

# Python大数据分析

## 八、子查询

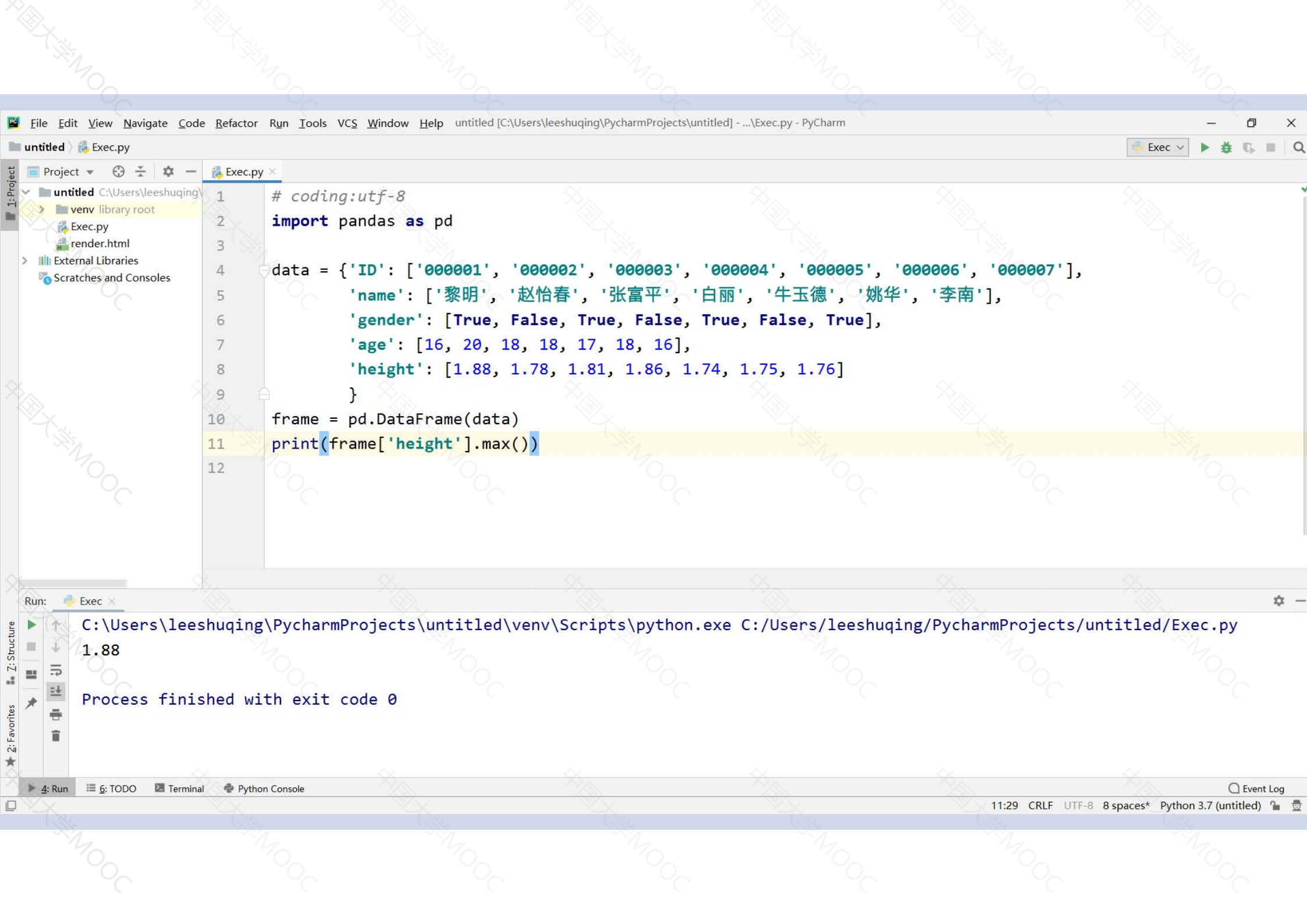
**查询最高身高的学生姓名**



**查询学生姓名**



**查询最高身高**



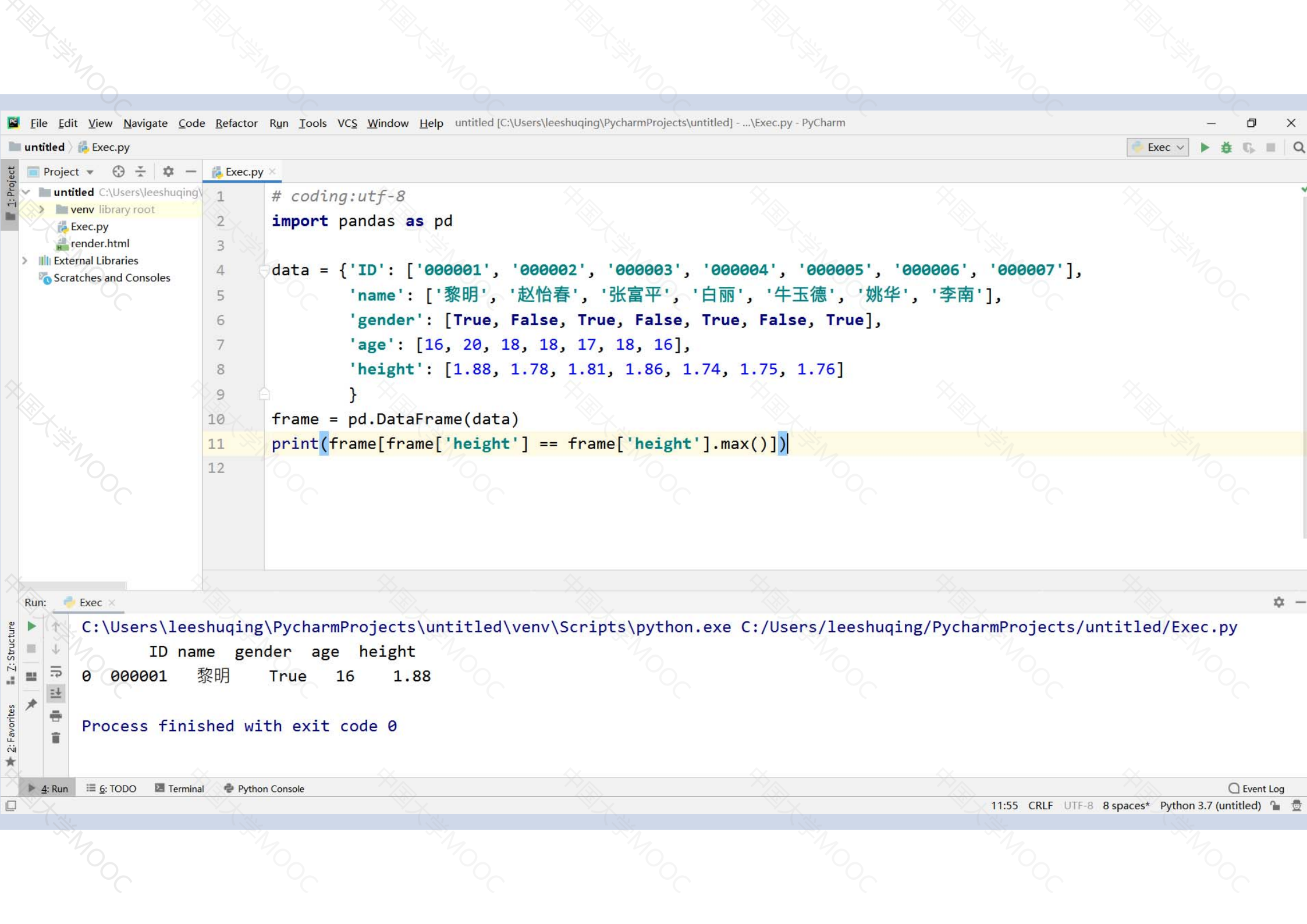
```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 print(frame['height'].max())
12
```

