
106
301
336
128
BREAK
```

#### 範例輸出

```
7.00
54.00
-77.00
45.00
-12.00
-54.00
-58.00
111.50
-23.00
-189.50
```

-109.50  
155.00  
47.00  
-125.00  
175.00  
164.00  
-157.00  
-287.00  
61.00  
118.00  
-2.00  
-77.00  
53.00  
-59.50  
-212.50  
-68.50  
109.00  
161.00  
29.00  
-136.00  
54.00  
-119.00  
-19.00  
-47.00  
15.00  
176.00  
-14.00  
62.00  
86.00  
28.00  
-78.00  
-99.00  
136.00  
244.00  
137.00  
-123.00  
39.00  
-27.00  
-113.00  
-120.00  
42.00  
264.00  
-12.00  
-104.00  
140.00  
33.00  
96.00  
-24.00  
102.00

208.00  
-50.00  
-1.00  
-18.00  
53.00  
76.00  
-160.00  
179.00  
233.00  
-35.00  
-184.00  
-35.00  
34.00  
-151.00  
-194.00  
205.00  
200.00  
19.00  
-138.00  
-9.00  
-37.00  
49.00  
-42.00  
206.00  
302.00  
-48.00  
-32.00  
-70.00  
90.00  
-20.00  
-163.00  
107.00  
124.00  
-80.00

#### 範例輸入

97  
71  
257  
368  
184  
108  
269  
154  
149  
279  
352  
77

78  
264  
207  
85  
100  
235  
298  
185  
19  
209  
105  
169  
103  
322  
293  
192  
125  
157  
113  
199  
182  
368  
283  
213  
1  
119  
254  
138  
163  
355  
255  
159  
115  
150  
181  
105  
168  
218  
314  
86  
180  
119  
140  
167  
125  
330  
303  
141  
156



260  
137  
183  
58  
224  
332  
144  
1  
220  
268  
147  
109  
251  
246  
165  
175  
159  
187  
163  
38  
356  
371  
173  
171  
264  
208  
150  
98  
272  
388  
236  
94  
137  
126  
206  
31  
322  
319  
228  
85  
143  
240  
98  
168  
297  
278  
161  
59  
193

```
242
212
102
243
304
128
89
166
188
203
57
378
412
75
89
133
104
193
182
329
398
233
74
108
269
102
165
289
260
116
1
192
221
114
126
246
352
84
179
BREAK
```

範例輸出

```
57.00
78.00
22.00
-16.00
-107.00
-30.00
```

-5.00  
81.50  
-25.00  
-168.00  
-125.00  
167.50  
92.00  
-247.50  
55.00  
20.00  
-88.00  
-249.00  
138.00  
185.00  
-72.00  
-55.50  
62.00  
-100.00  
-94.50  
-59.00  
221.50  
55.00  
59.00  
-104.00  
-50.00  
19.00  
-46.00  
-22.00  
91.00  
48.00  
54.00  
-4.00  
-85.00  
-1.00  
-80.00  
-96.00  
9.00  
209.00  
-29.00  
-19.00  
-63.00  
-45.00  
-25.00  
-88.00  
173.00  
188.00  
-39.00  
-25.00  
97.00

-55.00  
-30.00  
-101.00  
109.00  
152.00  
-12.00  
-162.00  
52.00  
55.00  
-12.00  
-10.00  
71.00  
102.00  
25.00  
7.00  
-59.00  
28.00  
48.00  
-142.00  
200.00  
231.00  
5.00  
-12.00  
77.00  
45.00  
-30.00  
-58.00  
107.00  
215.00  
65.00  
-93.00  
-71.00  
-24.00  
50.00  
-229.00  
147.00  
136.00  
81.00  
-78.00  
-7.00  
34.00  
-67.00  
-52.00  
61.00  
91.00  
24.00  
-84.00  
-47.00  
77.00

37.00  
-134.00  
15.00  
143.00  
2.00  
-117.00  
-76.00  
-24.00  
-33.00  
-186.00  
217.00  
284.00  
-118.00  
-77.00  
-79.00  
-132.00  
-35.00  
21.00  
201.00  
205.00  
135.00  
-114.00  
-95.00  
41.00  
-80.00  
22.00  
96.00  
94.00  
-52.00  
-107.00  
-51.00  
39.00  
-51.00  
-67.00  
13.00  
219.00  
-20.00  
-14.00

範例輸入

1  
2  
3  
4  
5  
6  
7  
2

