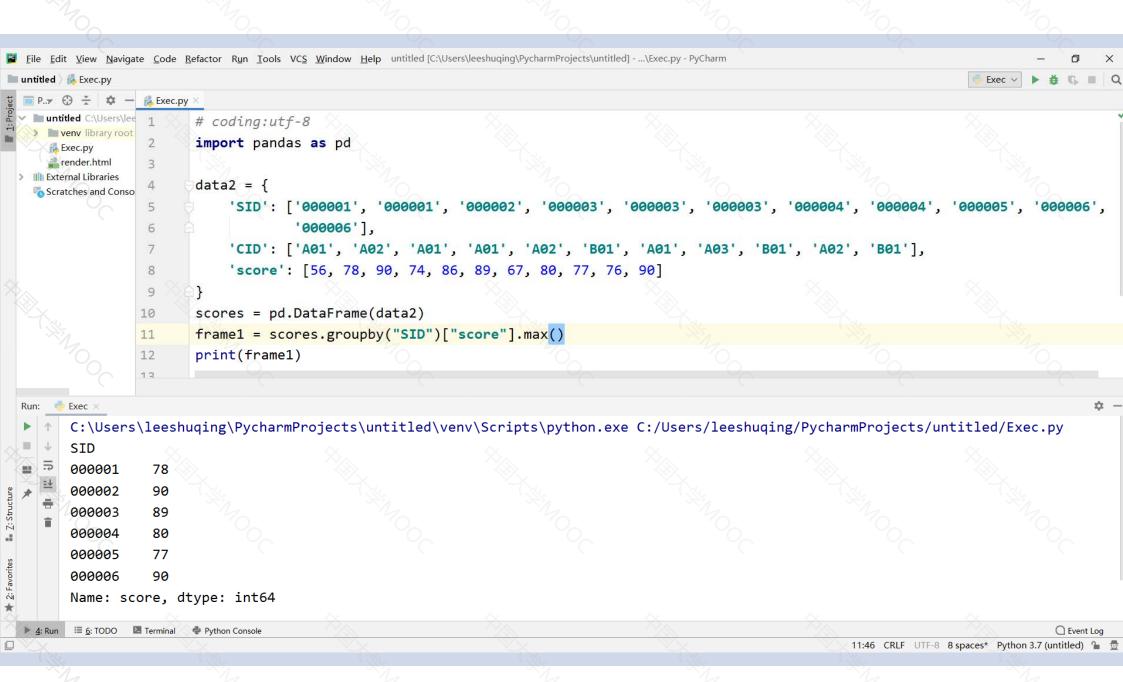
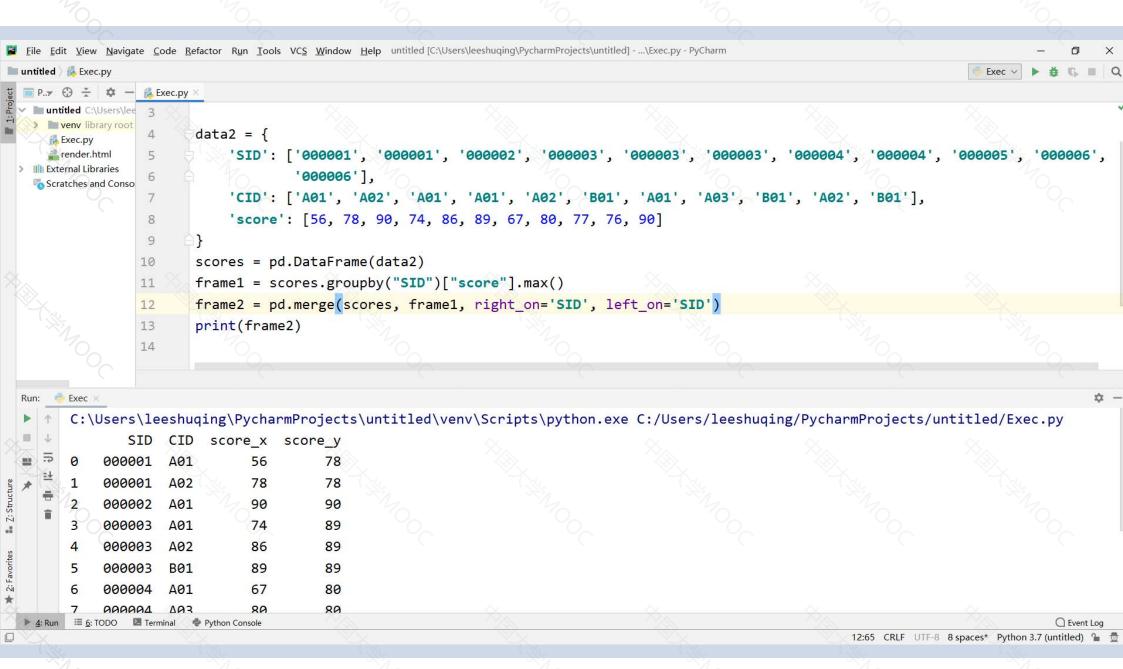
Python大数据分析

