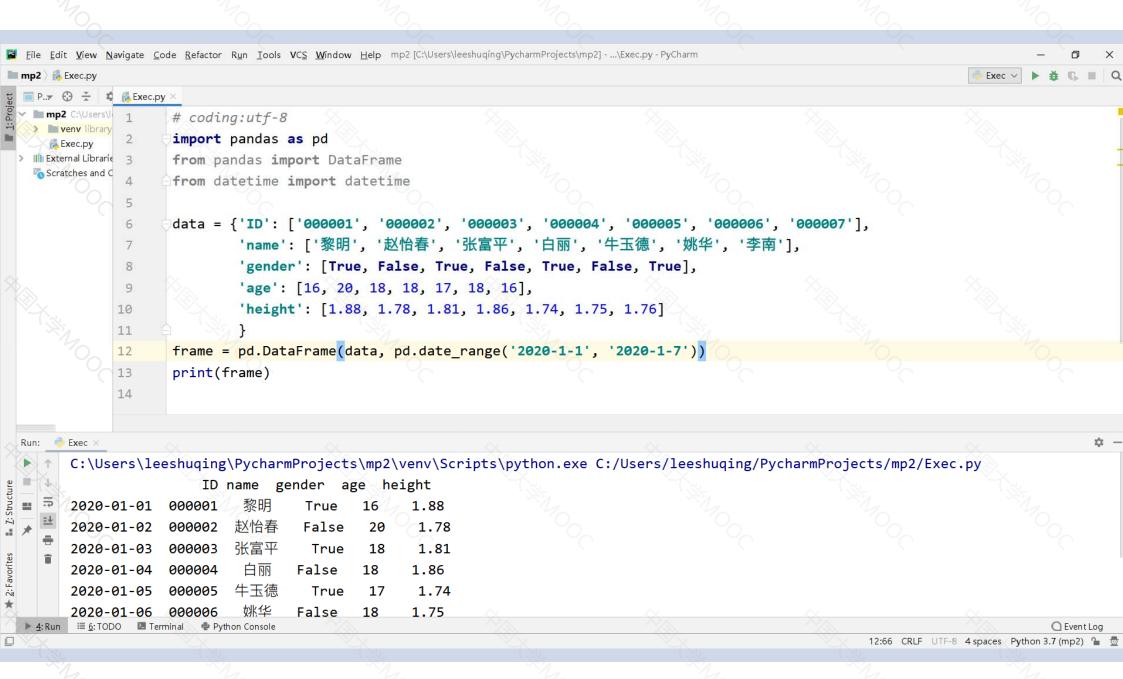
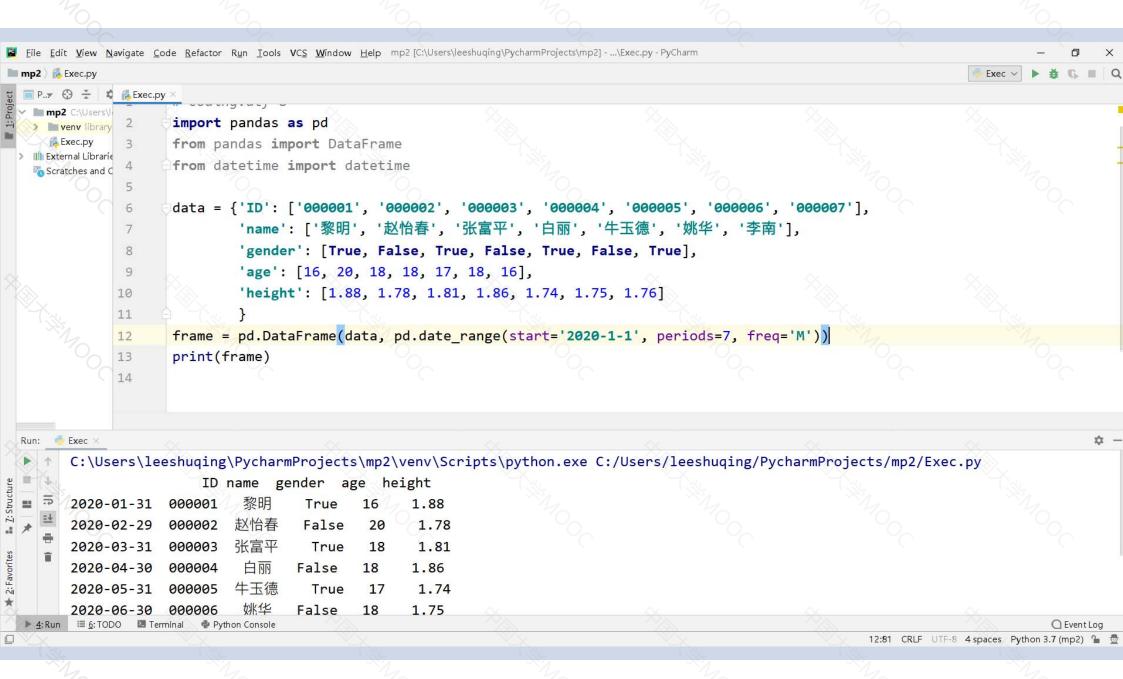
Python大数据分析