Run: Exec x

C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

1.88

Process finished with exit code 0

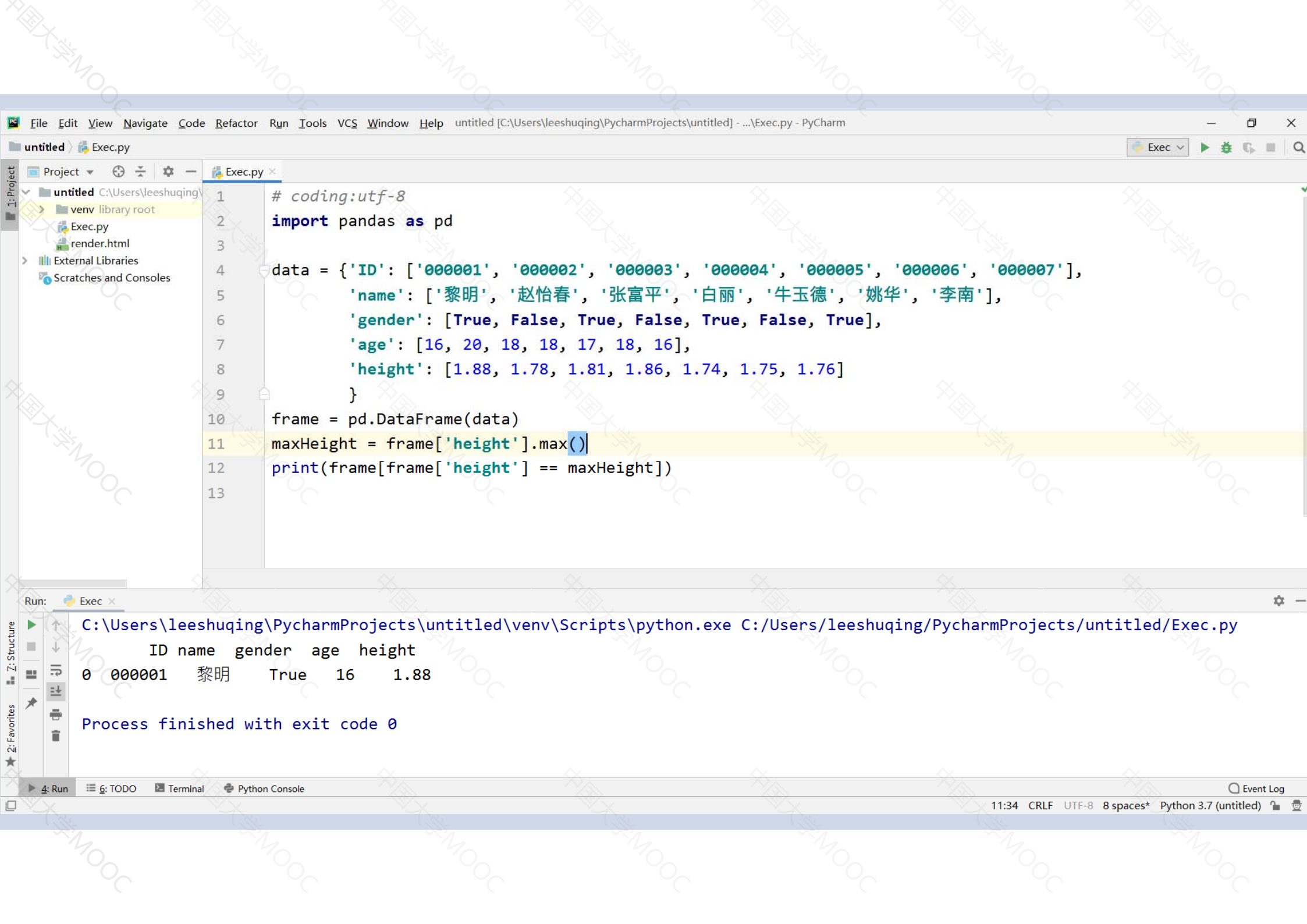


```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
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8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 print(frame[frame['height'] == frame['height'].max()])
12
```

Run: Exec

```
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
   ID name gender age height
0  000001 黎明   True  16   1.88

Process finished with exit code 0
```



File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm

untitled Exec.py

Project  
untitled C:\Users\leeshuqing\venv library root  
Exec.py  
render.html  
External Libraries  
Scratches and Consoles

```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 maxHeight = frame['height'].max()
12 print(frame[frame['height'] == maxHeight])
13
```

Run: Exec C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

```
   ID name gender age height
0  000001  黎明   True  16   1.88
```