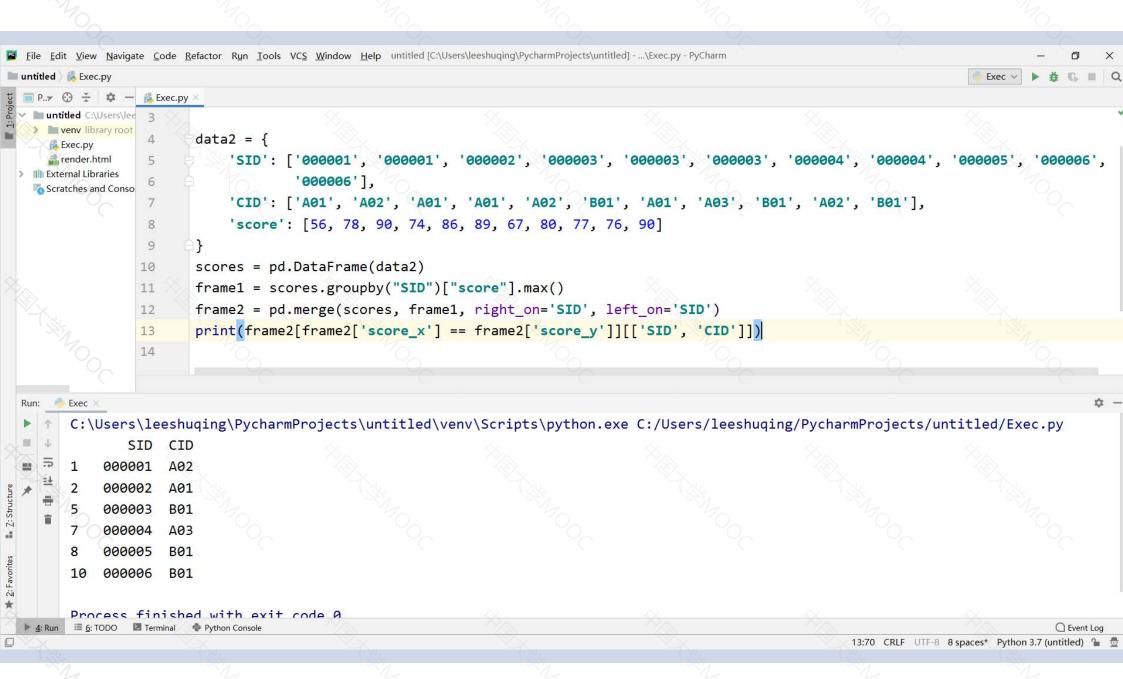
九、高级子查询

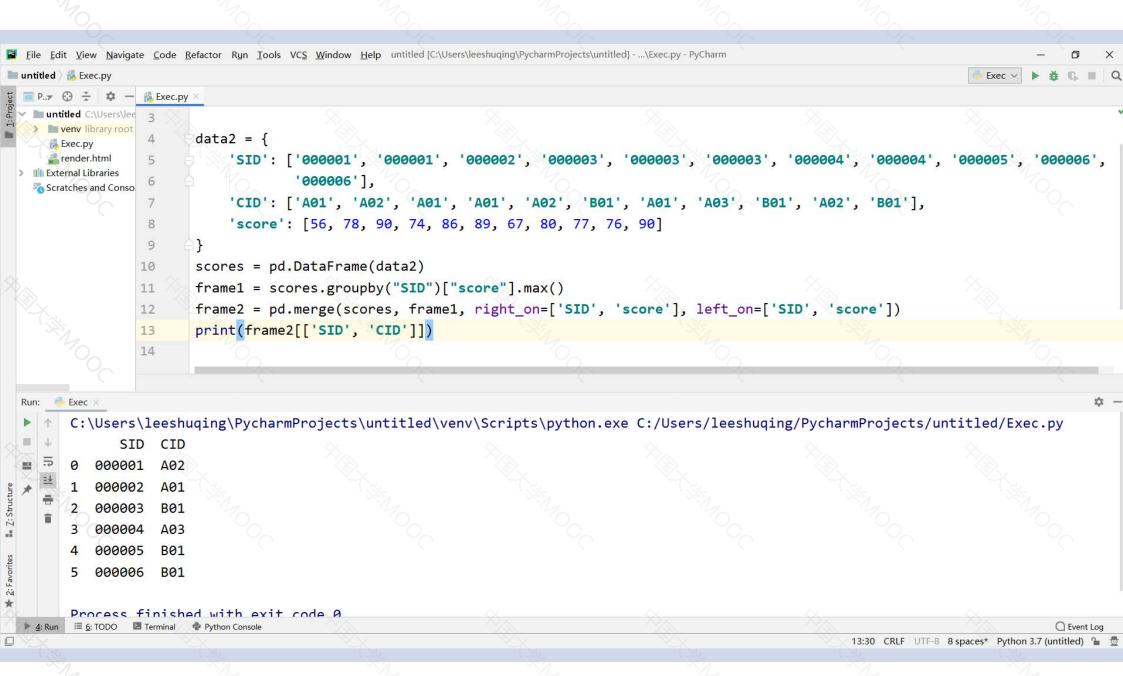
查询每个学生成绩最高的课程号 1 查询对应的课程号 1

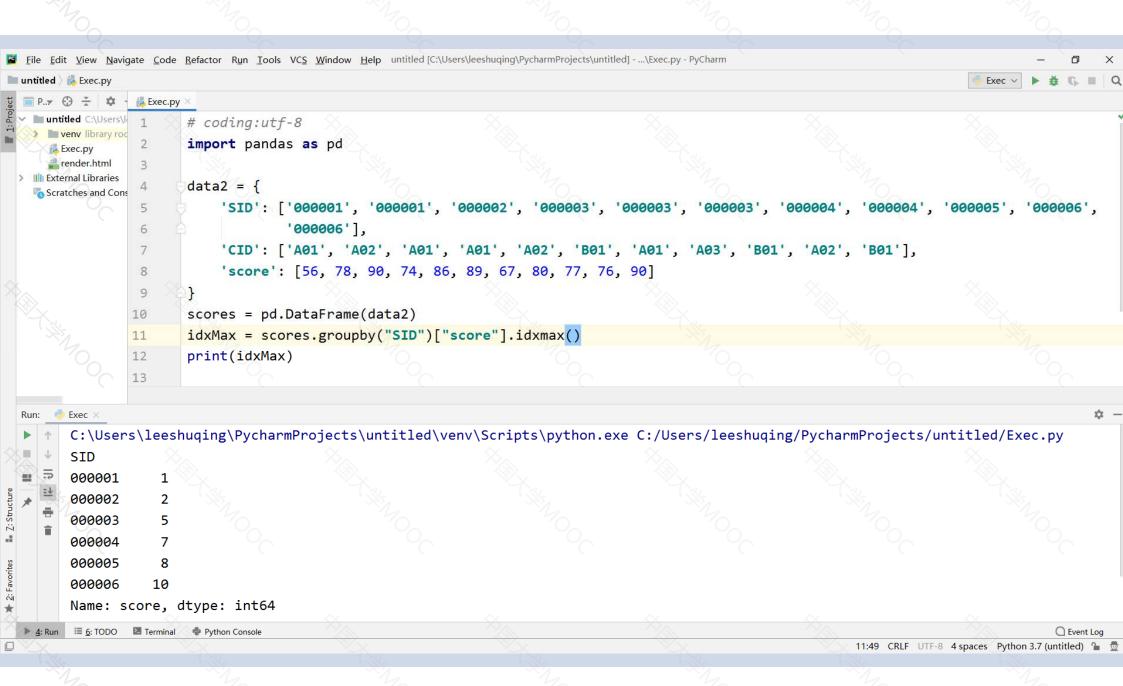
查询学生的最高成绩

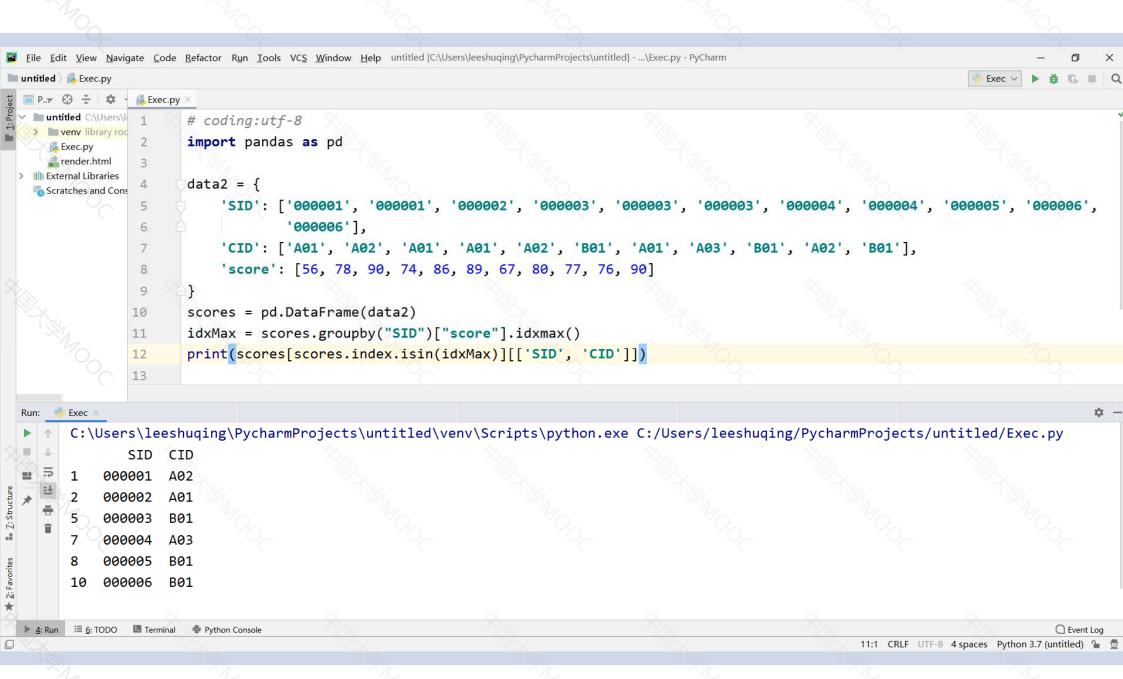










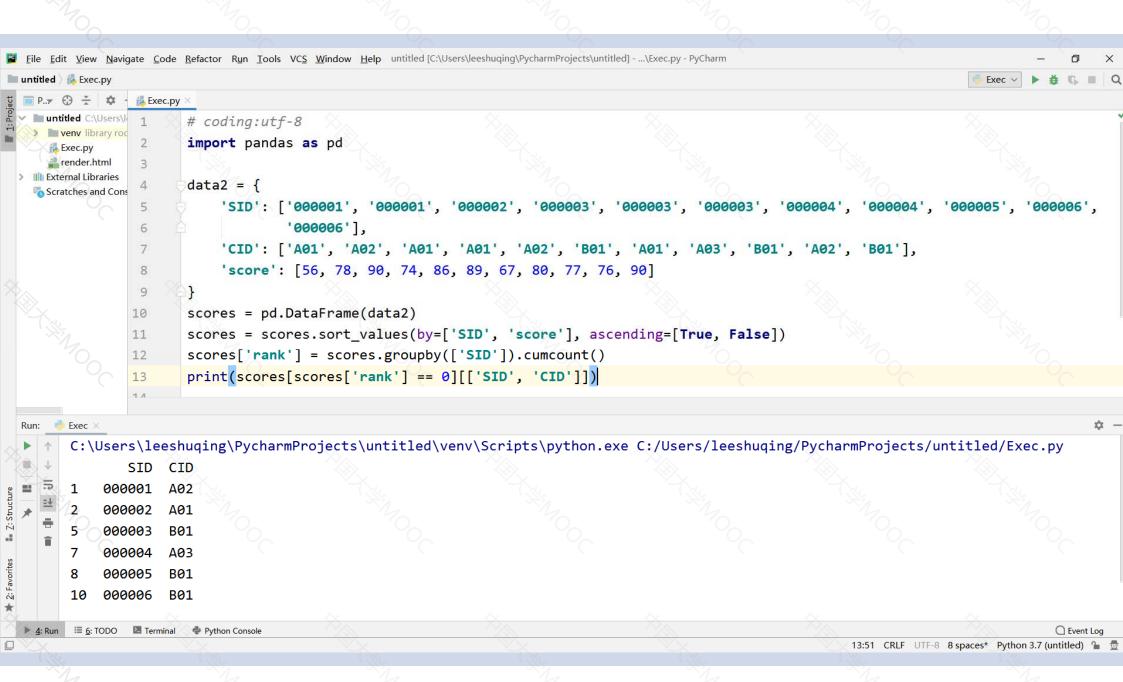


```
📱 File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
untitled \( \begin{aligned} \b
            P. y 😲 😤 🌣
                                                      Exec.py
           untitled C:\Users\l
                                                                           # coding:utf-8
           > library roc
                                                                            import pandas as pd
                  Exec.py
                 arender.html
     > IIII External Libraries
                                                                            data2 = {
           Scratches and Cons
                                                                                          'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005',