三、特殊时间序列的生成



```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
   P. y (1) -
            Exec.py
   mp2 C:\Users\l
                     import pandas as pd
   > wenv library
                     from pandas import DataFrame
     Exec.py
   III External Librarie
                     from datetime import datetime
   Scratches and C
                     data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
               9
                              'age': [16, 20, 18, 18, 17, 18, 16],
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
                     frame = pd.DataFrame(data, pd.date range(start='2020-1-1', periods=7))
                     print(frame)
        Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                         ID name gender age height
                               黎明
        2020-01-01 000001
                                       True
                                               16
                                                     1.88
        2020-01-02 000002
                              赵怡春
                                                      1.78
                                       False
        2020-01-03 000003
                              张富平
                                        True
                                               18
                                                      1.81
        2020-01-04 000004
                               H PP
                                      False
                                               18
                                                     1.86
                              牛玉德
                                                      1.74
        2020-01-05
                     000005
                                        True
                                               17
                               姚华
                                                     1.75
        2020-01-06 000006
                                      False
                                               18
                ■ Terminal
                                                                                                                                           C Event Log
                                                                                                                   12:71 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🧣 💆
```

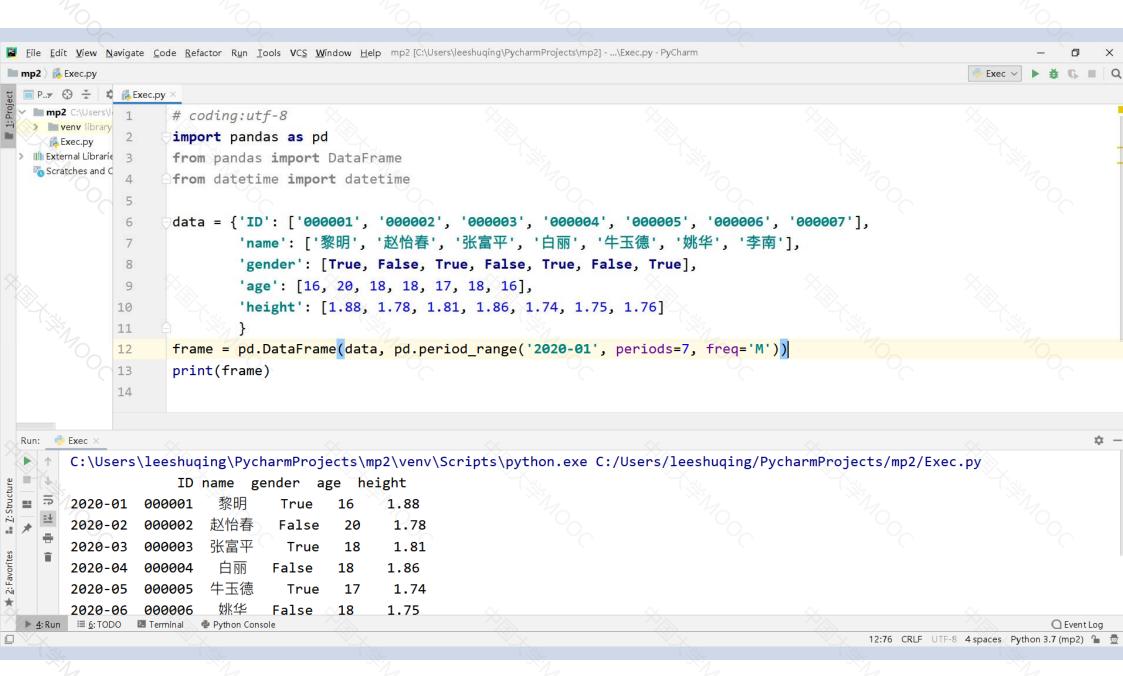


```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 \ Exec.py
                                                                                                                                Exec
  Exec.py X
   mp2 C:\Users\leeshuqing
                          # coding:utf-8
   y library root
                          import pandas as pd
       Include
    Lib
      > site-packages
                          data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
    > Scripts
                                   'name': ['黎明','赵怡春','张富平','白丽','牛玉德','姚华','李南'],
       macrodata.csv
                    5
       pyvenv.cfg
                                   'gender': [True, False, True, False, True, False, True],
     Exec.py
                                   'birthday': ['2004-10-01', '2000-11-27', '2002-01-29',
     macrodata.csv
   III External Libraries
                                                 '2002-08-27', '2003-03-14', '2002-12-17',
   Scratches and Consoles
                                                 '2004-04-12'].
                    9
                                   'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
                   10
                   11
                          frame = pd.DataFrame(data, pd.date range(start='2020-1-1', periods=7, freq='MS'))
                   12
                          print(frame)
                   13
                   14
       Exec ×
 Run:
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                         ID name gender
                                             birthday height
        2020-01-01 000001
                              黎明
                                      True
                                             2004-10-01
                                                            1.88
                             赵怡春
        2020-02-01 000002
                                      False
                                             2000-11-27
                                                             1.78
        2020-03-01 000003
                             张富平
                                       True 2002-01-29
                                                             1.81
                              白丽
        2020-04-01 000004
                                     False 2002-08-27
                                                            1.86
        2020-05-01 000005
                             牛玉德
                                       True 2003-03-14
                                                             1.74
        2020-06-01 000006
                              姚华
                                     Falsa 2002-12-17
                                                            1 75
        Python Console
                                                                                                                                        C Event Log
                                                                                                                12:82 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```

