Python大数据分析

五、立体图绘制

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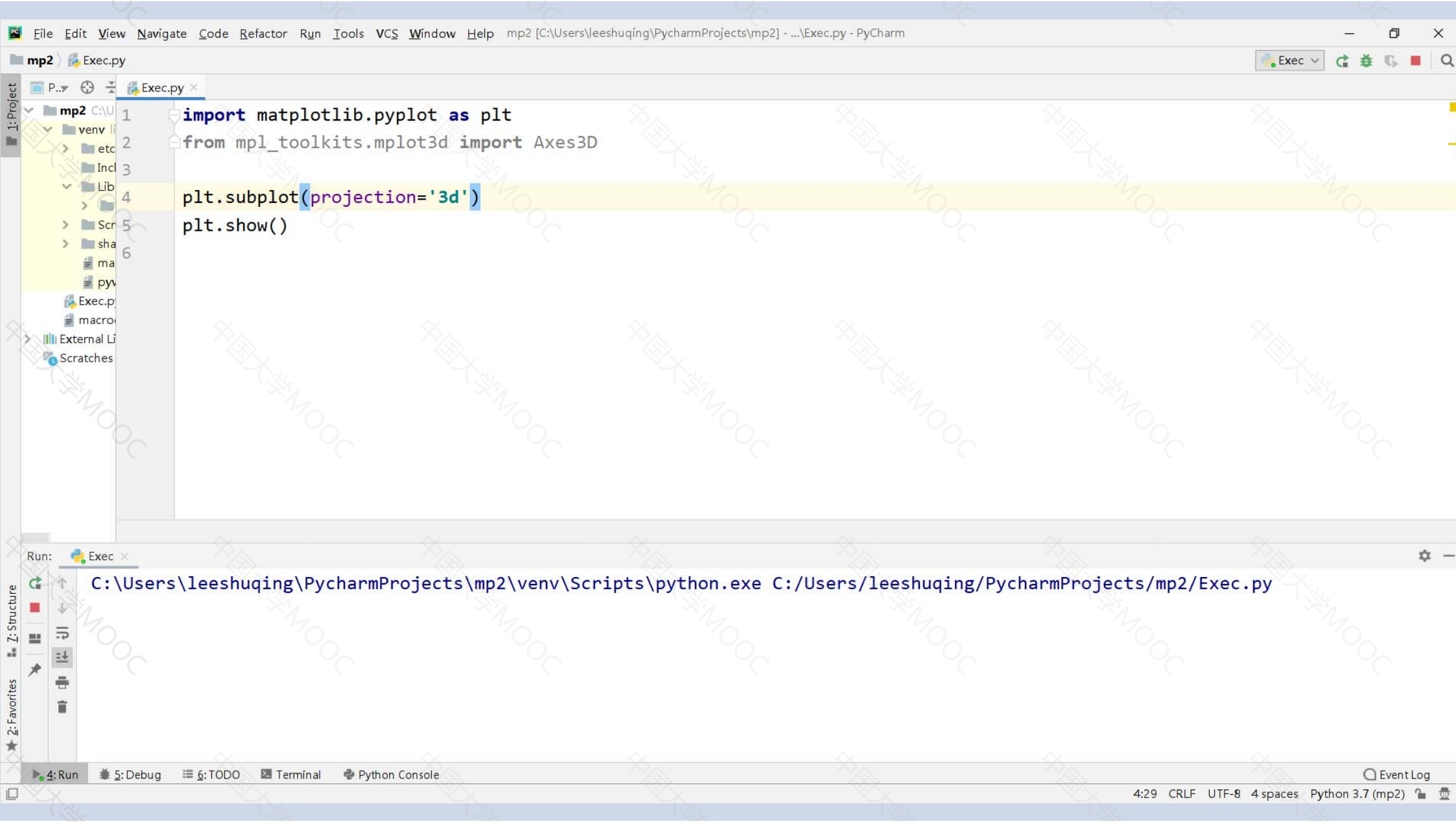

File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
Exec
Exec.py
1 import matplotlib.pyplot as plt
2 from mpl_toolkits.mplot3d import Axes3D
3
4 plt.subplot(projection='3d')
5 plt.show()
6
Run: Exec
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
4: Run
5: Debug
6: TODO
Terminal
Python Console
Event Log
4:29 CRLF UTF-8 4 spaces Python 3.7 (mp2)