```
3
4
5
6
7
8
3
4
5
BREAK
```

範例輸出

```
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.50
1.50
1.50
```

範例輸入

```
1
2
4
DD
BREAK
```

範例輸出

```
DATA_ERROR
```

### 第三題

(30 points) [數字列] 寫一個程式，由使用者讀入一個文字檔的檔名，然後找尋該檔案中包含最多數字與相關符號的列，依序（由多到少）印出其中十列，並在每列前以 "@line\_no: " 註明其原本的列號（由 1 開始）。原文每行末尾之空白（包含半形空格、tab 和換行符號）應移除。除此之外，不對內容做其他修改。如果有兩行的數字與相關符號與數量相同，依照其在文件中出現的先後排序。

文字檔是 UTF-8 編碼。文字檔必定具有至少十行內容。我們定義數字與相關符號為下列字元：0123456789(),\$

範例輸入

```
testfile1.txt
```

範例輸出

```
@831: Net Sales                                $ 72,167,233
$ 62,445,175      $ 38,744,129      $ 23,214,020      $ 21,051,818
@838: Total Assets                                $ 12,879,737
$ 13,350,996      $ 10,205,006      $ 6,432,589      $ 5,783,427
@840: Long-term debt                                $ 5,576,663
$ 5,597,490      $ 3,119,578      $ 1,128,977      $ 1,208,864
@833: Income (loss) from continuing operations      $ 302,984
$ (2,249,967)      $ 537,529      $ 191,627      $ (882,977)
@2709: Balance at June 30, 2001
4,065,612      $ 4,066      $ 7,269,556      $ (276,000)
@3464: approximately $6,000, $0.00 and $0.00, ($2,497,000),
($0.63) and ($0.63) and
@3644: June 30, 2001                                $ 100,436
$ 142,134      $ (85,915)      $ 156,655
@2704: Balance at June 24, 2000
4,065,612      4,066      7,269,556      (276,000)
@2726: Balance at June 27, 1998                                $
(2,366,718)      $ 13,477      $ 2,175,441
@3517: 30, 2001, June 24, 2000 and June 26, 1999 was $1.36, $2.84
and $1.87,
```

範例輸入

```
testfile2.txt
```

範例輸出

```
@2093: Balance at December 31, 1993      $69,406      $19,470,767
$(7,440,916)      $12,099,257
@2134: Balance at December 31, 1996      $87,758      $37,234,277
$ (929,496)      $36,392,539
@1287: 1995, and 1994 of $4,694,000, $3,604,000 and
$1,785,000, respectively. The 1996
@1964: of $141,504 in 1996, $93,491 in 1995 (Note 3)
9,377,777      9,233,015
@2106: Balance at December 31, 1994      70,390      19,519,056
(4,804,785)      14,784,661
@2126: Balance at December 31, 1995      87,216      37,060,652
(4,250,739)      32,897,129
```

```

@852: 1995 and 1994 were approximately $15,968,000,
$11,697,000 and $9,566,000,
@1196: $9,846,000, from $8,712,000 in 1995 and increased
20.6% in 1995 from $7,222,000
@1564: Daniel P. Sharkey      4,000    50,222    69,875    21,000
1,103,247      214,750
@1565: Ward C. Stevens ..    9,375   121,245    74,725    5,400
1,231,315      44,850

```

範例輸入