```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
   P. y (1) -
            Exec.py
   mp2 C:\Users\l
                     import pandas as pd
   > wenv library
                     from pandas import DataFrame
     Exec.py
   III External Librarie
                     from datetime import datetime
   Scratches and C
                     data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
               9
                              'age': [16, 20, 18, 18, 17, 18, 16],
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
                     frame = pd.DataFrame(data, pd.date range(start='2020-1-1', periods=7, freq='2M'))
                     print(frame)
        Exec
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                         ID name gender age height
                               黎明
        2020-01-31 000001
                                       True
                                               16
                                                     1.88
        2020-03-31 000002
                              赵怡春
                                                      1.78
                                       False
        2020-05-31 000003
                              张富平
                                        True
                                               18
                                                      1.81
        2020-07-31 000004
                               H PP
                                      False
                                               18
                                                     1.86
        2020-09-30
                              牛玉德
                                                      1.74
                     000005
                                        True
                                               17
                               姚华
        2020-11-30 000006
                                      False
                                               18
                                                     1.75
        I 6: TODO
                ■ Terminal
                                                                                                                                           C Event Log
                                                                                                                   12:1 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```

```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
   P. y (1) -
            Exec.py ×
   mp2 C:\Users\I
                      import pandas as pd
   > venv library
                     from pandas import DataFrame
     Exec.py
  III External Librarie
                     from datetime import datetime
   Scratches and C
                      data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
               9
                              'age': [16, 20, 18, 18, 17, 18, 16],
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
                     frame = pd.DataFrame(data, pd.date range(start='2020-1-1', periods=7, freq='1h30min'))
                      print(frame)
        Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                                   ID name gender age height
                                         黎明
        2020-01-01 00:00:00
                               000001
                                                 True
                                                         16
                                                                1.88
                                        赵怡春
                                                 False
        2020-01-01 01:30:00
                              000002
                                                                1.78
                                                          20
        2020-01-01 03:00:00
                               000003
                                        张富平
                                                  True
                                                         18
                                                                1.81
