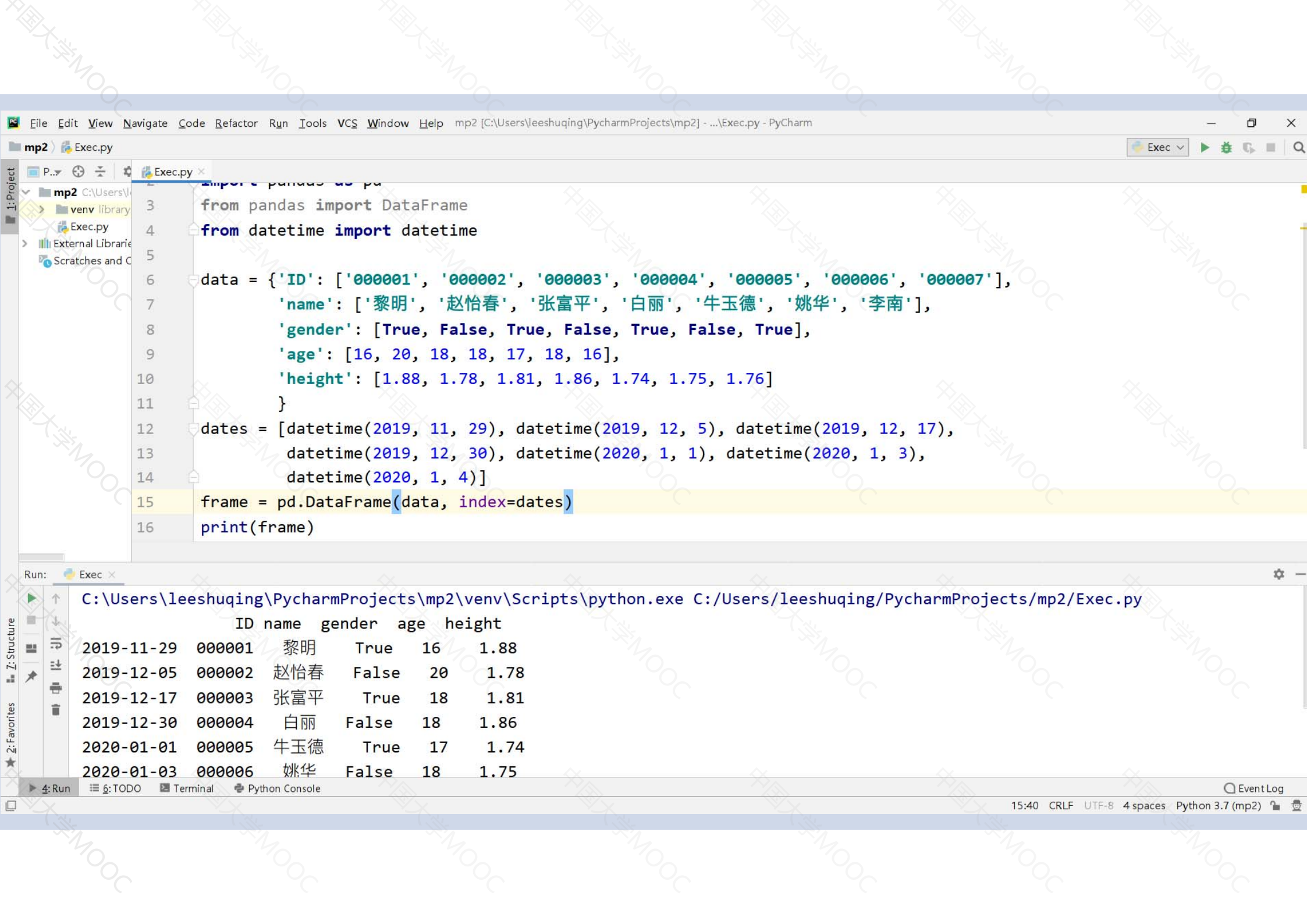
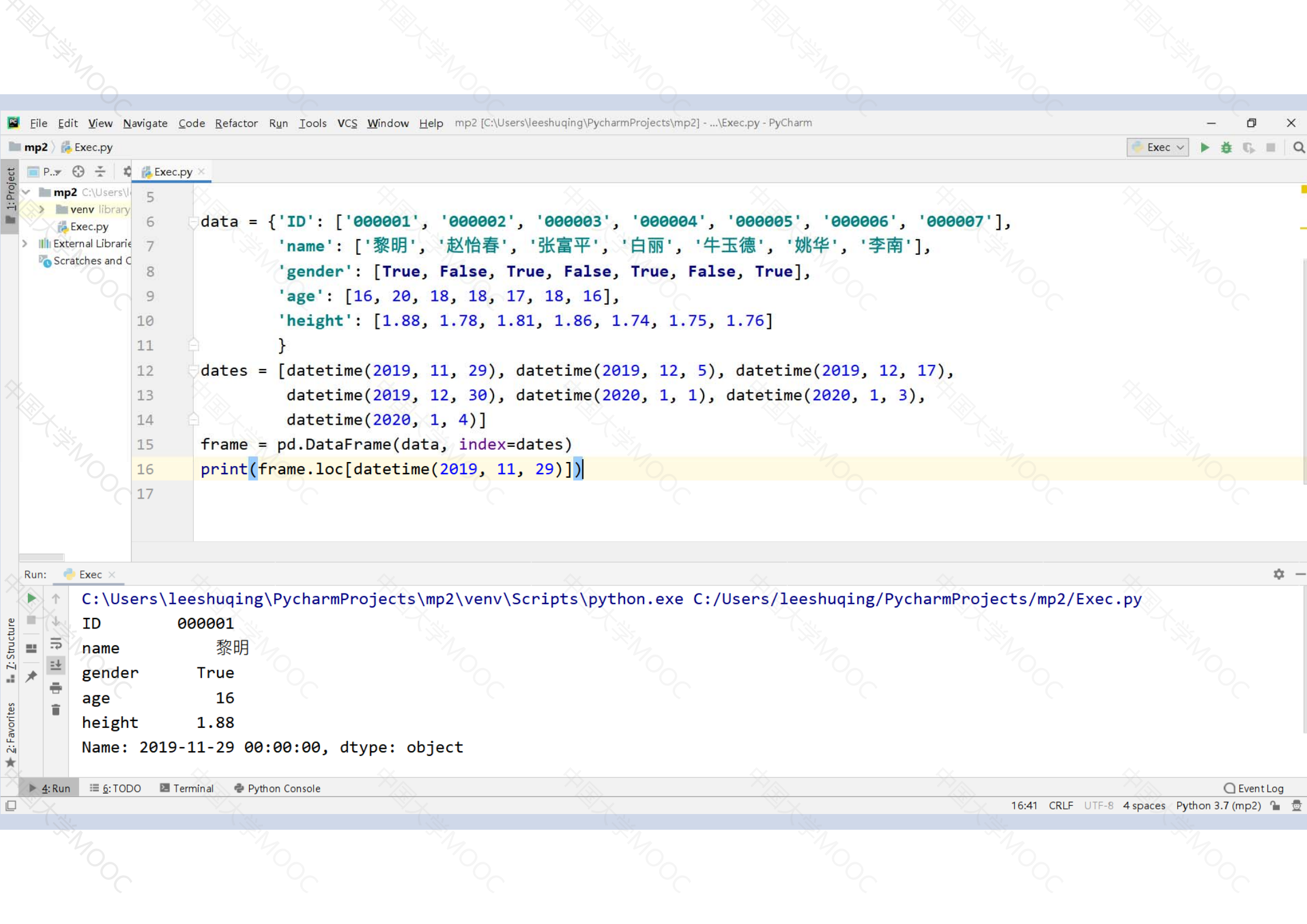