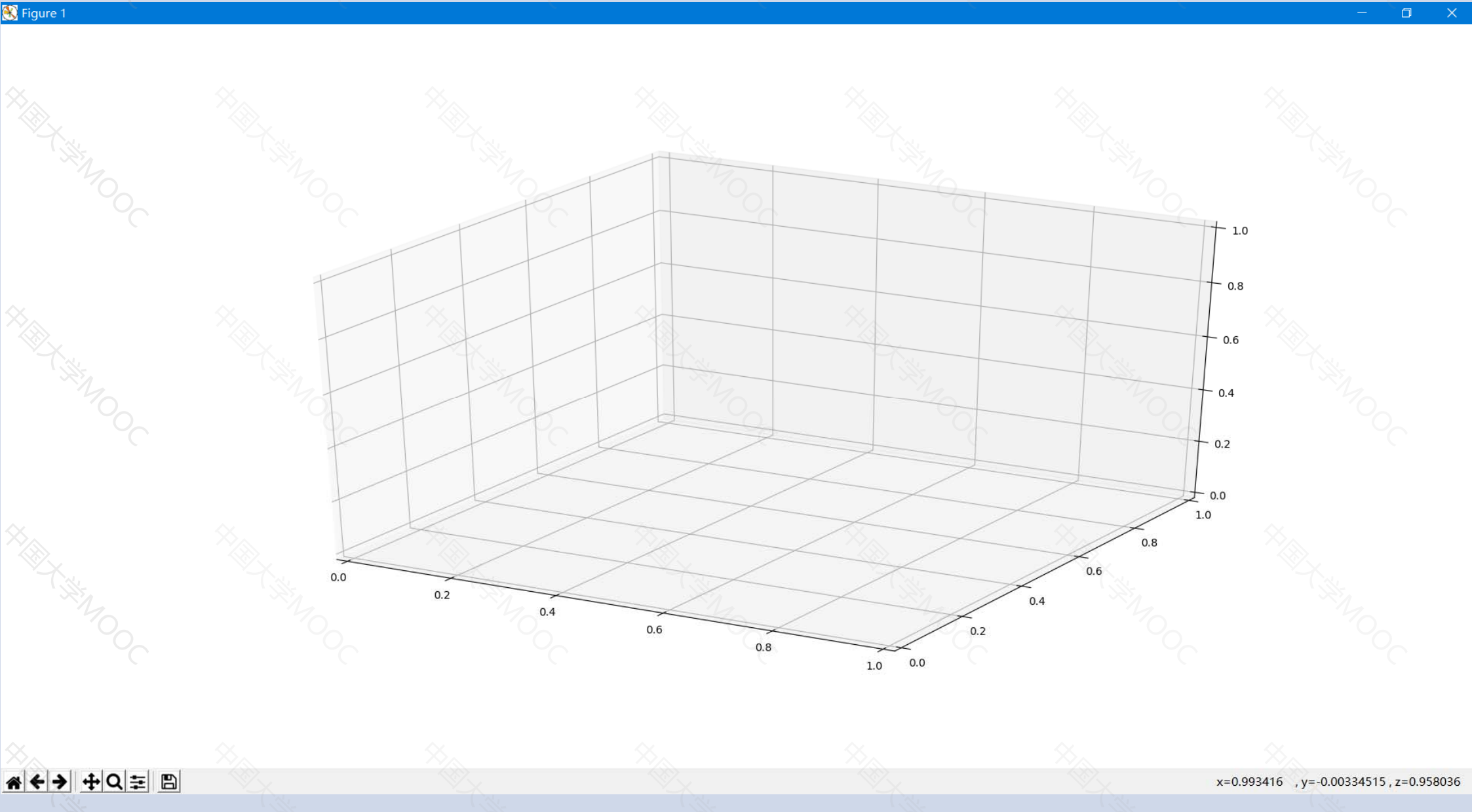


Figure 1
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.2
0.4
0.6
0.8
1.0
x=0.993416 , y=-0.00334515 , z=0.958036