                                                                                                                      '000006'],
                                                                                          'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                                                                                          'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                                                                            scores = pd.DataFrame(data2)
                                                     10
                                                                            scores = scores.sort_values(by=['SID', 'score'], ascending=[True, False])
                                                     11
                                                                            print(scores)
                                                     13
                         Exec ×
                          C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
                                                  SID CID score
                                       000001 A02
                                                                                                78
                                       000001 A01
                                                                                                56
                                       000002 A01
                                                                                                90
                                       000003 B01
                                                                                                89
                                        000003
                                                                  A02
                                                                                                86
                                        000003
                                                                   A01
                                                                                                74
                                         000004 A03
                                                                                                80
                                                                             Python Console

    ▼ Terminal

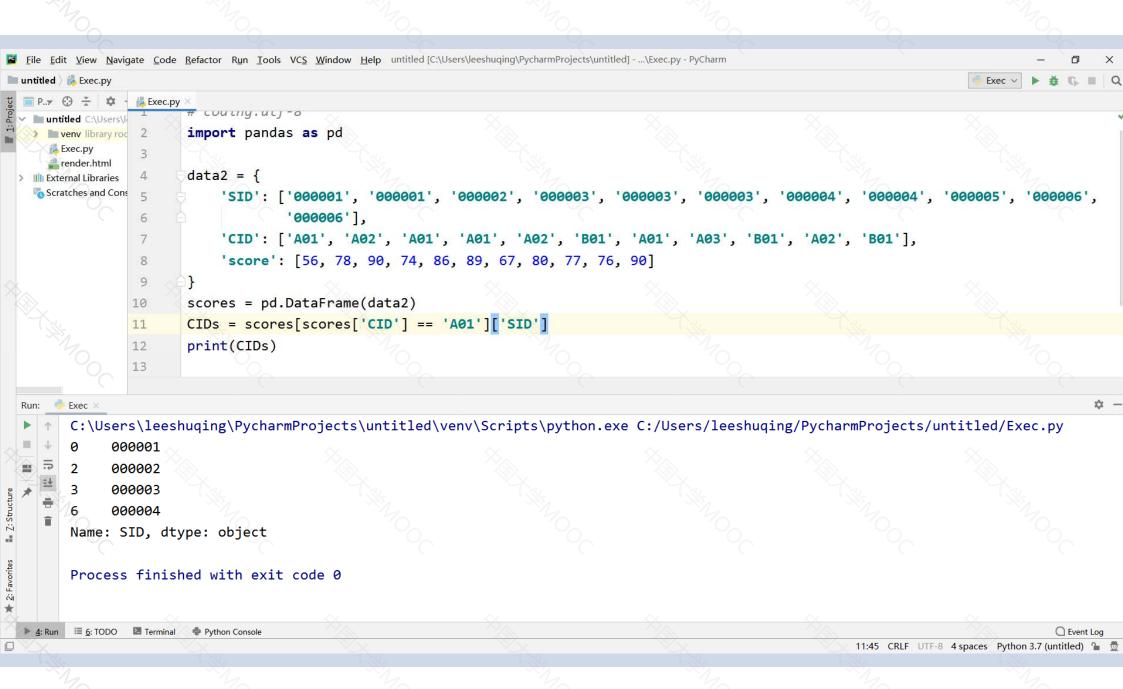
                                                                                                                                                                                                                                                                                                                                                                       11:74 CRLF UTF-8 4 spaces Python 3.7 (untitled) 🦫 💆
```