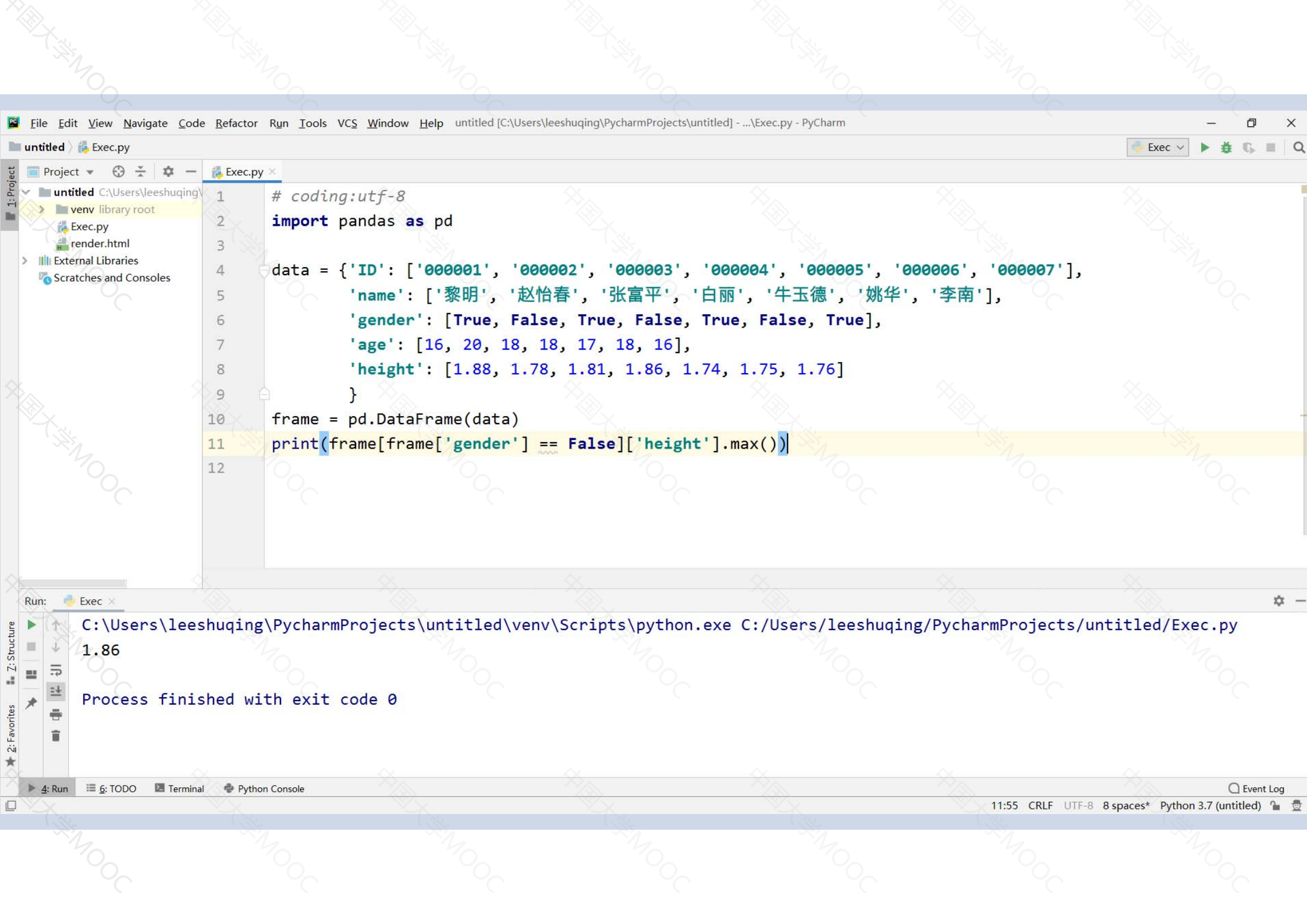
Process finished with exit code 0

4: Run TODO Terminal Python Console

Event Log

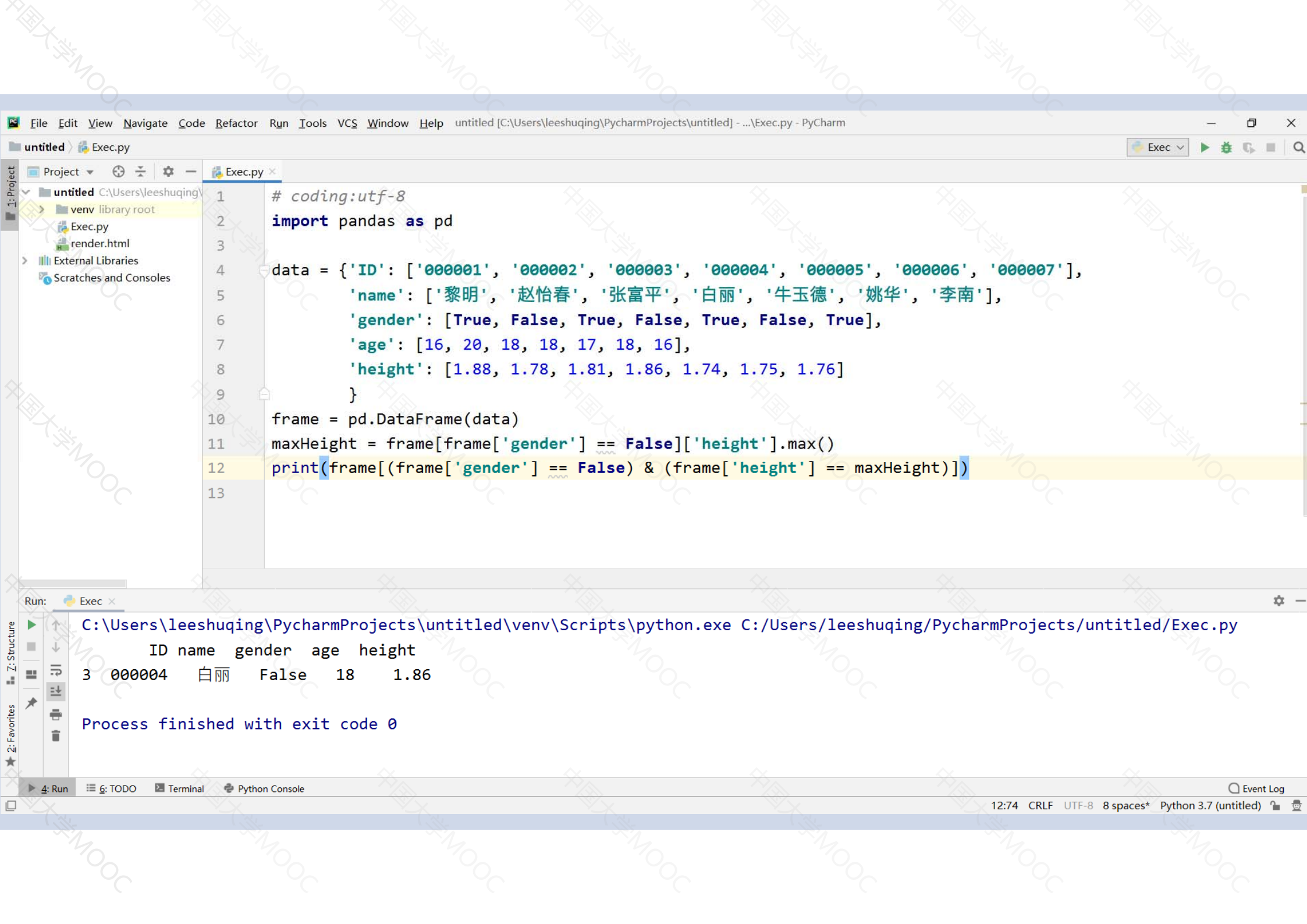
11:34 CRLF UTF-8 8 spaces\* Python 3.7 (untitled)





```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 print(frame[frame['gender'] == False]['height'].max())
12
```

```
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
1.86
Process finished with exit code 0
```

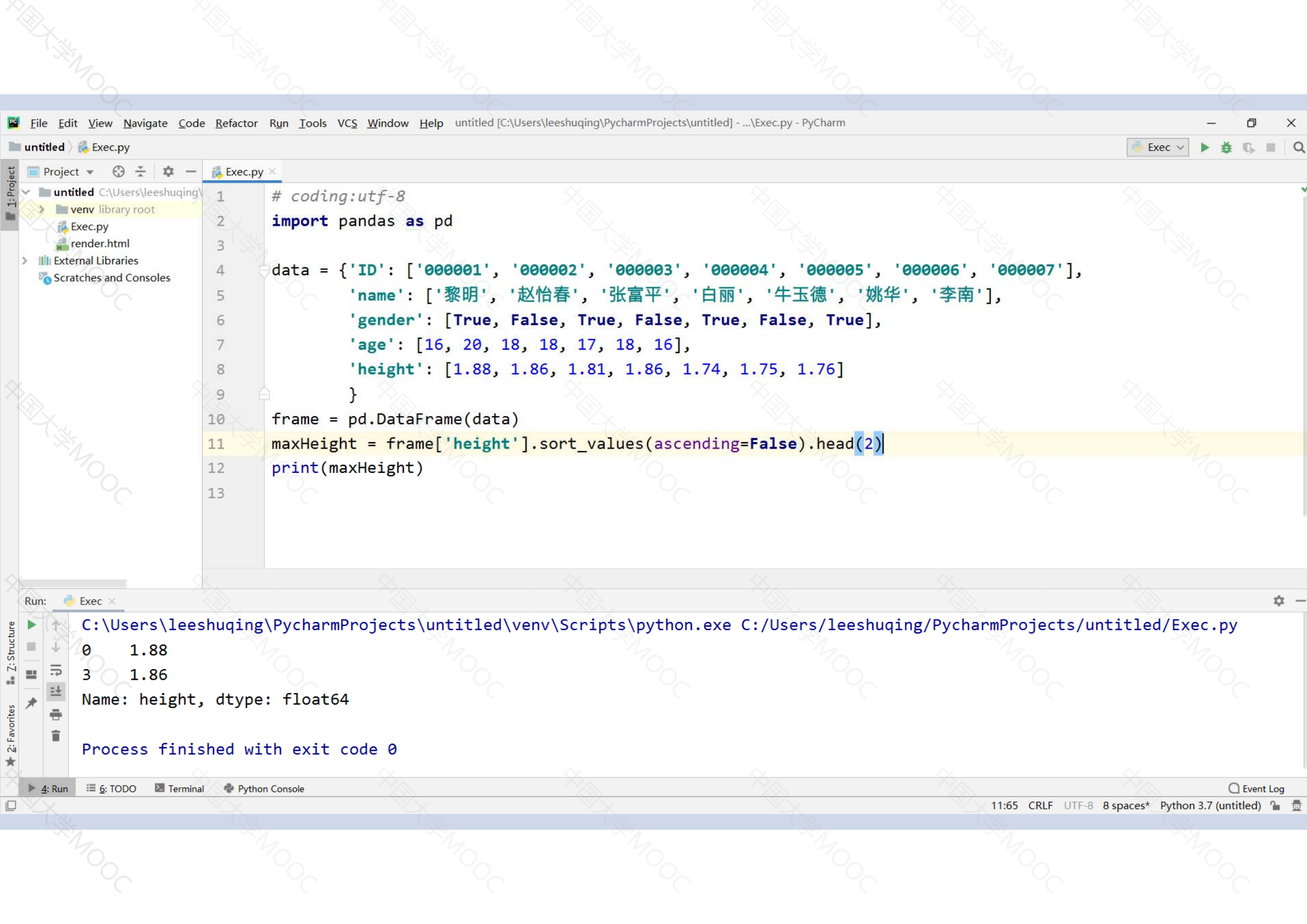


```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 maxHeight = frame[frame['gender'] == False]['height'].max()
12 print(frame[(frame['gender'] == False) & (frame['height'] == maxHeight)])
13
```