# Python大数据分析

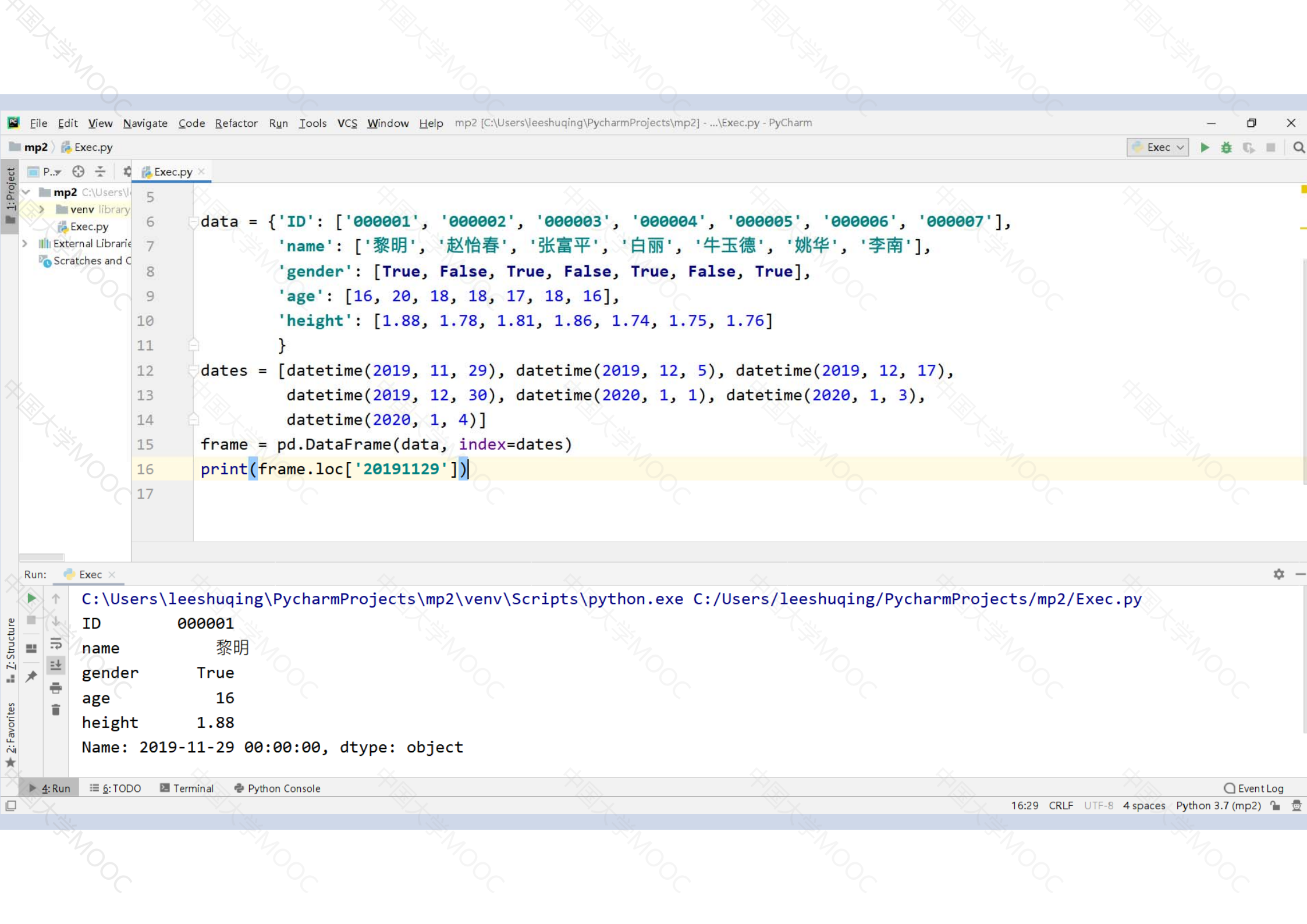
## 二、时间索引





```
5
6 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
7         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
8         'gender': [True, False, True, False, True, False, True],
9         'age': [16, 20, 18, 18, 17, 18, 16],
10        'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
11        }
12 dates = [datetime(2019, 11, 29), datetime(2019, 12, 5), datetime(2019, 12, 17),
13          datetime(2019, 12, 30), datetime(2020, 1, 1), datetime(2020, 1, 3),
14          datetime(2020, 1, 4)]
15 frame = pd.DataFrame(data, index=dates)
16 print(frame.loc[datetime(2019, 11, 29)])
17
```

```
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
ID      000001
name    黎明
gender   True
age      16
height   1.88
Name: 2019-11-29 00:00:00, dtype: object
```