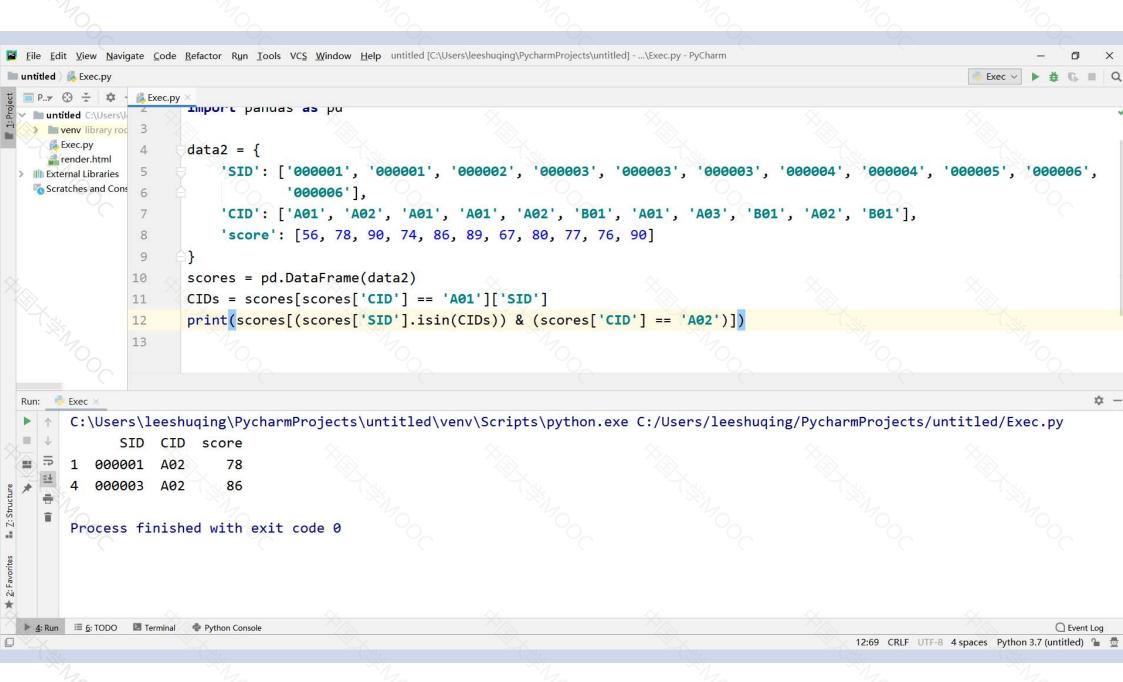
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📱 File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
untitled \( \begin{aligned} \b
            P. y 🕀 😤 🌣
                                                    Exec.py
          untitled C:\Users\l
                                                                        # coding:utf-8
               venv library roc
                                                                        import pandas as pd
                 Exec.py
                 arender.html
     > IIII External Libraries
                                                                        data2 = {
          Scratches and Cons
                                                                                      'SID': ['000001', '000001', '000002', '000003', '000003', '000004', '000004', '000005',
                                                                                                                 '000006'],
                                                                                      'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                                                                                      'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                                                                         scores = pd.DataFrame(data2)
                                                  10
                                                                         scores = scores.sort_values(by=['SID', 'score'], ascending=[True, False])
                                                  11
                                                                         scores['rank'] = scores.groupby(['SID']).cumcount()
                                                                         print(scores)
                                                  13
                        Exec ×
                         C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