C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

	ID	name	gender	age	height
3	000004	白丽	False	18	1.86

Process finished with exit code 0

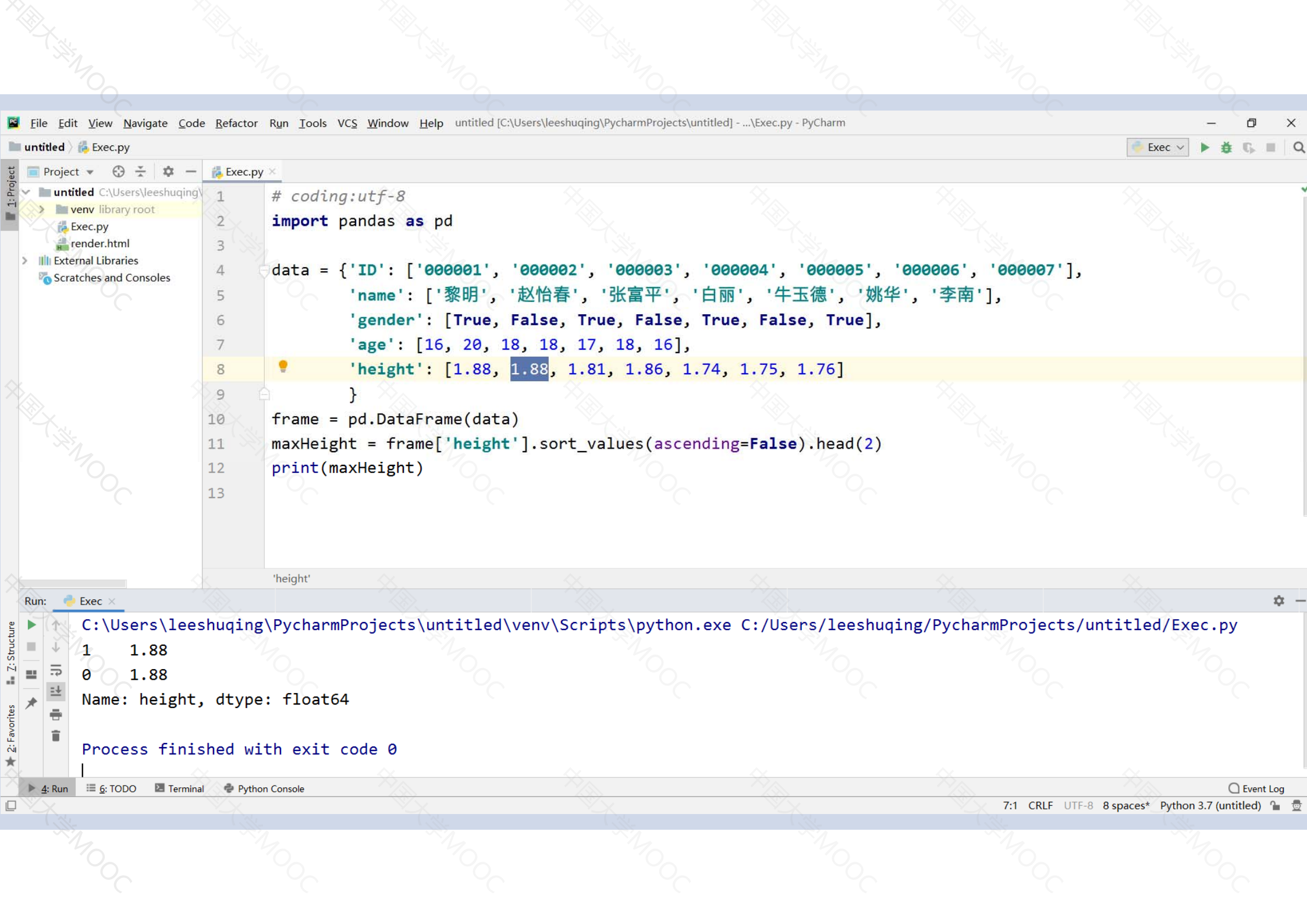


```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.86, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 maxHeight = frame['height'].sort_values(ascending=False).head(2)
12 print(maxHeight)
13
```

```
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
0    1.88
3    1.86
Name: height, dtype: float64

Process finished with exit code 0
```

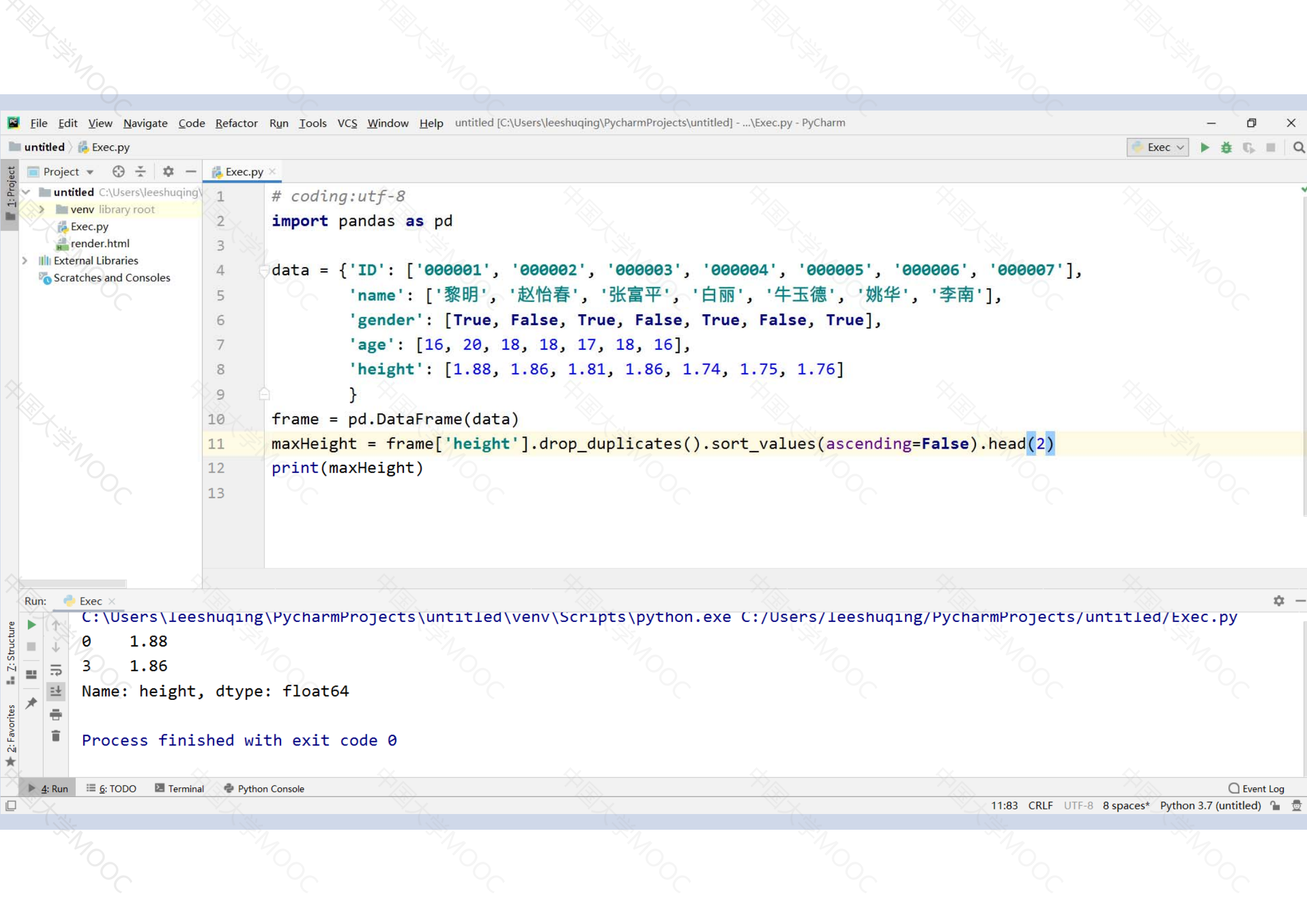




```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
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13
```

```
Run: Exec x
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
1    1.88
0    1.88
Name: height, dtype: float64

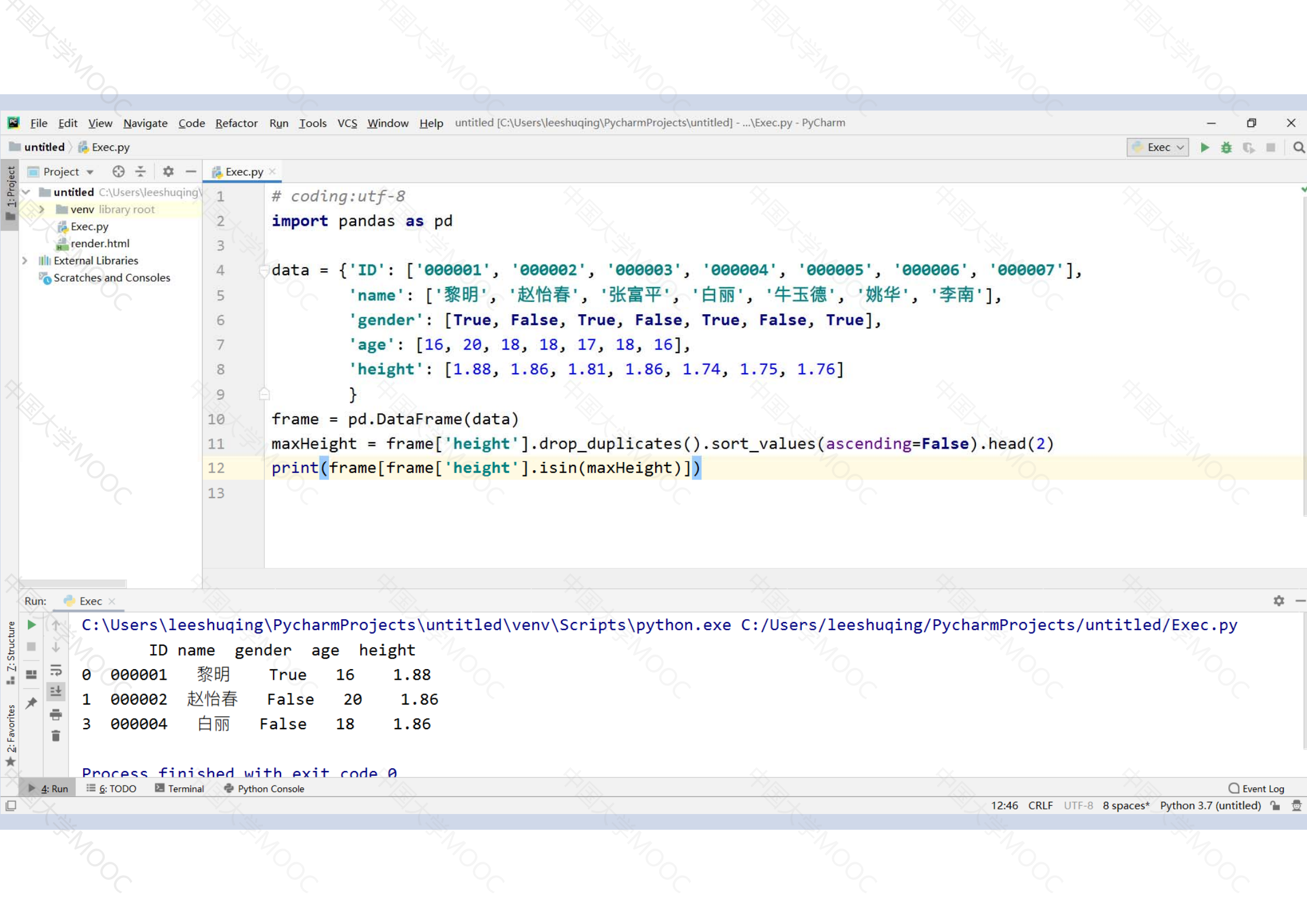
Process finished with exit code 0
```



```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.86, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 maxHeight = frame['height'].drop_duplicates().sort_values(ascending=False).head(2)
12 print(maxHeight)
13
```

```
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
0    1.88
3    1.86
Name: height, dtype: float64

Process finished with exit code 0
```