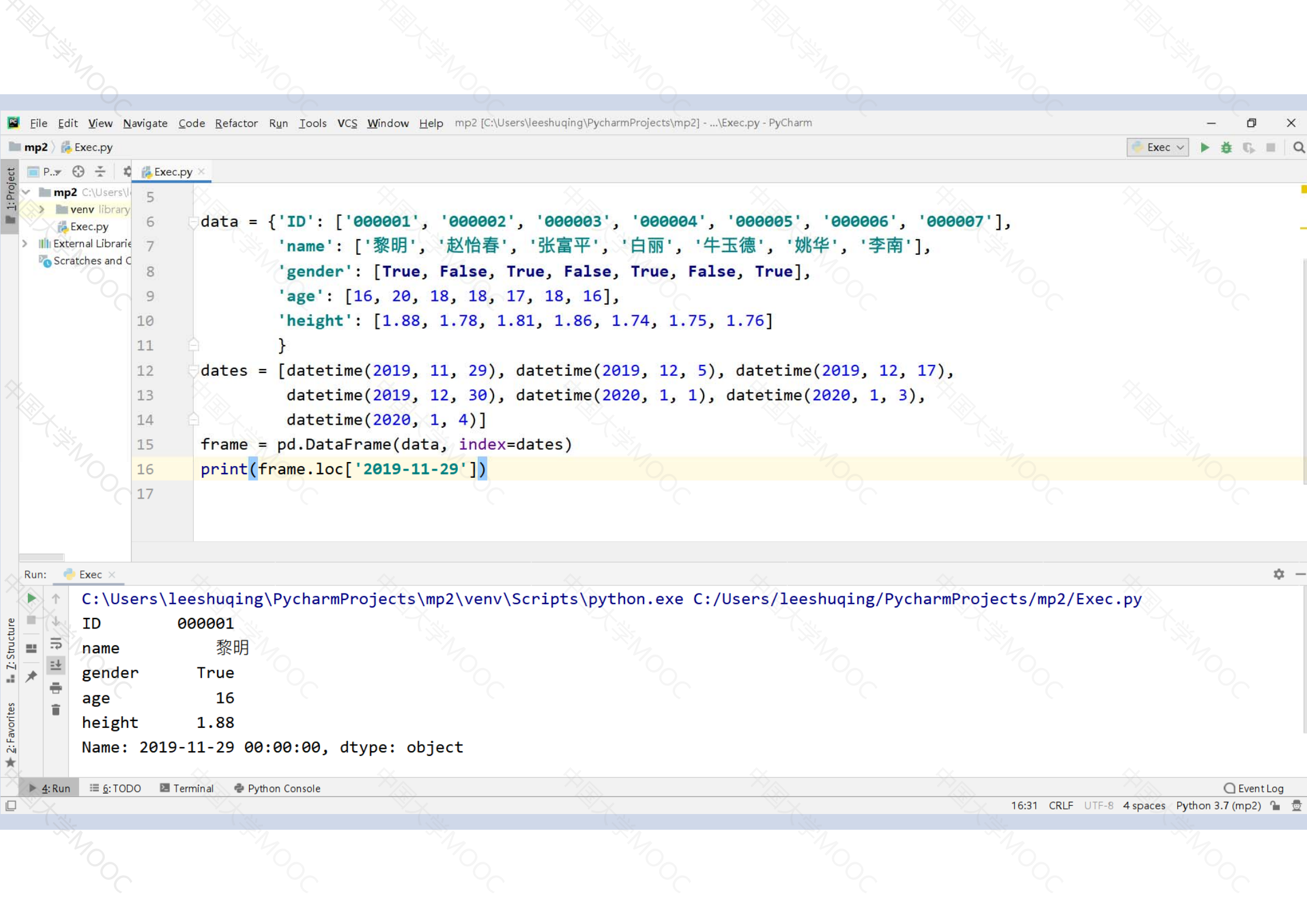


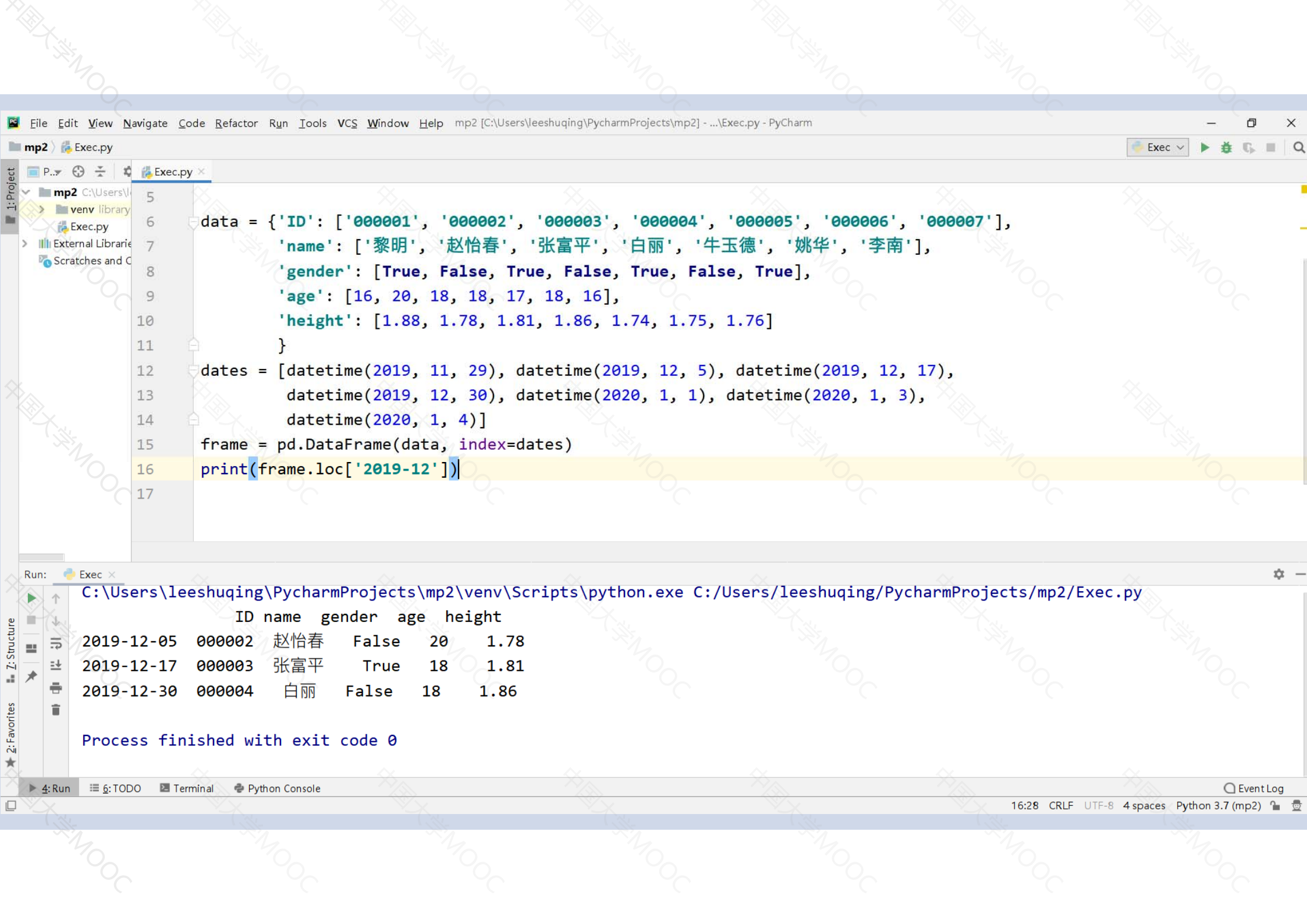
```
5
6 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
7         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
8         'gender': [True, False, True, False, True, False, True],
9         'age': [16, 20, 18, 18, 17, 18, 16],
10        'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
11        }
12 dates = [datetime(2019, 11, 29), datetime(2019, 12, 5), datetime(2019, 12, 17),
13          datetime(2019, 12, 30), datetime(2020, 1, 1), datetime(2020, 1, 3),
14          datetime(2020, 1, 4)]
15 frame = pd.DataFrame(data, index=dates)
16 print(frame.loc['20191129'])
17
```