                                                SID CID score rank
                                       000001 A02
                                                                                            78
                                      000001 A01
                                                                                            56
                                      000002 A01
                                                                                            90
                                      000003
                                                                 B01
                                                                                            89
                                      000003
                                                                 A02
                                                                                            86
                                       000003
                                                                 A01
                                                                                            74
                                       000004
                                                                A03
                                                                                            80
                                                  Terminal
                                                                          Python Console
                                                                                                                                                                                                                                                                                                                                                       12:52 CRLF UTF-8 8 spaces* Python 3.7 (untitled)
```

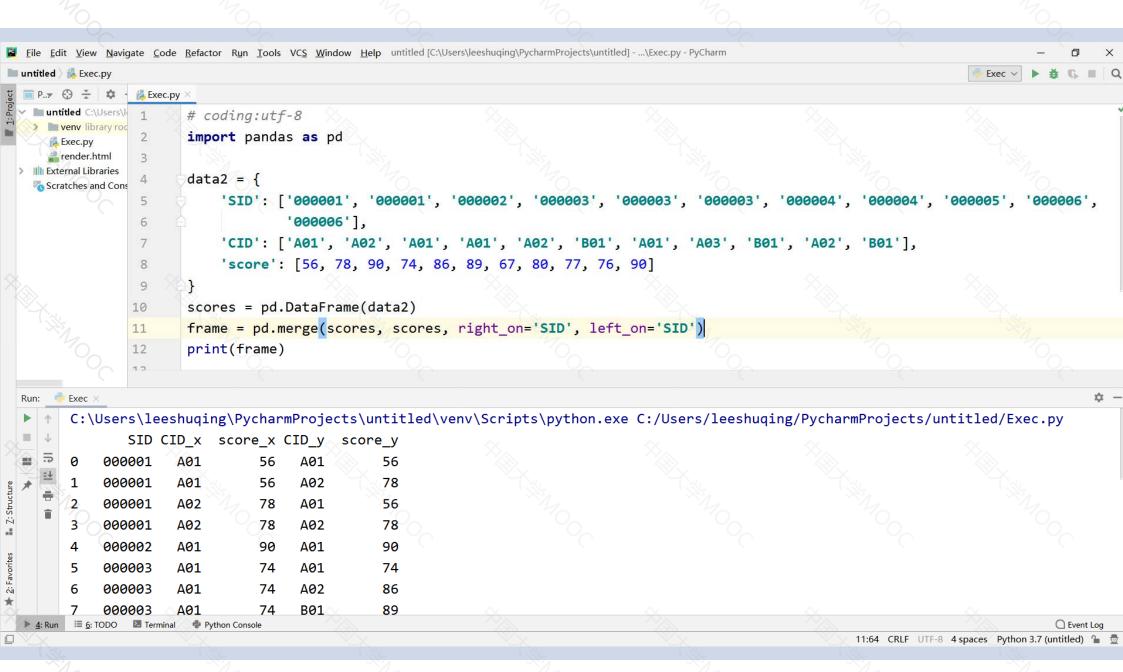


查询选修了A01课程的学生 A02课程成绩为多少?