```
testfile3.txt
```

範例輸出

```

@2125: Balances, December 31, 1993..... 1,891,663    $ 19
1,108,625    $ 11    $ 5,235    $ (3,623)    $ 1,642
@1365: Sales..... $ 2,088    $2,166
$ 2,092    $2,455    $2,417    $2,486    $2,635
$4,826
@2130: Balances, December 31, 1994..... 1,891,663    19
1,164,817    12    5,243    (1,838)    3,436
@2136: Balances, December 31, 1995..... 1,891,663    19
1,505,424    15    5,489    (838)    4,685
@1392: calculation(1)..... 4,525    4,549
4,558    4,700    5,697    6,758    6,750
6,708
@1295: 73.3% in 1996 to $1,286,000 and by 18.0% in 1995 to
$742,000 from $629,000 in
@1368: Gross profit..... 1,396    1,421
1,445    1,741    1,485    1,538    1,667
2,775
@1378: Total operating expenses... 1,024    1,109
1,094    1,382    1,326    1,440    1,490
2,227
@2147: Balances, December 31, 1996..... --    $ --
6,350,180    $ 63    $ 21,248    $ 167    $21,478
@2697: $ 0.166 - $14.880    633,244    8.13
$ 3.490    245,284    $0.858

```

## 第四題

(30 points) [日月轉換] 小珍需要處理由資料庫取得的資料檔。這個資料檔是使用 "CP950" 編碼、<TAB> 字元分隔欄位。每個檔案是一隻股票的日資料，包含證



券代碼、簡稱、年月日、開盤價(元)、最高價(元)、最低價(元)、收盤價(元)、成交值(千元)。小珍的任務是將日資料轉換成月資料。轉換後用每月的第一個交易日作為一筆資料的日期，月的開盤價是當月第一個交易日的開盤價，最高價是當月所有交易日中最高價的最高價，最低價是當月所有交易日中最低價的最低價。收盤價是當月最後一個交易日的收盤價。成交值是當月所有交易日的成交值總和。下面是一家公司的範例資料。資料已經照日期排序。

證券代碼	簡稱	年月日	開盤價(元)		最高價(元)		最低價(元)	
		收盤價(元)	成交值(千元)					
4938	和碩	20110103	29.32	29.42	29.21	29.28	89508	
4938	和碩	20110104	29.42	29.56	29.28	29.42	107340	
4938	和碩	20110105	29.42	29.42	28.16	28.72	193077	
4938	和碩	20110106	28.93	29.00	28.02	28.20	259533	
4938	和碩	20110107	28.02	28.16	27.22	27.32	330576	
4938	和碩	20110110	27.60	27.99	26.76	27.11	292461	
4938	和碩	20110111	27.22	27.95	27.08	27.81	207006	
4938	和碩	20110112	27.99	28.09	27.46	27.50	182466	
4938	和碩	20110113	27.99	28.16	27.67	28.02	340223	

請寫一個程式，讓小珍可以依照上述的規則處理資料。這個程式由 `input()` 讀入資料檔檔案路徑，然後對這個資料檔檔案內容處理之後印出結果。印出結果時不需列印標題列，且只需列印下面欄位：證券代碼、年月日、開盤價(元)、最高價(元)、最低價(元)、收盤價(元)、成交值(千元)。所有價格應列印兩位小數，交易量為整數，沒有小數點。日期應為 `YYYYMMDD` 格式 (與原來的格式相同)。欄位間用逗點分隔。每個欄位的資料，若開頭或結尾有多餘的空格，則需要予以去除。輸出資料應依照日期排序。

範例資料請見附檔。

範例輸入

stock1.txt

範例輸出

4938,20110103,29.32,29.56,26.66,28.09,4318643  
 4938,20110208,28.09,28.20,23.50,24.52,4873806  
 4938,20110301,24.66,25.36,21.33,23.36,6501906  
 4938,20110401,23.47,24.48,20.88,21.16,3455453  
 4938,20110503,21.02,22.14,20.39,21.61,3471850  
 4938,20110601,21.61,22.73,19.62,20.84,2971961  
 4938,20110701,20.84,25.22,20.32,23.22,7599233

4938,20110801,23.47,24.10,17.30,19.69,4031329  
4938,20110901,19.72,22.71,18.63,21.12,3512899  
4938,20111003,20.49,25.62,19.86,24.22,4004822  
4938,20111101,23.70,25.03,19.86,22.93,3753742  
4938,20111201,24.37,25.11,22.15,24.33,3339271  
4938,20120102,24.11,27.76,23.92,26.43,5516991  
4938,20120201,26.43,29.76,26.21,29.54,7927719  
4938,20120301,29.54,35.52,27.69,33.97,15693534  
4938,20120402,33.49,34.41,30.75,31.23,8536427  
4938,20120502,31.23,32.82,29.24,30.61,10965123  
4938,20120601,30.27,32.49,27.69,28.72,9832057  
4938,20120702,28.61,29.83,24.96,29.02,9651003  
4938,20120801,28.98,31.46,26.69,27.73,10378630  
4938,20120903,27.73,30.31,27.43,28.17,8220312  
4938,20121001,28.21,30.86,26.29,27.25,9911370  
4938,20121101,26.58,29.46,25.99,27.99,9082106  
4938,20121203,27.99,28.17,26.51,27.73,5203118  
4938,20130102,27.80,30.27,27.65,28.87,8493698  