C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py

```
ID      000001
name     黎明
gender   True
age      16
height   1.88
Name: 2019-11-29 00:00:00, dtype: object
```





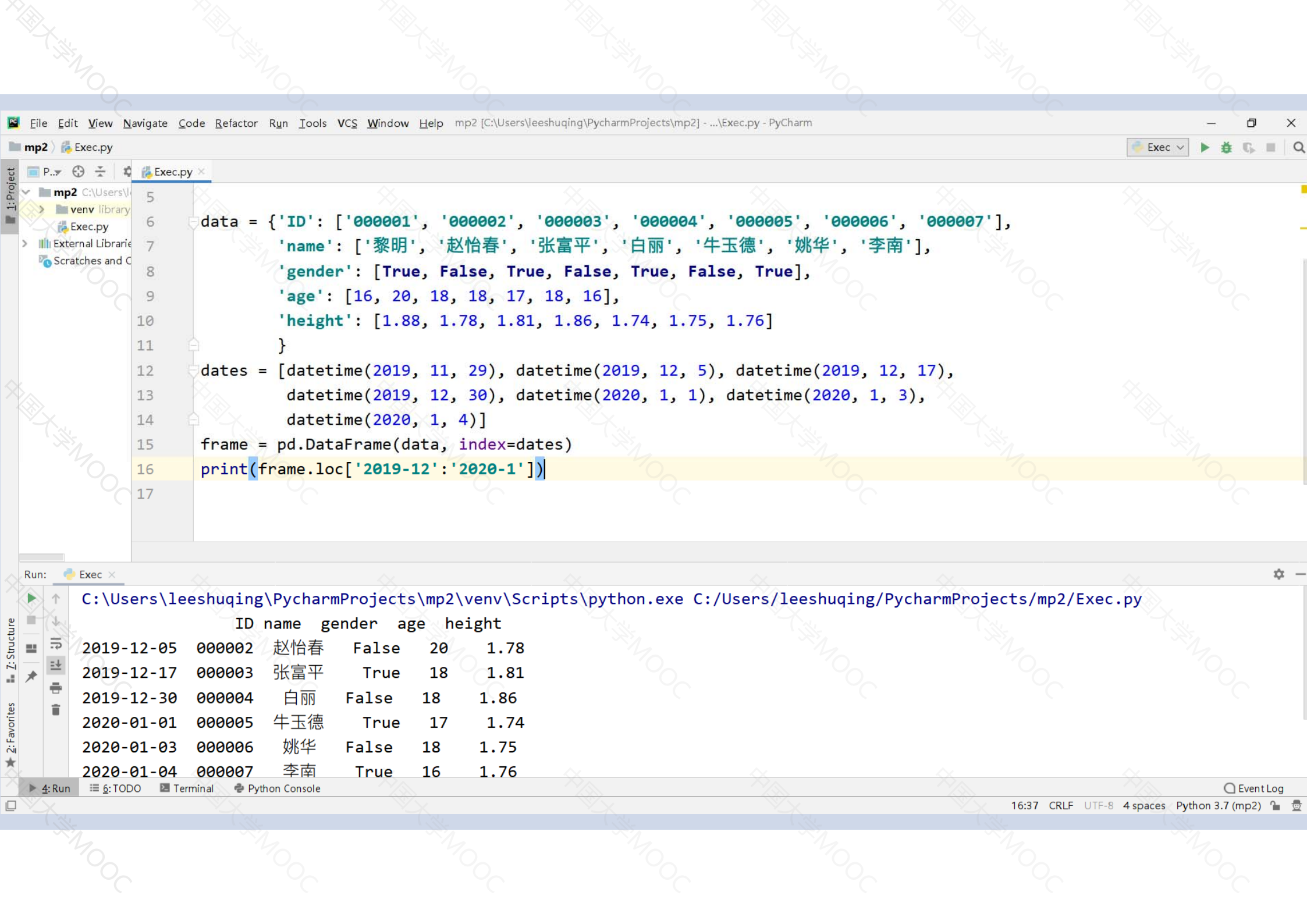


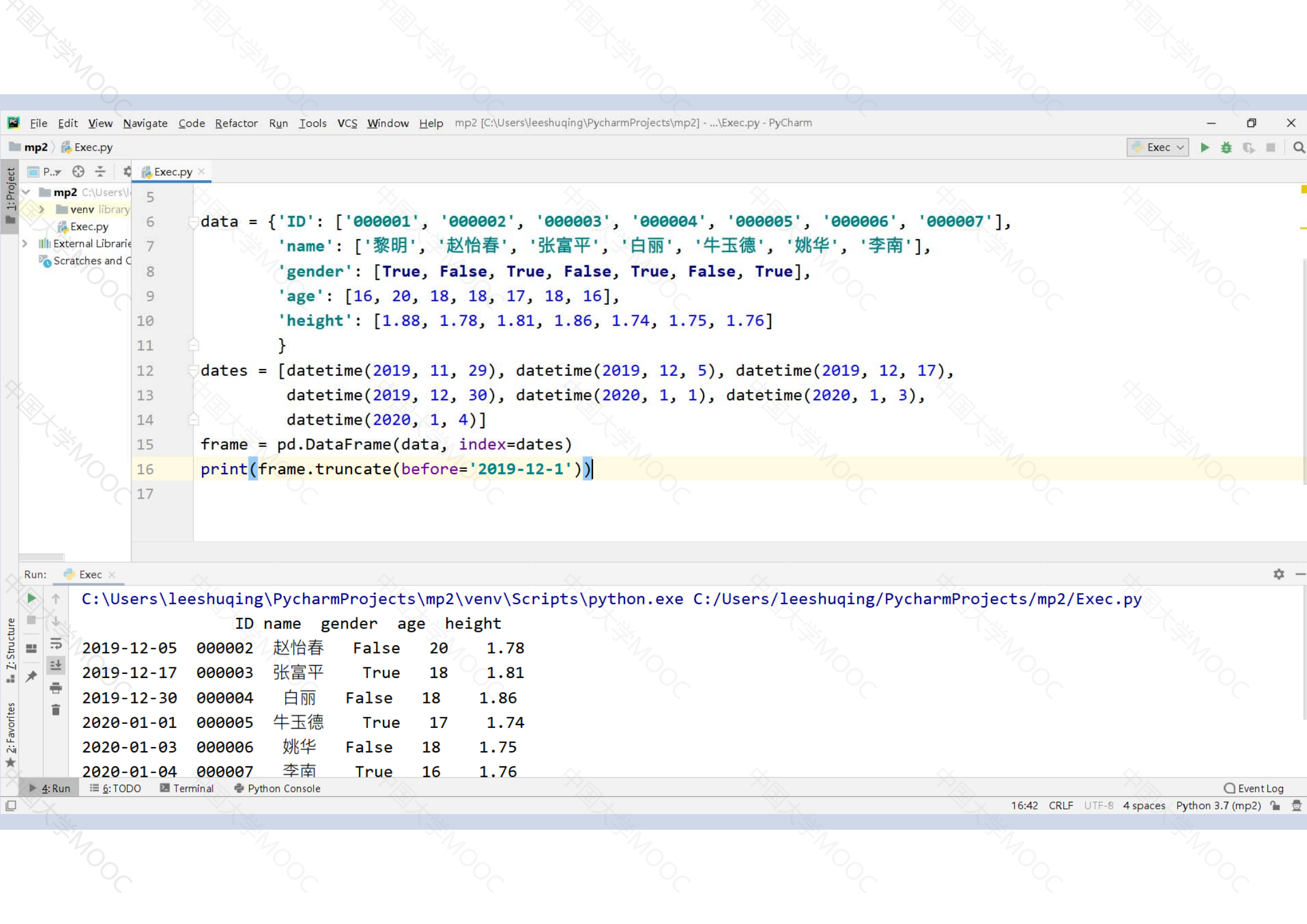
```
5
6 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
7         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
8         'gender': [True, False, True, False, True, False, True],
9         'age': [16, 20, 18, 18, 17, 18, 16],
10        'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]