        2020-01-01 04:30:00
                               000004
                                         白丽
                                                False
                                                         18
                                                                1.86
                                        牛玉德
                               000005
                                                  True
                                                                1.74
        2020-01-01 06:00:00
                                                         17
                                         姚华
                                                False
        2020-01-01 07:30:00
                               000006
                                                         18
                                                               1.75
        ≡ 6: TODO ► Terminal
                         Python Console
                                                                                                                                            C Event Log
                                                                                                                   12:87 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🧣 💆
```

```
📱 Eile Edit View Navigate Code Refactor Run Iools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 \ Exec.py
  ■ P...▼ 🕀 😤
            Exec.py ×
   mp2 C:\Users\l 1
                     # coding:utf-8
   > wenv library
                      import pandas as pd
     Exec.py
                     from pandas import DataFrame
  External Librarie 3
   Scratches and C
                     from datetime import datetime
               5
                      data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
               6
                              'name': ['黎明','赵怡春','张富平','白丽','牛玉德','姚华','李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
                              'age': [16, 20, 18, 18, 17, 18, 16],
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
                      frame = pd.DataFrame(data, pd.period range('2020-01', '2020-07', freq='M'))
                      print(frame)
              13
              14
        Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                      ID name gender age height
                            黎明
        2020-01
                  000001
                                    True
                                            16
                                                  1.88
                          赵怡春
        2020-02
                  000002
                                    False
                                                   1.78
                                            20
        2020-03
                          张富平
                  000003
                                     True
                                            18
                                                   1.81
        2020-04
                  000004
                            白丽
                                   False
                                            18
                                                  1.86
                          牛玉德
        2020-05
                                                   1.74
                  000005
                                     True
                                            17
                            姚华
        2020-06
                  000006
                                   False
                                            18
                                                  1.75
                 ■ Terminal
                         Python Console
                                                                                                                                            C Event Log
                                                                                                                   12:76 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```

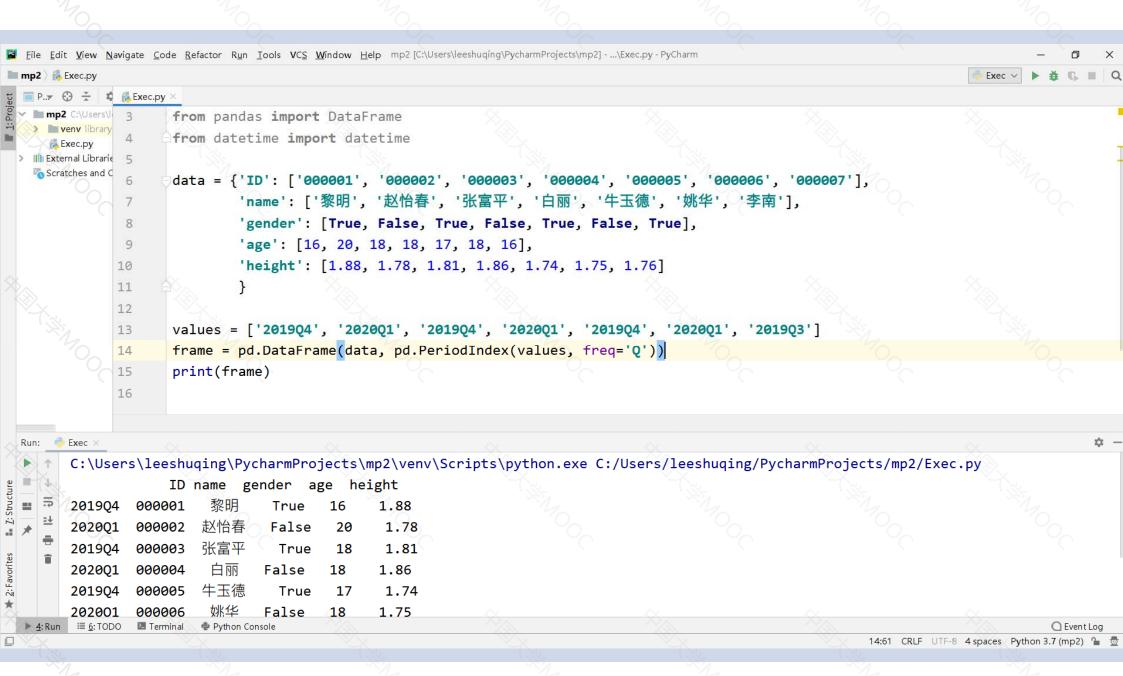