4938,20130201,28.87,30.53,28.72,29.54,4241907  
4938,20130301,29.54,34.11,29.20,34.11,11574969  
4938,20130401,33.82,35.96,31.75,35.66,15528722  
4938,20130502,35.89,40.91,35.22,40.09,16293318  
4938,20130603,39.50,39.87,34.56,36.55,10464923  
4938,20130701,36.55,38.91,32.67,32.71,14460531  
4938,20130801,32.71,35.96,32.30,34.19,8804118  
4938,20130902,33.97,34.89,30.09,31.16,12602584  
4938,20131001,31.38,32.75,29.84,31.30,8966212  
4938,20131101,31.76,31.99,25.90,28.16,8813567  
4938,20131202,28.16,29.73,27.17,29.39,5961157  
4938,20140102,29.31,32.98,28.96,30.50,7743615  
4938,20140205,29.16,31.76,28.93,31.15,5122580  
4938,20140303,30.99,34.70,30.76,34.70,10189346  
4938,20140401,34.82,36.12,33.98,35.01,9383300  
4938,20140502,35.28,45.00,35.05,44.38,18471366  
4938,20140603,45.15,45.15,40.79,43.62,13036772  
4938,20140701,43.77,48.06,42.39,44.00,15847865  
4938,20140801,43.24,49.51,42.09,48.52,12871429  
4938,20140901,49.36,49.36,42.90,44.82,16049080  
4938,20141001,44.58,46.50,40.18,44.18,15771883  
4938,20141103,43.86,60.26,43.22,57.46,27990108  
4938,20141201,56.50,60.18,54.66,58.42,21643681  
4938,20150105,58.42,69.23,57.06,68.03,23177715  
4938,20150202,67.15,70.59,62.74,68.99,16103259  
4938,20150302,69.31,74.43,66.99,67.79,22152871  
4938,20150401,67.31,76.03,66.18,73.07,15071439  
4938,20150504,73.95,75.87,70.43,73.31,14559507  
4938,20150601,73.31,73.55,67.71,72.27,13516776  
4938,20150701,71.87,78.75,64.82,71.07,18907503  
4938,20150803,72.03,76.71,59.69,70.59,24096478

4938,20150901,71.18,74.20,66.32,67.24,13375976
4938,20151001,68.16,72.44,65.56,66.90,22928397
4938,20151102,66.23,72.52,65.81,72.18,16899344
4938,20151201,72.44,74.87,60.53,61.37,15081918

#### 範例輸入

stock2.txt
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#### 範例輸出

1417,20110103,11.01,11.84,9.95,10.22,1723182
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1417,20110301,9.67,9.76,8.07,9.19,450208
1417,20110401,9.19,10.13,9.19,9.39,425042
1417,20110503,9.34,9.76,8.68,9.02,289562
1417,20110601,9.09,9.10,8.30,8.68,135035
1417,20110701,8.68,10.27,8.65,9.81,796982
1417,20110801,9.99,10.36,8.06,9.53,866166
1417,20110901,9.53,9.62,7.58,7.79,255565
1417,20111003,7.64,8.60,7.45,8.37,220186
1417,20111101,8.37,8.88,7.89,8.23,442764
1417,20111201,8.60,8.64,7.12,7.68,221640
1417,20120102,7.68,8.21,7.64,8.10,288276
1417,20120201,8.10,10.59,8.10,10.36,1573612
1417,20120301,10.18,10.64,8.74,9.09,1033548
1417,20120402,9.09,9.21,7.96,9.21,346020
1417,20120502,9.34,9.76,8.35,9.34,417885
1417,20120601,9.30,9.53,8.51,9.14,271098
1417,20120702,9.19,10.13,9.18,10.13,486227
1417,20120801,10.13,10.87,9.71,9.90,1041701
1417,20120903,9.85,10.22,9.53,9.58,485679
1417,20121001,9.58,9.99,8.47,8.53,410709
1417,20121101,8.51,8.83,8.13,8.69,228377
1417,20121203,8.72,9.23,8.59,8.84,386379
1417,20130102,8.97,9.34,8.64,8.69,246106
1417,20130201,8.79,8.82,8.49,8.51,90644
1417,20130301,8.56,8.74,8.25,8.64,179504
1417,20130401,8.69,8.82,8.38,8.77,186228
1417,20130502,8.77,9.11,8.68,8.84,333558
1417,20130603,8.75,8.85,8.42,8.56,126672
1417,20130701,8.52,8.97,8.49,8.82,184039
1417,20130801,8.82,8.88,8.17,8.25,110749
1417,20130902,8.28,8.71,8.25,8.51,94939
1417,20131001,8.53,9.22,8.53,8.65,256102
1417,20131101,8.69,8.69,8.18,8.31,156854