```
📱 File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
untitled \( \begin{aligned} \b
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Exec
             P. y 😲 😤 🌣
                                                         Exec.py >
            untitled C:\Users\l
                                                                               # coding:utf-8
                venv library roc
                                                                                import pandas as pd
                   Exec.py
                  arender.html
     > IIII External Libraries
                                                                                data2 = {
            Scratches and Cons
                                                                                               'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005',
                                                                                                                             '000006'],
                                                                                               'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                                                                                               'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                                                                                scores = pd.DataFrame(data2)
                                                       10
                                                                                print(scores)
                                                       11
                                                        12
                           Exec >
                           C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
                                                     SID CID score
                                          000001 A01
                                                                                                     56
                                          000001 A02
                                                                                                     78
                                          000002 A01
                                                                                                     90
                                          000003
                                                                       A01
                                                                                                     74
                                          000003
                                                                      A02
                                                                                                     86
                                          000003
                                                                       B01
                                                                                                     89
                                          000004
                                                                        A01
                                                                                                     67
                                          000004
                                                                       A03
                                                                                                     80
                                                       Terminal Python Console
                                                                                                                                                                                                                                                                                                                                                                                          11:14 CRLF UTF-8 4 spaces Python 3.7 (untitled) 🦫 💆
```







```
📱 <u>File Edit View N</u>avigate <u>C</u>ode <u>R</u>efactor R<u>u</u>n <u>T</u>ools VC<u>S W</u>indow <u>H</u>elp untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
untitled > 🐌 Exec.py
                          Import panuas as pu
   untitled C:\Users\l
     venv library roc 3
      Exec.py
                          data2 = {
      arender.html
                               'SID': ['000001', '000001', '000002', '000003', '000003', '000004', '000004', '000004', '000005', '000006',
 External Libraries
   Scratches and Cons
                                         '000006'],
                               'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                               'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                          scores = pd.DataFrame(data2)
                  10
                          frame = pd.merge(scores, scores, right on='SID', left on='SID')
                  11
                          print(frame['CID_x'] == 'A01') & (frame['CID_y'] == 'A02')][['SID', 'CID_y', 'score_y']])
        Exec ×
         C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
                SID CID y score y
            000001
                       A02
                                   78
            000003
                       A02
                                   86
         Process finished with exit code 0
         I 6: TODO
                  Terminal
                          Python Console
                                                                                                                            12:97 CRLF UTF-8 4 spaces Python 3.7 (untitled)
```

```
📱 File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
    P. y 😲 😤 🌣
                  Exec.py
   untitled C:\Users\l
                         # coding:utf-8
     venv library roc
                         import pandas as pd
      Exec.py
      arender.html
 > IIII External Libraries
                         data2 = {
   Scratches and Cons
                              'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005',
                                        '000006'],
                              'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                              'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                         scores = pd.DataFrame(data2)
                 10
                         frame = scores.pivot_table(values='score', index='SID', columns='CID', fill_value=-1)
                 11
                         print(frame)
        Exec ×
        C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
         CID
                  A01 A02 A03 B01
         SID
         000001
                   56
                         78
                               -1
                                     -1
         000002
                   90
                         -1
                               -1
                                     -1
         000003
                   74
                         86
                               -1
                                     89
         000004
                   67
                         -1
                               80
                                     -1
         000005
                   -1
                                     77
                         -1
                               -1
         000006
                                     90
                   -1
                         76
                               -1
         I 6: TODO

    ▼ Terminal

                          Python Console
                                                                                                                         11:86 CRLF UTF-8 4 spaces Python 3.7 (untitled) 🦫 💆
```

```
📱 File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
    P. y 😲 😤 🌣
                  Exec.py
    untitled C:\Users\l
                         # coding:utf-8
     venv library roc
                         import pandas as pd
      Exec.py
      arender.html
 > IIII External Libraries
                         data2 = {
   Scratches and Cons
                              'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005',
                                        '000006'],
                              'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                              'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                         scores = pd.DataFrame(data2)
                 10
                         frame = scores.pivot_table(values='score', index='SID', columns='CID', fill_value=-1)
                 11
                         print(frame.loc[frame['A01'] != -1]['A02'])
        Exec ×
        C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
         SID
         000001
                    78
         000002
                    -1
         000003
                    86
         000004
                    -1
         Name: A02, dtype: int64
        Process finished with exit code 0

    ▼ Terminal

                          Python Console
                                                                                                                         12:44 CRLF UTF-8 4 spaces Python 3.7 (untitled)
```

```
📱 <u>File Edit View N</u>avigate <u>C</u>ode <u>R</u>efactor R<u>u</u>n <u>T</u>ools VC<u>S W</u>indow <u>H</u>elp untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm
                           courny.ulj-o
    untitled C:\Users\l
                          import pandas as pd
     venv library roc 2
      Exec.py
      arender.html
                          data2 = {
 External Libraries
   Scratches and Cons
                               'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005',
                                         '000006'],
                               'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
                               'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
                          scores = pd.DataFrame(data2)
                  10
                          frame = scores.pivot_table(values='score', index='SID', columns='CID', fill_value=-1)
                  11
                          print(frame.loc[(frame['A01'] != -1) & (frame['A02'] != -1)]['A02'])
                  12
        Exec ×
         C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
         SID
         000001
                     78
         000003
                     86
         Name: A02, dtype: int64
         Process finished with exit code 0
         ≡ 6: TODO

☑ Terminal

                           Python Console
                                                                                                                             12:69 CRLF UTF-8 4 spaces Python 3.7 (untitled)
```

一次不学多,下次再学