11        }
12 dates = [datetime(2019, 11, 29), datetime(2019, 12, 5), datetime(2019, 12, 17),
13          datetime(2019, 12, 30), datetime(2020, 1, 1), datetime(2020, 1, 3),
14          datetime(2020, 1, 4)]
15 frame = pd.DataFrame(data, index=dates)
16 print(frame.loc['2019-12'])
17
```

Run: Exec x  
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py

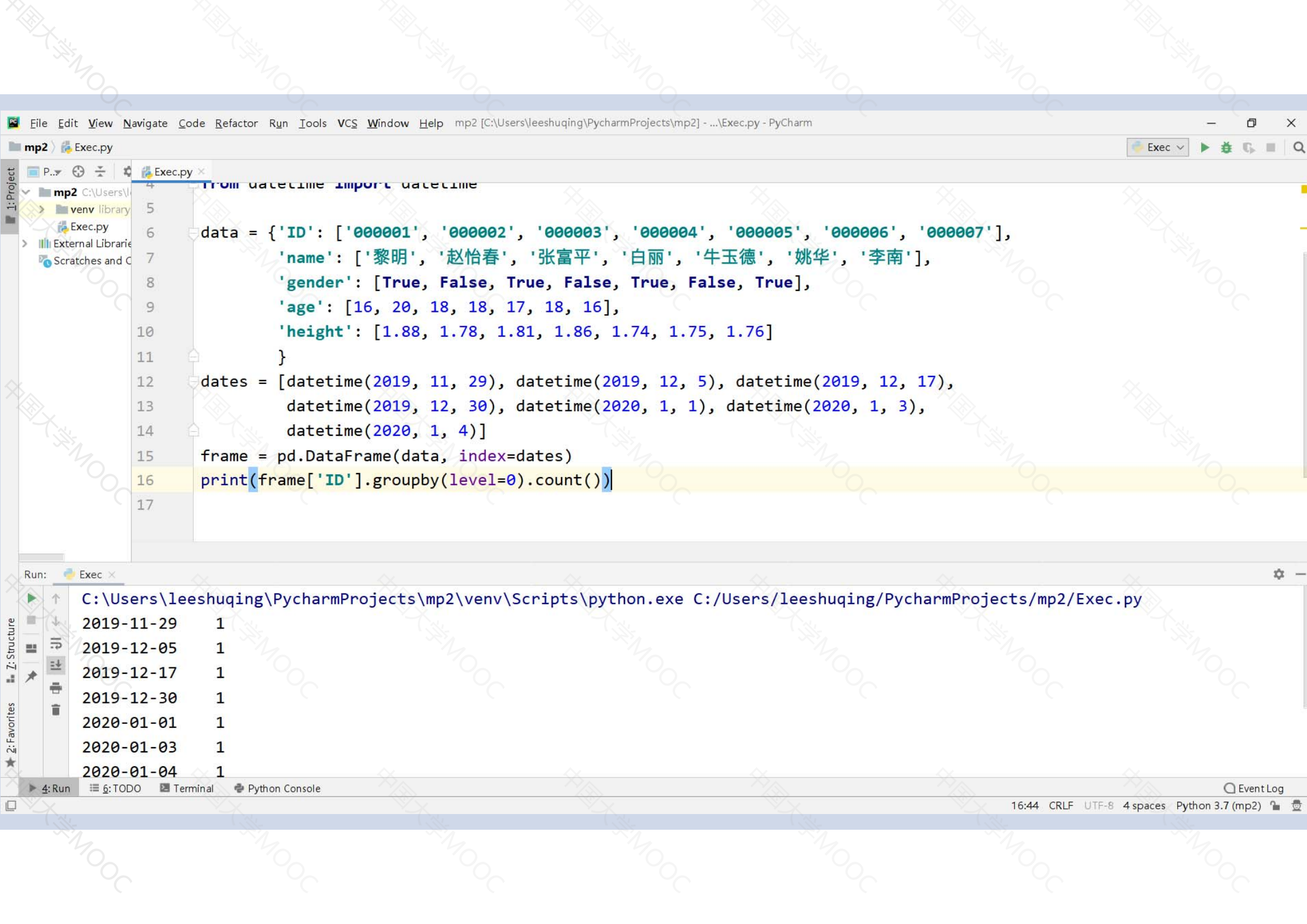
	ID	name	gender	age	height
2019-12-05	000002	赵怡春	False	20	1.78
2019-12-17	000003	张富平	True	18	1.81
2019-12-30	000004	白丽	False	18	1.86