File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\leeshuqing\PycharmProjects\untitled] - ...\Exec.py - PyCharm

untitled Exec.py

Project  
untitled C:\Users\leeshuqing\  
venv library root  
Exec.py  
render.html  
External Libraries  
Scratches and Consoles

```
1 # coding:utf-8
2 import pandas as pd
3
4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.86, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 maxHeight = frame['height'].drop_duplicates().sort_values(ascending=False).head(2)
12 print(frame[frame['height'].isin(maxHeight)])
13
```

Run: Exec C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

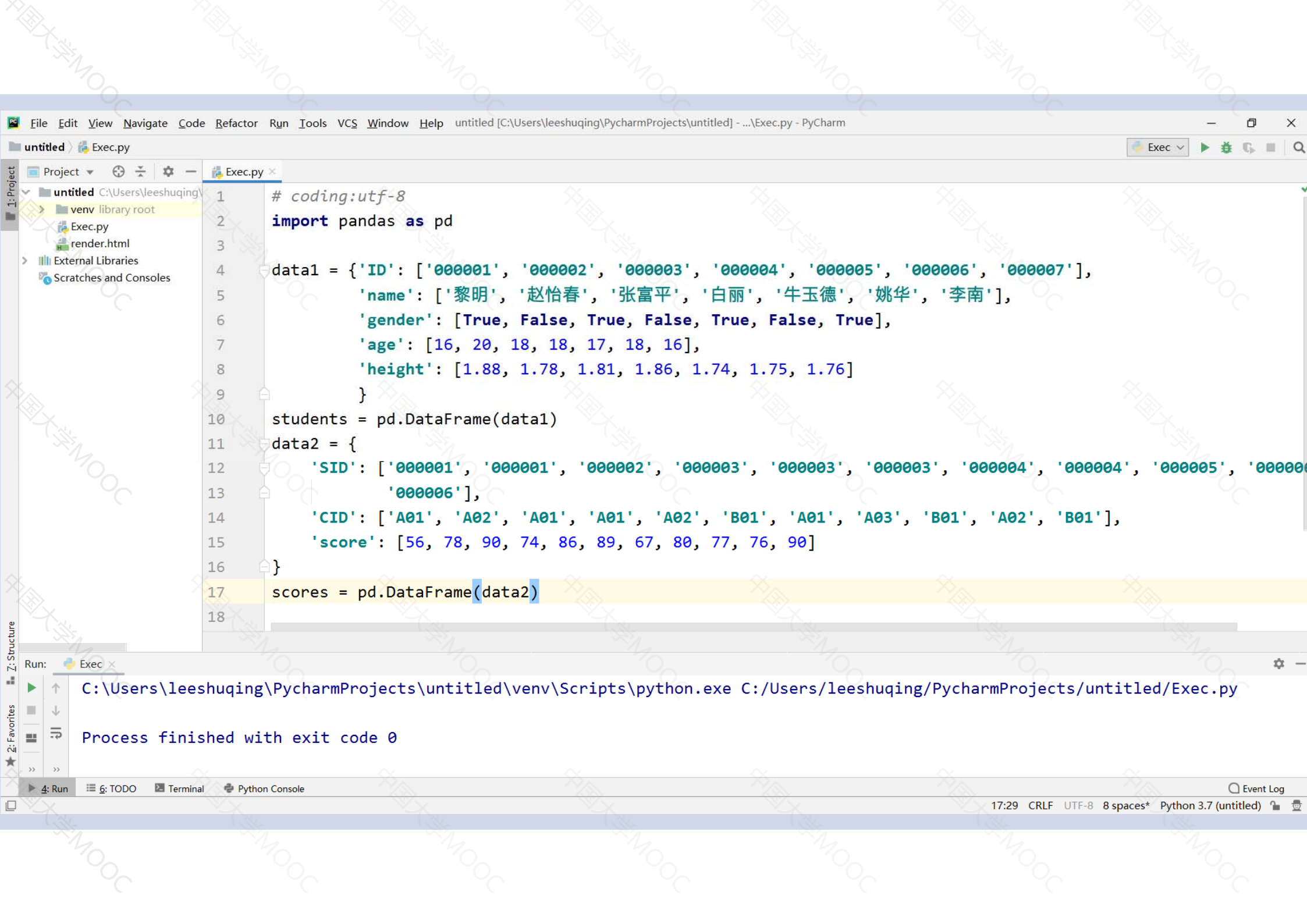
	ID	name	gender	age	height
0	000001	黎明	True	16	1.88
1	000002	赵怡春	False	20	1.86
3	000004	白丽	False	18	1.86

Process finished with exit code 0

4: Run TODO Terminal Python Console

Event Log

12:46 CRLF UTF-8 8 spaces\* Python 3.7 (untitled)