```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
  mp2 C:\Users\l 3
                     from pandas import DataFrame
   > wenv library
                     from datetime import datetime
     Exec.py
  External Librarie 5
   Scratches and C
                     data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
                              'age': [16, 20, 18, 18, 17, 18, 16],
               9
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
              12
                     values = ['2019-12', '2020-01', '2019-11', '2020-02', '2019-12', '2020-01', '2019-07']
              13
                     frame = pd.DataFrame(data, pd.PeriodIndex(values, freq='M'))
                     print(frame)
              15
              16
        Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                      ID name gender age height
                           黎明
        2019-12
                 000001
                                   True
                                           16
                                                 1.88
                          赵怡春
        2020-01
                 000002
                                   False
                                                  1.78
                                            20
                          张富平
        2019-11
                 000003
                                    True
                                           18
                                                  1.81
        2020-02
                 000004
                            白丽
                                  False
                                           18
                                                 1.86
                          牛玉德
        2019-12
                                                  1.74
                 000005
                                    True
                                           17
                           姚华
        2020-01
                 000006
                                  False
                                           18
                                                 1.75

    6: TODO

    ▼ Terminal

                         Python Console
                                                                                                                 14:61 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```



```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
  mp2 C:\Users\l 3
                     from pandas import DataFrame
   > wenv library
                     from datetime import datetime
     Exec.py
 External Librarie 5
   Scratches and C
                     data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
                              'age': [16, 20, 18, 18, 17, 18, 16],
               9
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
              12
                     values = ['2019-12', '2020-01', '2019-11', '2020-02', '2019-12', '2020-01', '2019-07']
              13
                     frame = pd.DataFrame(data, pd.PeriodIndex(values, freq='Q'))
                     print(frame)
              15
              16
       Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                    ID name gender age height
                          黎明
        201904 000001
                                  True
                                          16
                                                1.88
        202001 000002
                         赵怡春
                                                 1.78
                                  False
                                          20
        201904 000003
                         张富平
                                   True
                                          18
                                                 1.81
        202001
                000004
                          白丽
                                 False
                                          18
                                                1.86
                         牛玉德
                                                 1.74
        201904
                000005
                                   True
                                         17
                          姚华
        202001
                000006
                                 False
                                          18
                                                1.75

    6: TODO

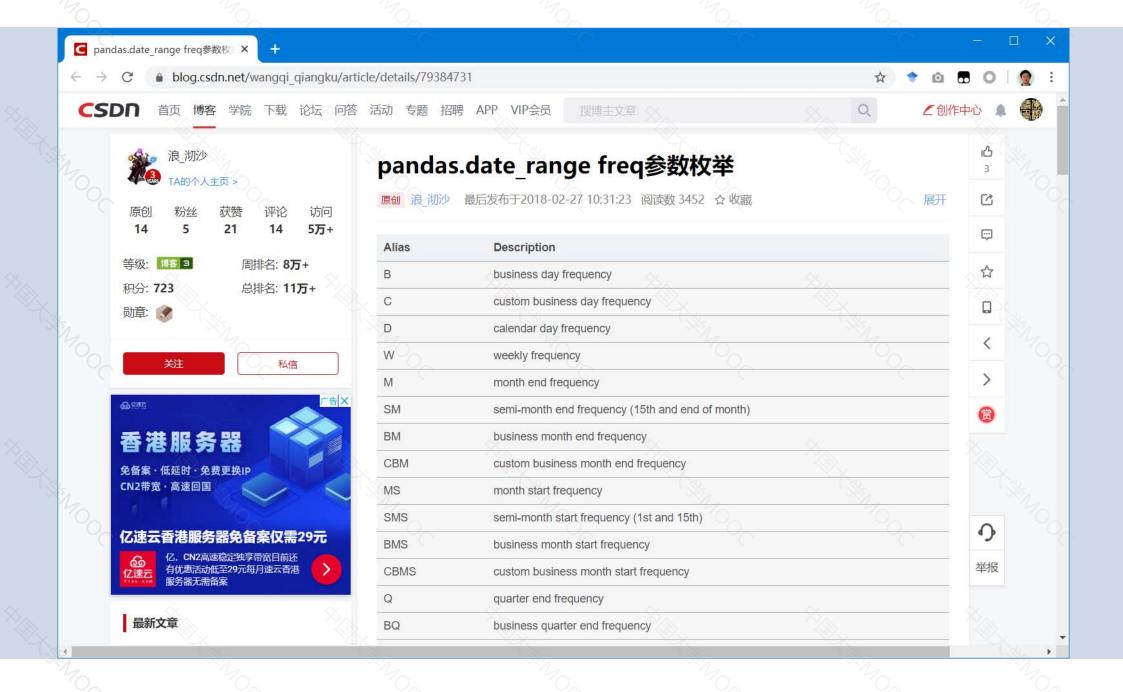
                ■ Terminal
                         Python Console
                                                                                                                                        C Event Log
                                                                                                                14:61 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```