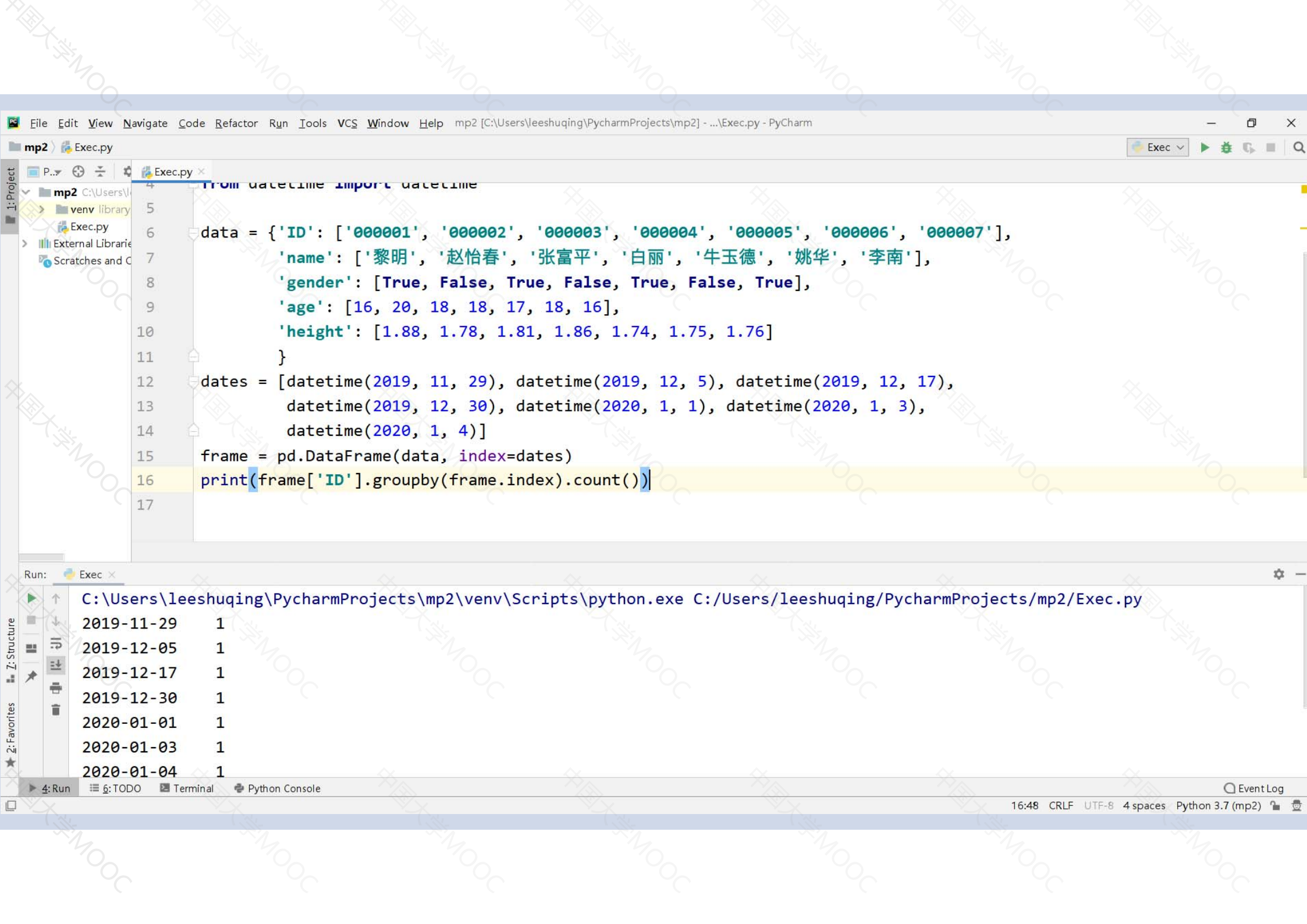
Process finished with exit code 0

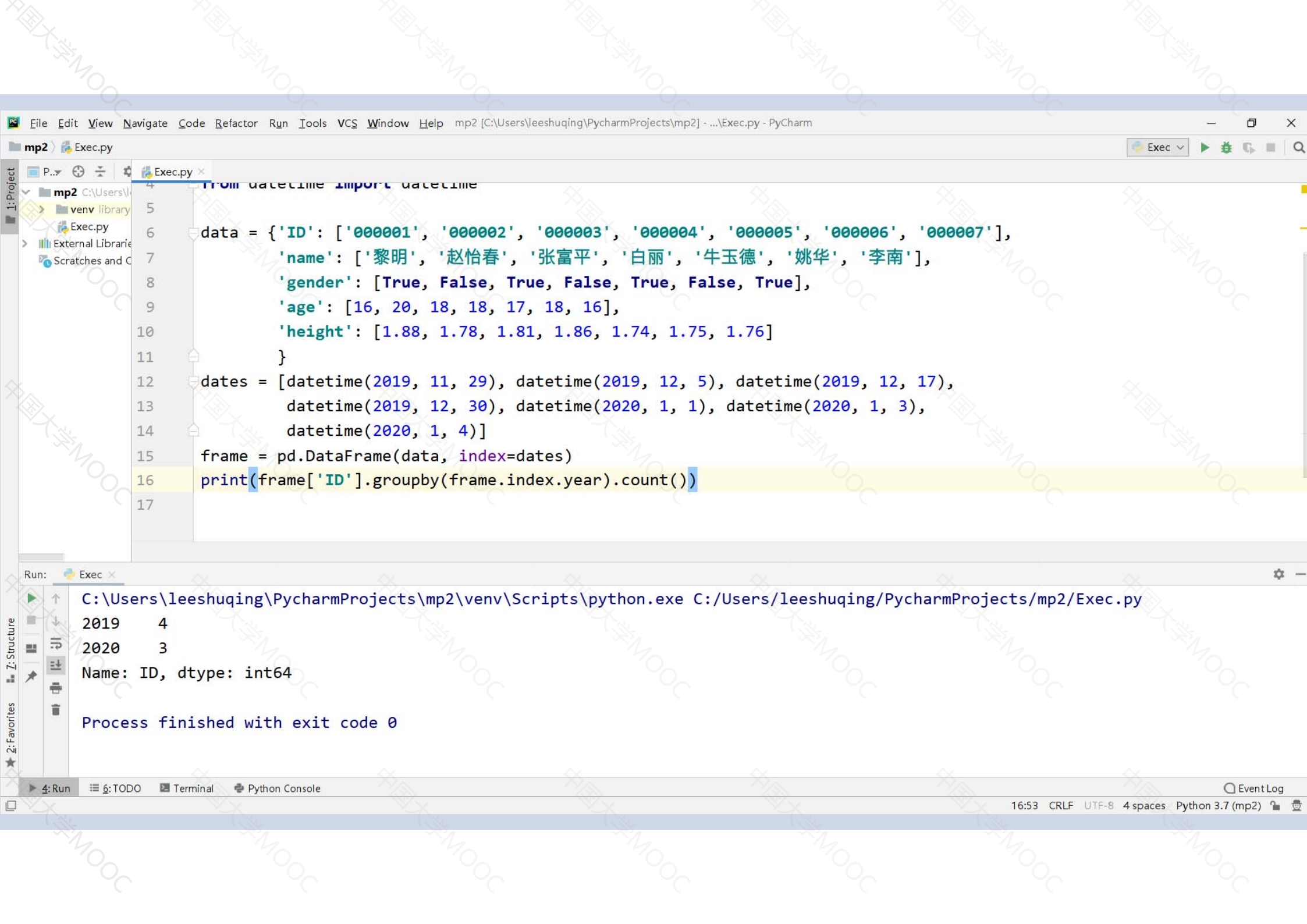












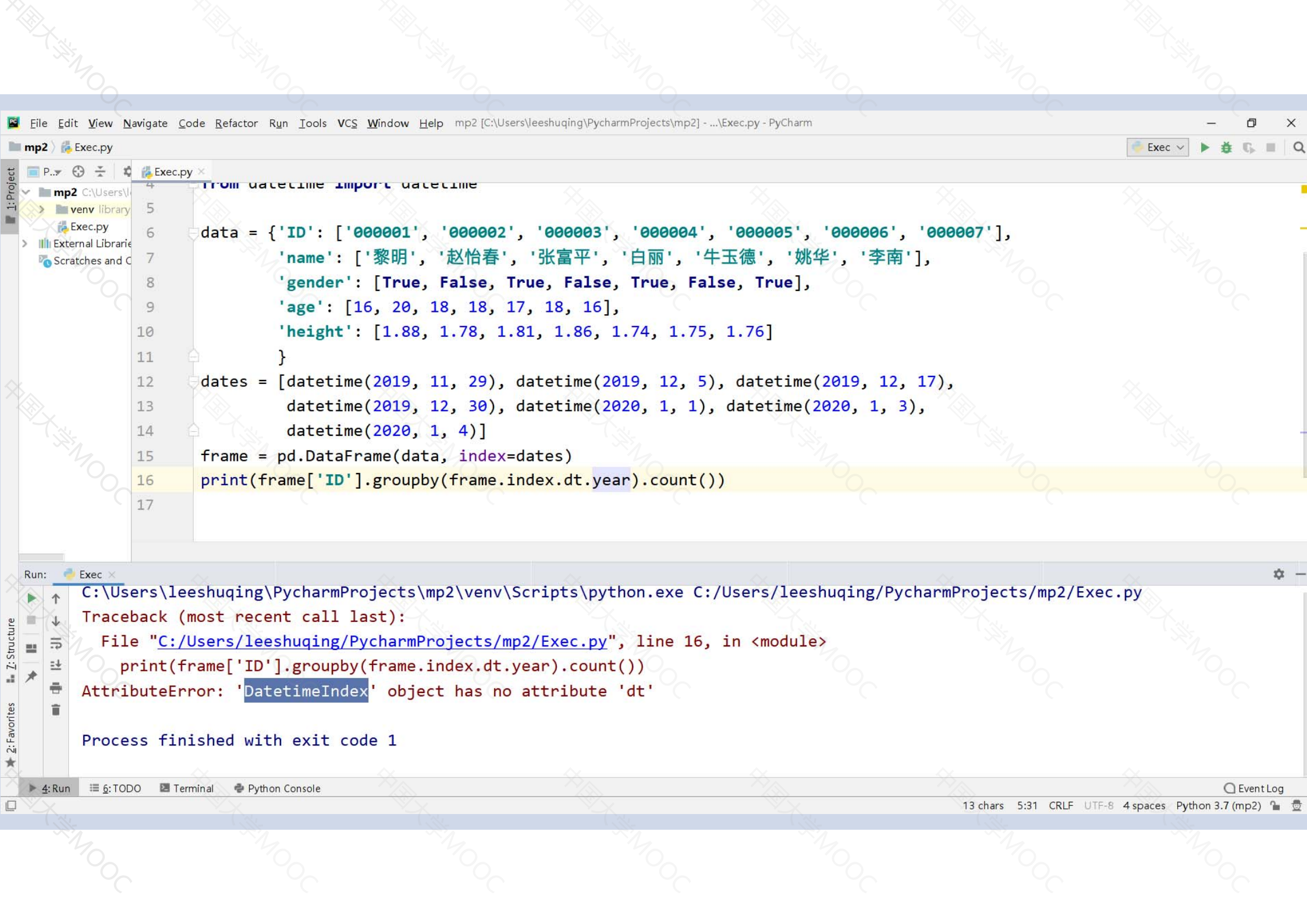
```
4 from datetime import datetime
5
6 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
7         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
8         'gender': [True, False, True, False, True, False, True],
9         'age': [16, 20, 18, 18, 17, 18, 16],
10        'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
11
12 dates = [datetime(2019, 11, 29), datetime(2019, 12, 5), datetime(2019, 12, 17),
13         datetime(2019, 12, 30), datetime(2020, 1, 1), datetime(2020, 1, 3),
14         datetime(2020, 1, 4)]
15 frame = pd.DataFrame(data, index=dates)
16 print(frame['ID'].groupby(frame.index.year).count())
17
```