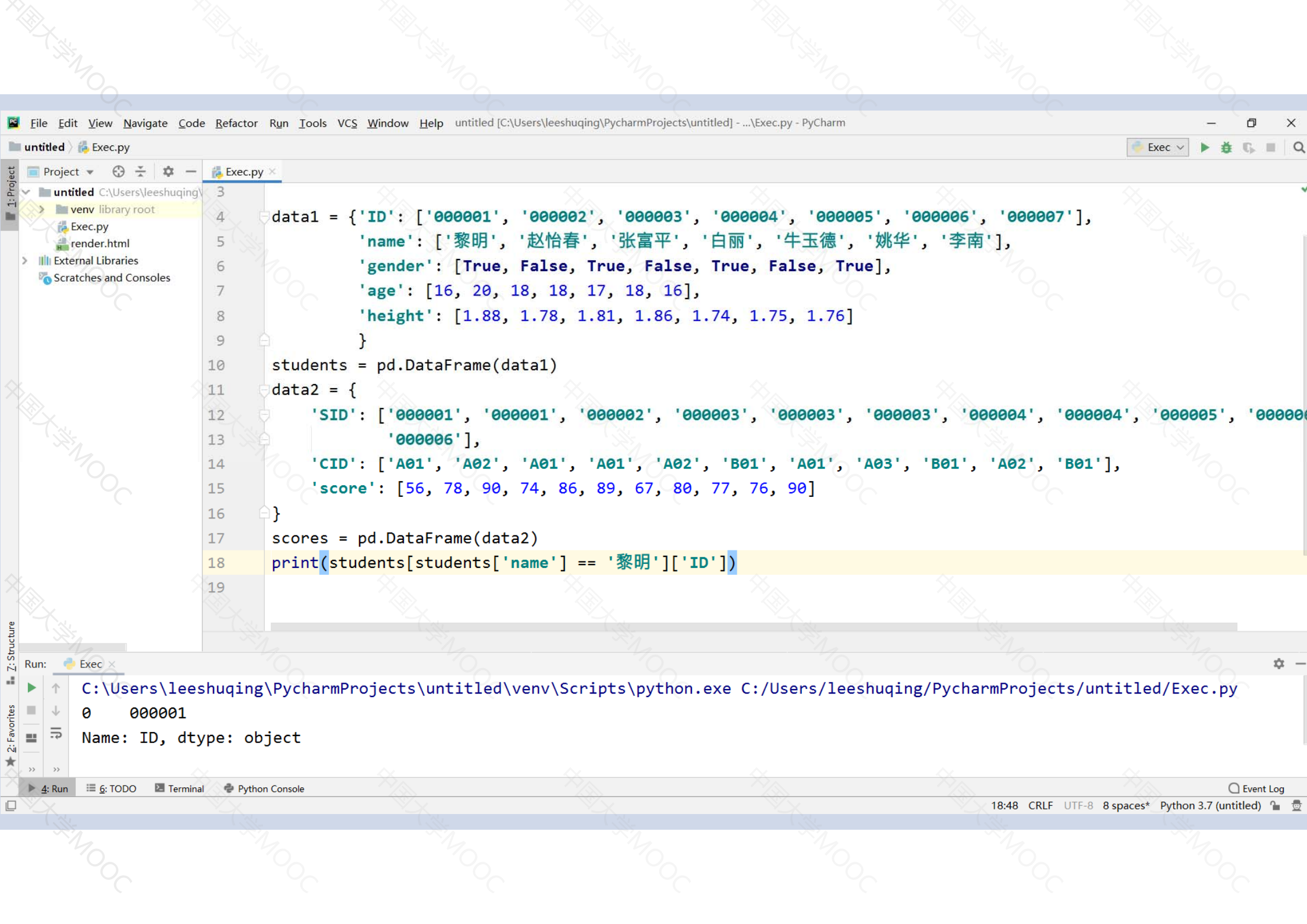


```
1 # coding:utf-8
2 import pandas as pd
3
4 data1 = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5          'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6          'gender': [True, False, True, False, True, False, True],
7          'age': [16, 20, 18, 18, 17, 18, 16],
8          'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 students = pd.DataFrame(data1)
11
12 data2 = {
13     'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005', '000006'],
14     'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
15     'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]}
16
17 scores = pd.DataFrame(data2)
```

C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

Process finished with exit code 0

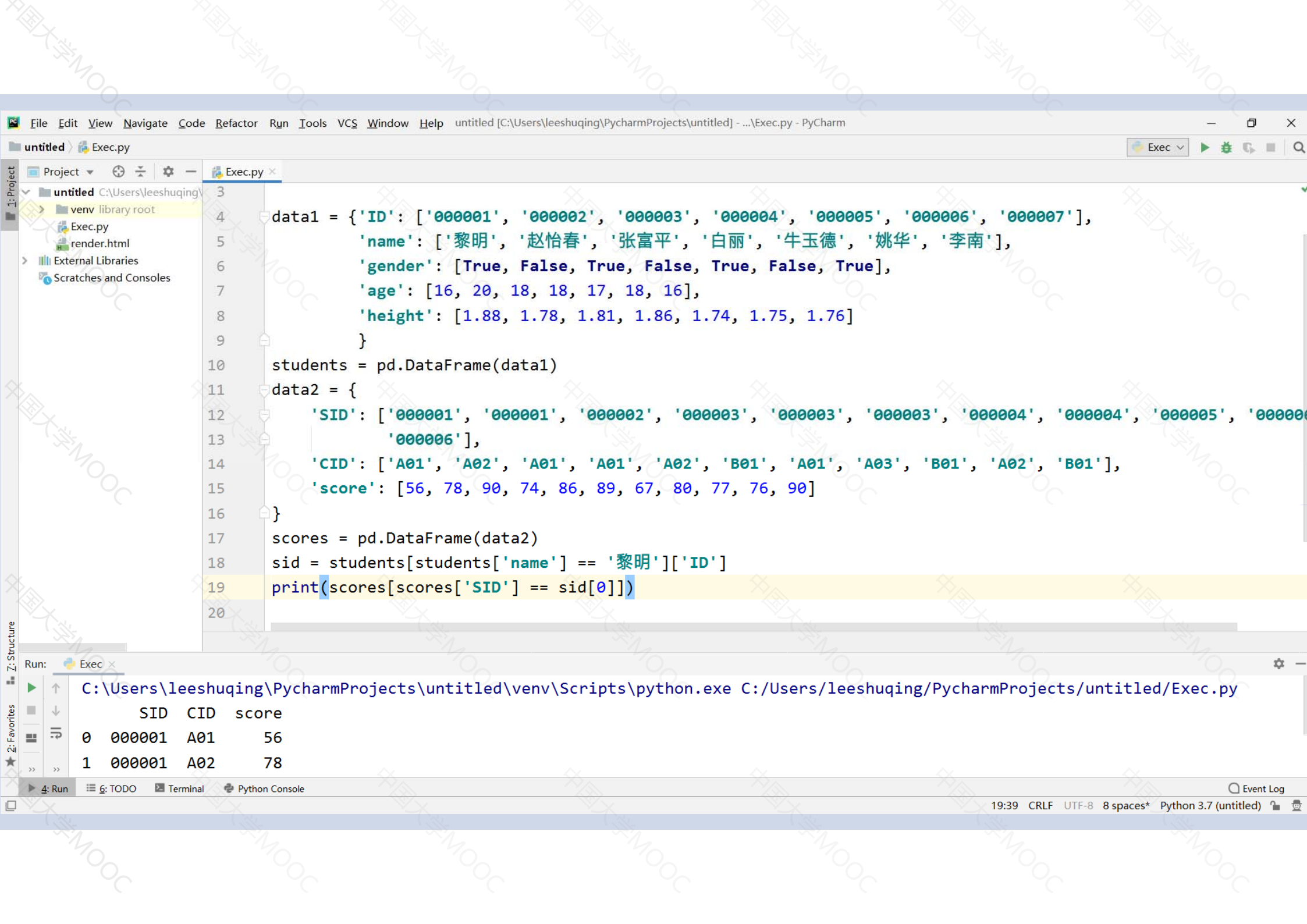




```
3
4 data1 = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5          'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6          'gender': [True, False, True, False, True, False, True],
7          'age': [16, 20, 18, 18, 17, 18, 16],
8          'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 students = pd.DataFrame(data1)
11 data2 = {
12     'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005', '000006'],
13     'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
14     'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
15 }
16
17 scores = pd.DataFrame(data2)
18 print(students[students['name'] == '黎明']['ID'])
19
```

```
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
0 000001
Name: ID, dtype: object
```