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1417,20140102,8.48,8.84,8.23,8.27,320136

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1417,20140205,8.20,8.46,8.20,8.27,117240
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1417,20140401,8.27,8.32,7.81,7.87,93286
1417,20140502,7.91,8.27,7.85,8.20,129147
1417,20140603,8.22,8.53,7.97,8.24,244876
1417,20140701,8.25,8.58,8.14,8.48,205976
1417,20140801,8.42,8.50,8.08,8.27,89949
1417,20140901,8.27,8.32,8.00,8.08,69930
1417,20141001,8.09,8.26,7.40,7.79,75235
1417,20141103,7.79,7.93,7.51,7.60,49596
1417,20141201,7.52,8.15,7.50,8.04,106020
1417,20150105,8.01,8.15,7.80,7.88,68047
1417,20150202,7.82,8.64,7.82,8.64,151278
1417,20150302,8.75,8.85,8.10,8.17,284624
1417,20150401,8.12,9.04,8.06,8.82,321779
1417,20150504,8.76,8.78,7.46,7.73,203015
1417,20150601,7.73,7.97,6.70,7.10,127221
1417,20150701,7.13,7.54,6.24,6.90,84048
1417,20150803,6.81,6.97,5.19,5.59,76702
1417,20150901,5.55,6.14,5.54,5.79,65332
1417,20151001,5.75,6.25,5.72,5.88,96545
1417,20151102,5.84,6.05,4.80,4.87,77320
1417,20151201,4.88,5.54,4.46,5.23,157675
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#### 範例輸入

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stock3.txt
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#### 範例輸出

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1503,20110401,27.68,28.18,26.24,27.42,586081
1503,20110503,27.45,28.67,27.26,27.99,375529
1503,20110601,27.99,28.14,26.77,27.57,419856
1503,20110701,27.72,29.09,27.45,28.34,532284
1503,20110801,28.74,29.45,23.78,26.22,559309
1503,20110901,26.22,26.46,23.46,24.49,271578
1503,20111003,24.09,25.20,23.70,24.64,151940
1503,20111101,24.68,25.67,23.70,23.78,167944
1503,20111201,24.05,25.20,23.27,25.20,201460
1503,20120102,25.12,25.59,24.49,25.35,125718
1503,20120201,25.43,26.57,25.35,26.06,233054
1503,20120301,26.14,26.53,25.23,25.55,203271
1503,20120402,25.59,28.27,24.72,27.40,385576
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1503,20120601,27.91,27.99,26.61,27.64,120494
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1503,20121203,29.30,29.42,27.99,29.34,123171  
1503,20130102,29.34,29.42,28.81,29.09,87280  
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1503,20130301,29.30,29.30,27.02,29.01,130604  
1503,20130401,28.77,29.99,28.52,28.97,123810  
1503,20130502,28.89,29.42,28.77,29.09,134999  
1503,20130603,28.81,29.46,28.28,28.81,205747  
1503,20130701,28.52,29.57,28.32,29.52,206213  
1503,20130801,29.52,30.24,29.11,30.20,113277  
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1503,20131202,31.62,31.87,31.29,31.87,100728  
1503,20140102,31.87,32.04,31.16,31.71,90839  
1503,20140205,31.62,31.75,31.12,31.29,113027  
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1503,20140603,30.62,31.71,30.45,31.62,141402  
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1503,20141001,35.76,35.93,33.67,34.54,151919  
1503,20141103,34.54,34.84,34.19,34.71,83145  
1503,20141201,34.32,34.80,33.93,34.36,112075  
1503,20150105,34.36,34.62,33.67,34.54,77366  
1503,20150202,34.54,34.80,34.28,34.71,41491  
1503,20150302,34.62,35.06,34.45,34.76,63222  
1503,20150401,34.62,36.36,34.45,36.06,112760  
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1503,20151102,36.11,36.56,34.71,35.84,56377  
1503,20151201,35.43,36.11,35.07,35.93,64072