C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py

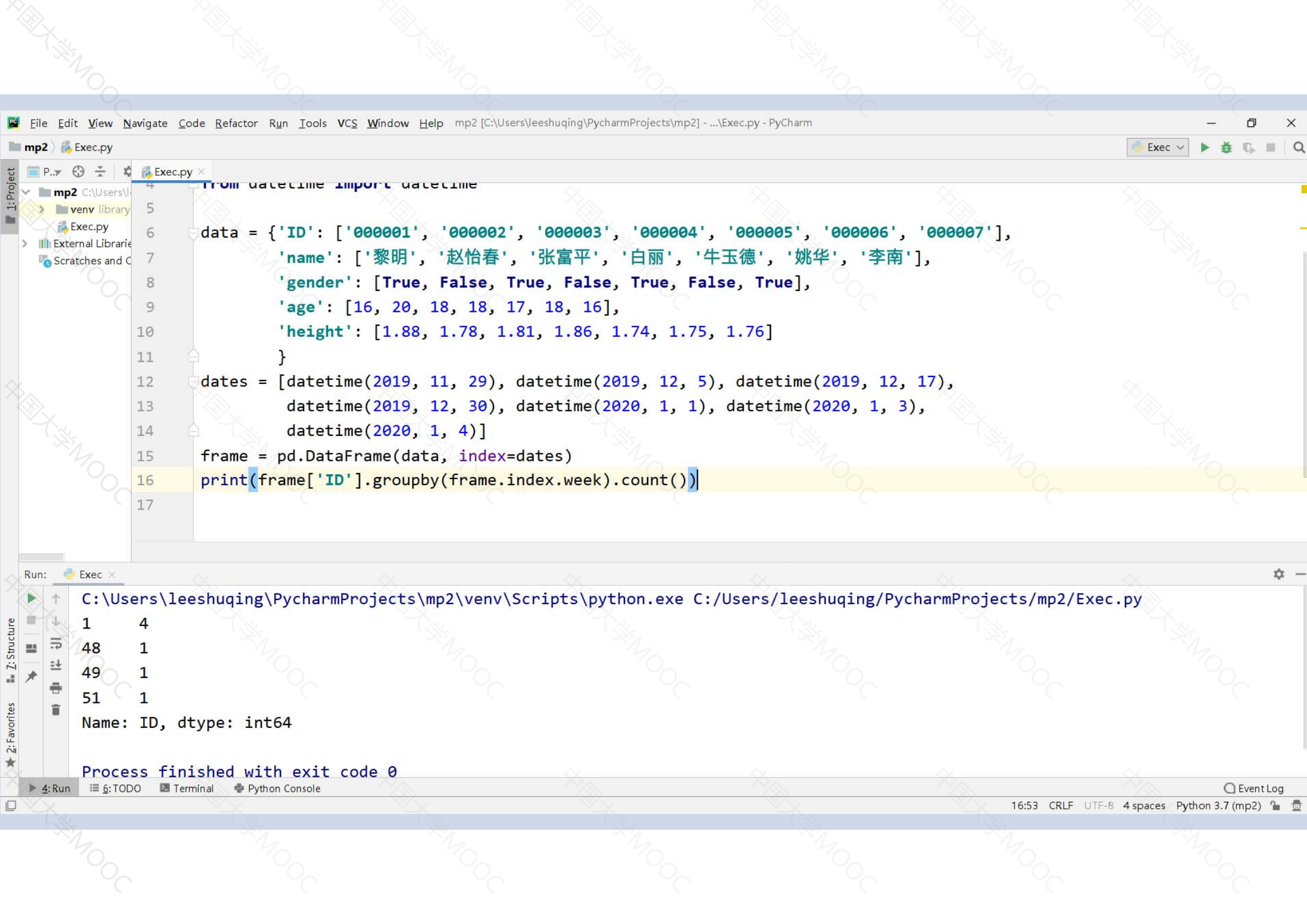
```
2019    4
2020    3
Name: ID, dtype: int64
```

Process finished with exit code 0









```
4 from datetime import datetime
5
6 data = {'ID': ['000001', '000002', '000003', '000004', '000005', '000006', '000007'],
7         'name': ['黎明', '赵怡春', '张富平', '白丽', '牛玉德', '姚华', '李南'],
8         'gender': [True, False, True, False, True, False, True],
9         'age': [16, 20, 18, 18, 17, 18, 16],
10        'height': [1.88, 1.78, 1.81, 1.86, 1.74, 1.75, 1.76]}
11
12 dates = [datetime(2019, 11, 29), datetime(2019, 12, 5), datetime(2019, 12, 17),
13         datetime(2019, 12, 30), datetime(2020, 1, 1), datetime(2020, 1, 3),
14         datetime(2020, 1, 4)]
15 frame = pd.DataFrame(data, index=dates)
16 print(frame['ID'].groupby(frame.index.week).count())
17
```

C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py

```
1      4
48     1
49     1
51     1
Name: ID, dtype: int64
```

Process finished with exit code 0

**一次不学多，下次再学**