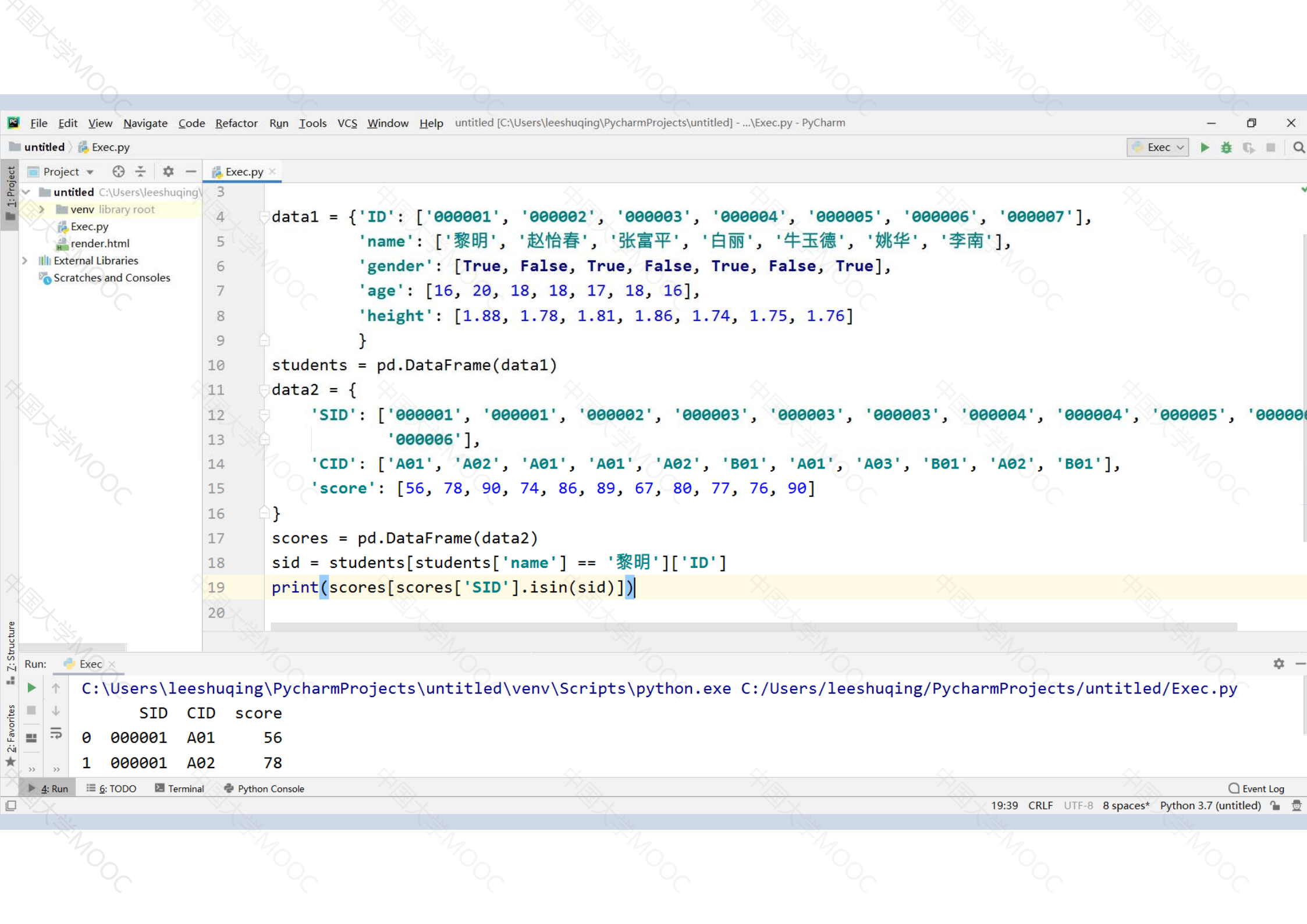




```
3
4 data1 = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
9     }
10 students = pd.DataFrame(data1)
11 data2 = {
12     'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005', '000006'],
13     'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
14     'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
15 }
16
17 scores = pd.DataFrame(data2)
18 sid = students[students['name'] == '黎明']['ID']
19 print(scores[scores['SID'] == sid[0]])
20
```

C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

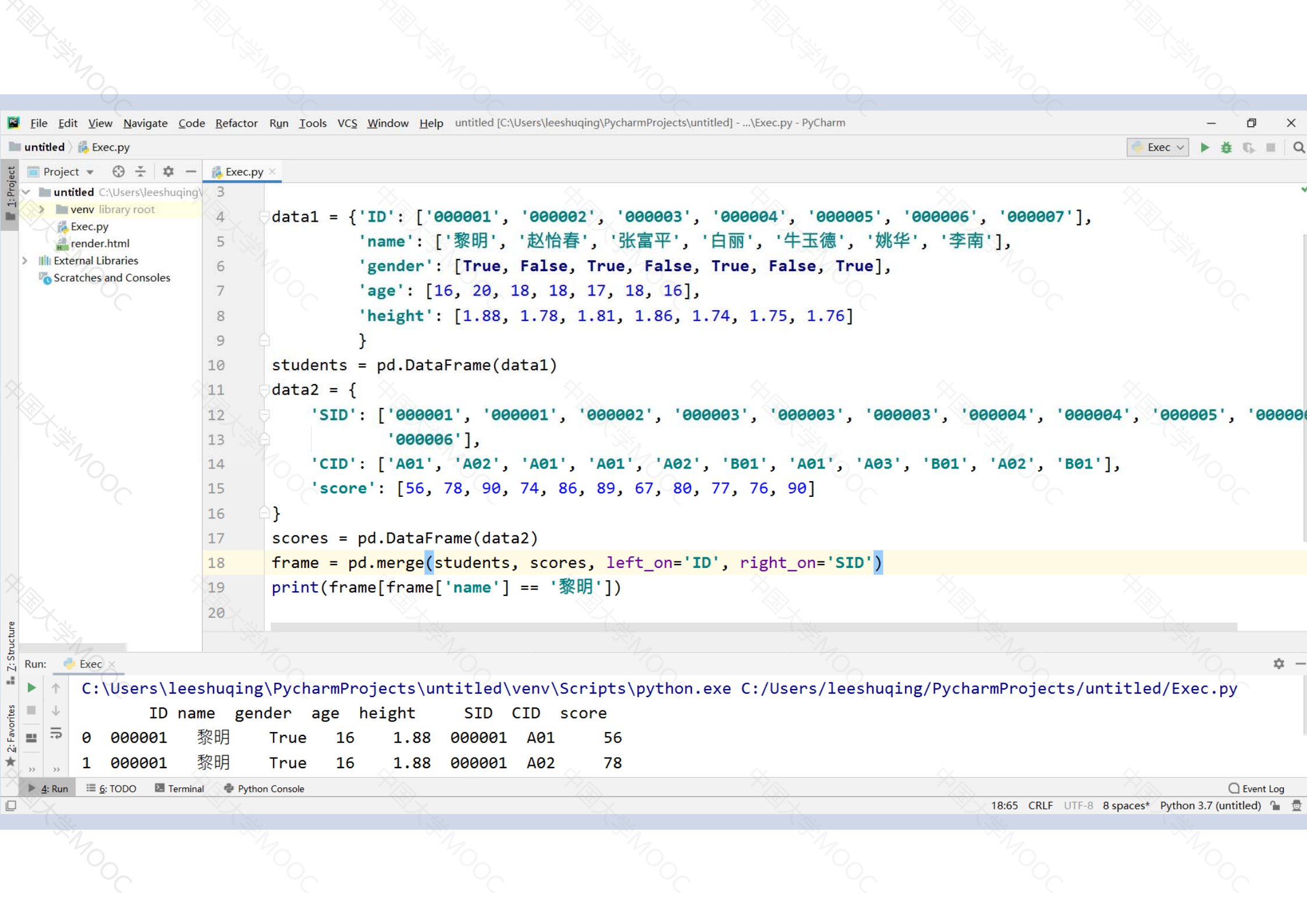
	SID	CID	score
0	000001	A01	56
1	000001	A02	78