```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
  from pandas import DataFrame
   mp2 C:\Users\l 3
   > wenv library
                     from datetime import datetime
     Exec.py
 External Librarie 5
   Scratches and C
                     data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
                              'gender': [True, False, True, False, True, False, True],
               8
               9
                              'age': [16, 20, 18, 18, 17, 18, 16],
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
              12
                     values = ['2019Q4', '2020Q1', '2019Q4', '2020Q1', '2019Q4', '2020Q1', '2019Q3']
              13
                     frame = pd.DataFrame(data, pd.PeriodIndex(values, freq='M'))
                     print(frame)
              15
              16
       Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                      ID name gender age height
                           黎明
        2019-10
                 000001
                                   True
                                           16
                                                 1.88
                          赵怡春
        2020-01
                 000002
                                   False
                                                  1.78
                                            20
        2019-10
                          张富平
                 000003
                                    True
                                            18
                                                  1.81
        2020-01
                 000004
                            白丽
                                  False
                                           18
                                                 1.86
                          牛玉德
        2019-10
                                                  1.74
                 000005
                                    True
                                           17
                           姚华
        2020-01
                 000006
                                  False
                                           18
                                                 1.75

    6: TODO

                ■ Terminal
                         Python Console
                                                                                                                                         C Event Log
                                                                                                                 14:61 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```

```
🖺 File Edit View Navigate Code Refactor Run Jools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
  🔳 P..🔻 🔂 😤 🗱 Exec.py ×
   mp2 C:\Users\l
                     data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
   > env library 6
     Exec.py
                              'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
   External Librarie
                               'gender': [True, False, True, False, True, False, True],
   Scratches and C 8
                              'age': [16, 20, 18, 18, 17, 18, 16],
                              'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
              10
              11
              12
                     years = [2019, 2020, 2019, 2020, 2019, 2020, 2019]
              13
                     months = [12, 1, 11, 2, 12, 1, 7]
              14
                     frame = pd.DataFrame(data, pd.PeriodIndex(year=years, month=months, freq='M'))
              15
                     print(frame)
        Exec >
        C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                      ID name gender age height
                           黎明
        2019-12
                 000001
                                    True
                                           16
                                                  1.88
        2020-01
                          赵怡春
                  000002
                                    False
                                                   1.78
                                            20
        2019-11
                          张富平
                  000003
                                    True
                                            18
                                                   1.81
        2020-02
                  000004
                            白丽
                                   False
                                           18
                                                  1.86
                          牛玉德
        2019-12
                                                   1.74
                  000005
                                     True
                                            17
                            姚华
        2020-01
                  000006
                                   False
                                           18
                                                  1.75
                ■ Terminal
                         Python Console
                                                                                                                   15:79 CRLF UTF-8 4 spaces Python 3.7 (mp2) 🦫 💆
```



一次不学多,下次再学