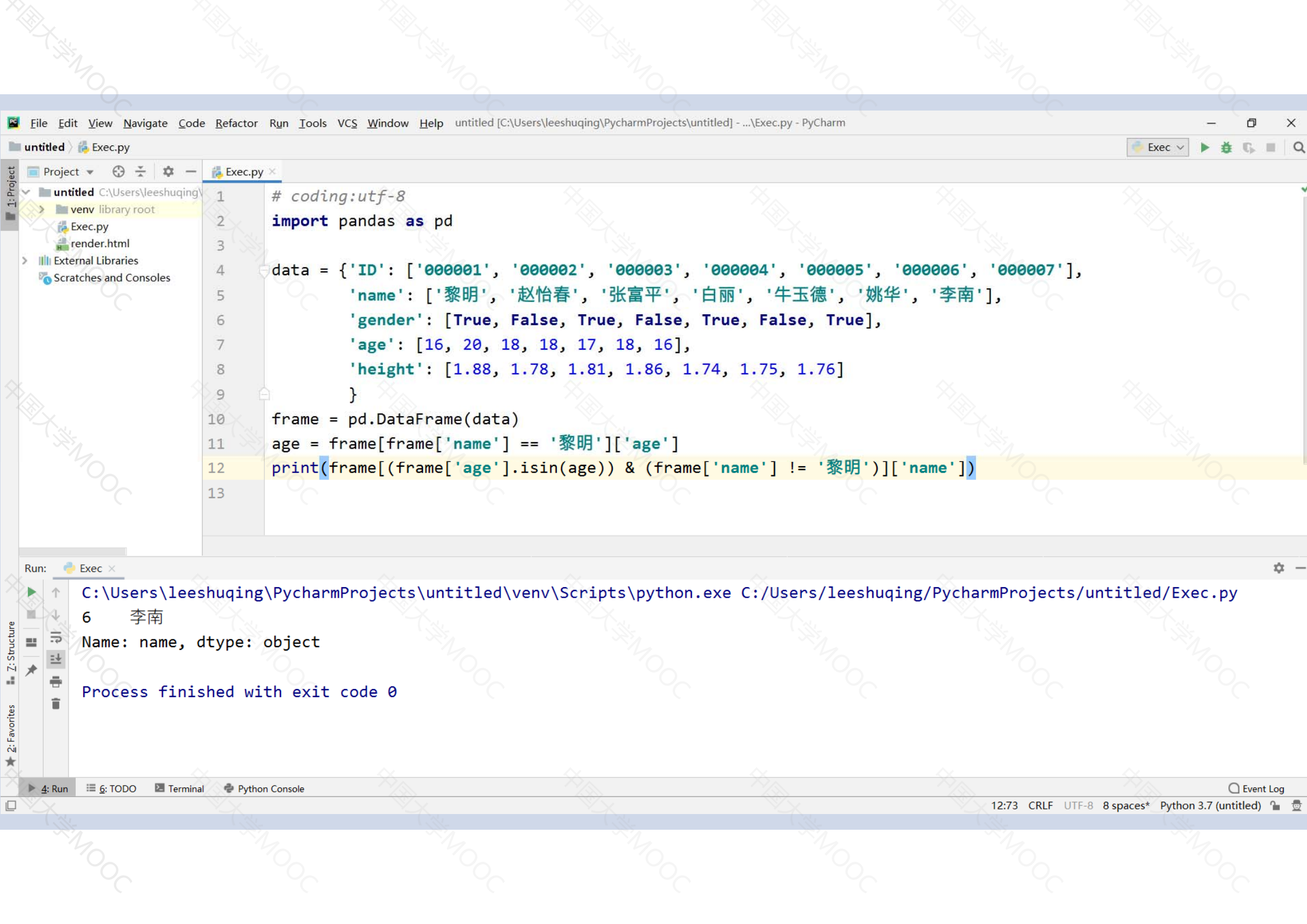


```
3
4 data1 = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
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7         'age': [16, 20, 18, 18, 17, 18, 16],
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9     }
10 students = pd.DataFrame(data1)
11 data2 = {
12     'SID': ['000001', '000001', '000002', '000003', '000003', '000003', '000004', '000004', '000005', '000006'],
13     'CID': ['A01', 'A02', 'A01', 'A01', 'A02', 'B01', 'A01', 'A03', 'B01', 'A02', 'B01'],
14     'score': [56, 78, 90, 74, 86, 89, 67, 80, 77, 76, 90]
15 }
16
17 scores = pd.DataFrame(data2)
18 sid = students[students['name'] == '黎明']['ID']
19 print(scores[scores['SID'].isin(sid)])
20
```

C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py

	SID	CID	score
0	000001	A01	56
1	000001	A02	78





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untitled Exec.py

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Exec.py  
render.html  
External Libraries  
Scratches and Consoles

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4 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
5         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
6         'gender': [True, False, True, False, True, False, True],
7         'age': [16, 20, 18, 18, 17, 18, 16],
8         'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
9
10 frame = pd.DataFrame(data)
11 age = frame[frame['name'] == '黎明']['age']
12 print(frame[(frame['age'].isin(age)) & (frame['name'] != '黎明')]['name'])
13
```

Run: Exec

```
C:\Users\leeshuqing\PycharmProjects\untitled\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/untitled/Exec.py
6 李南
Name: name, dtype: object

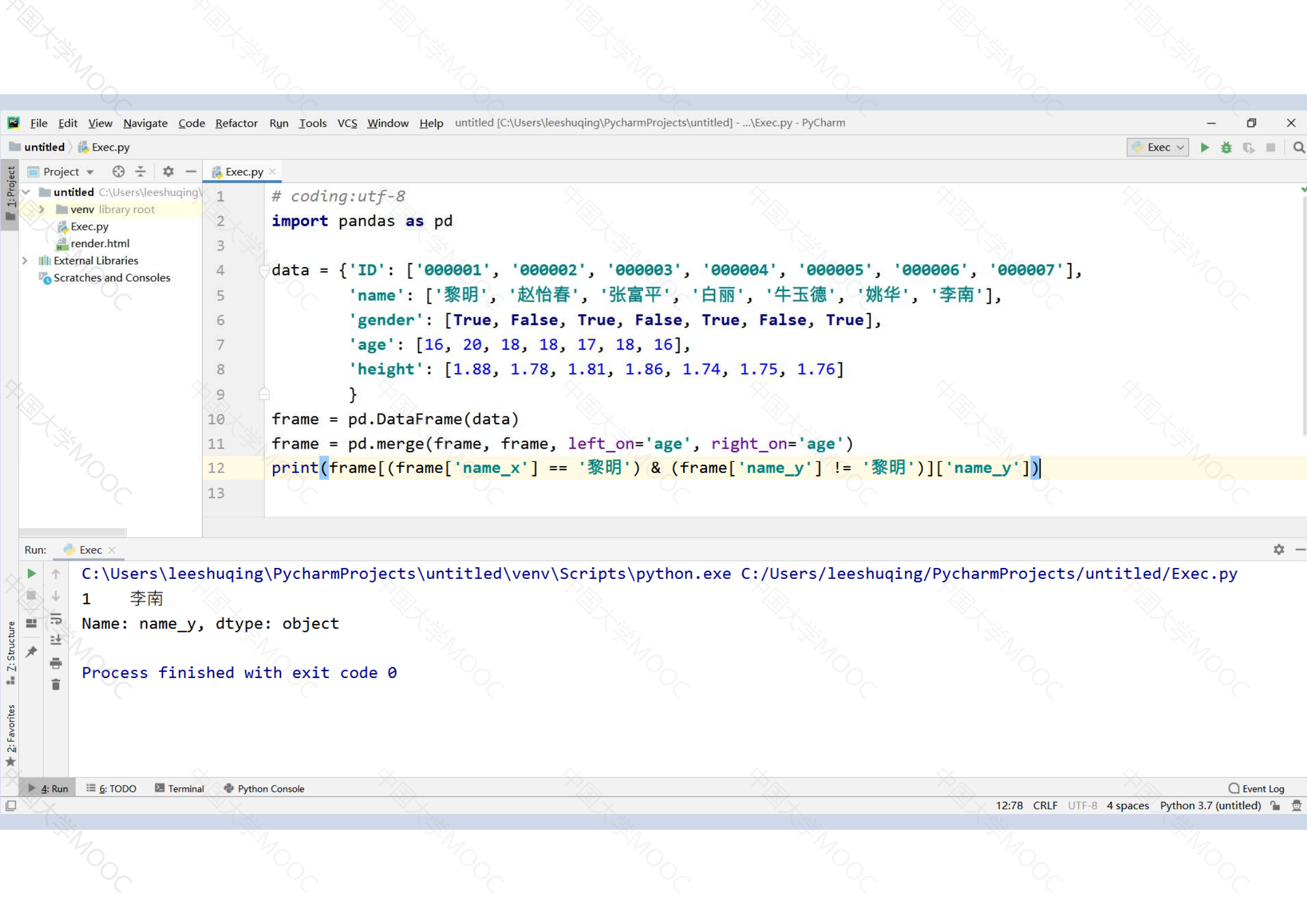
Process finished with exit code 0
```

4: Run TODO Terminal Python Console

Event Log

12:73 CRLF UTF-8 8 spaces\* Python 3.7 (untitled)







**一次不学多，下次再学**