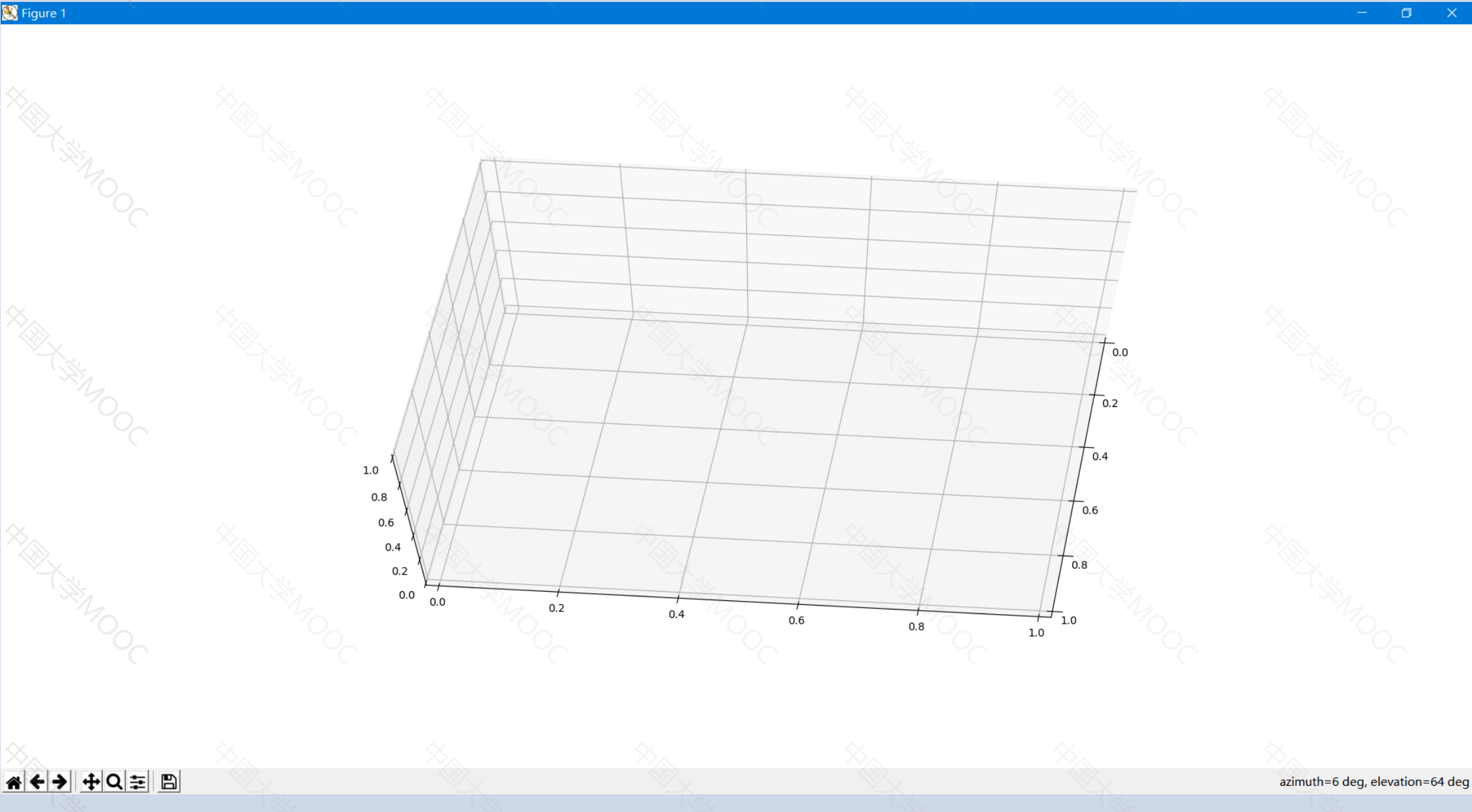
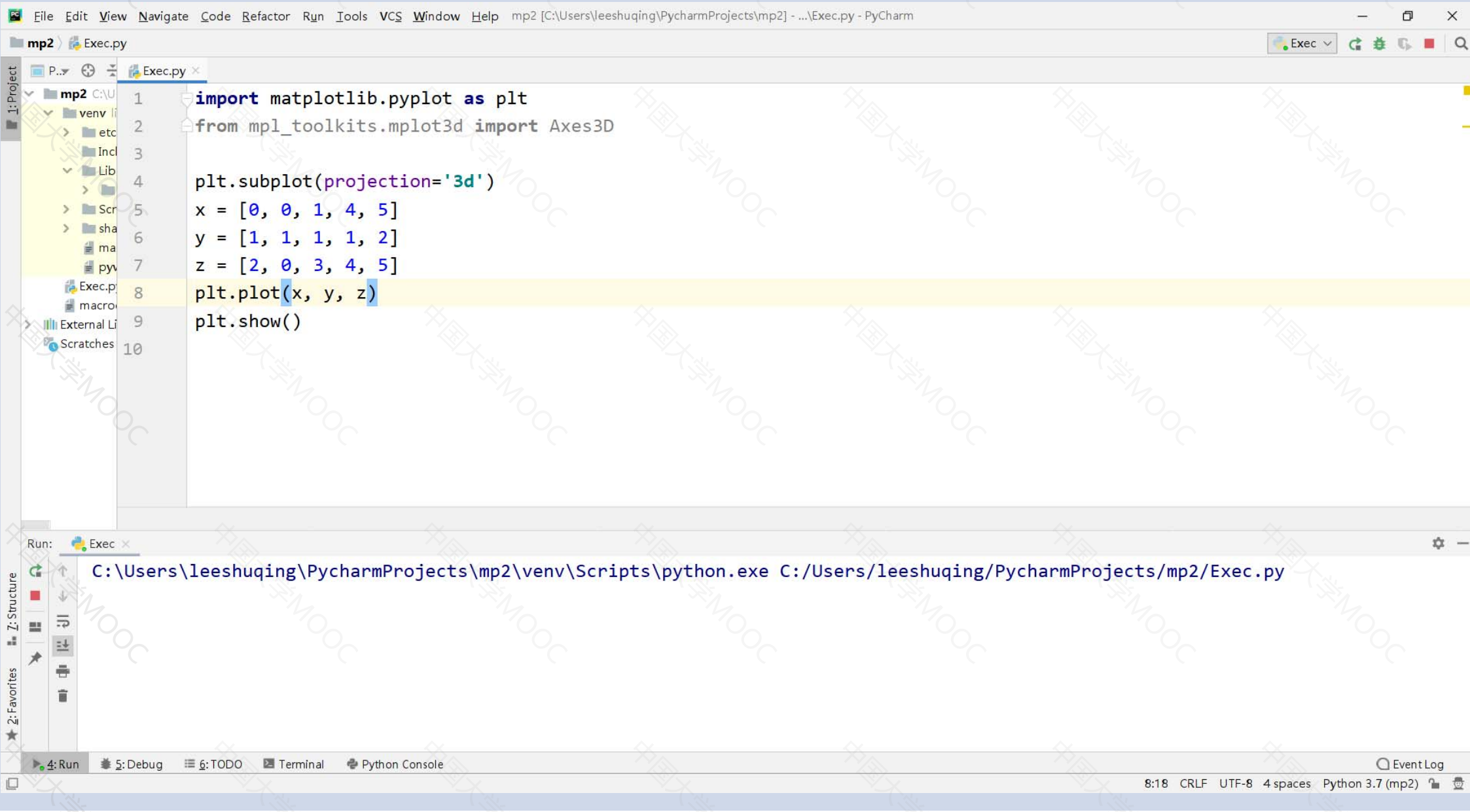


Figure 1
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.2
0.4
0.6
0.8
1.0
azimuth=6 deg, elevation=64 deg



File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm

mp2 Exec.py

```python
import matplotlib.pyplot as plt
from mpl_toolkits.mplot3d import Axes3D

plt.subplot(projection='3d')
x = [0, 0, 1, 4, 5]
y = [1, 1, 1, 1, 2]
z = [2, 0, 3, 4, 5]
plt.plot(x, y, z)
plt.show()
```

Run: Exec

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

4: Run 5: Debug 6: TODO Terminal Python Console Event Log

8:18 CRLF UTF-8 4 spaces Python 3.7 (mp2)

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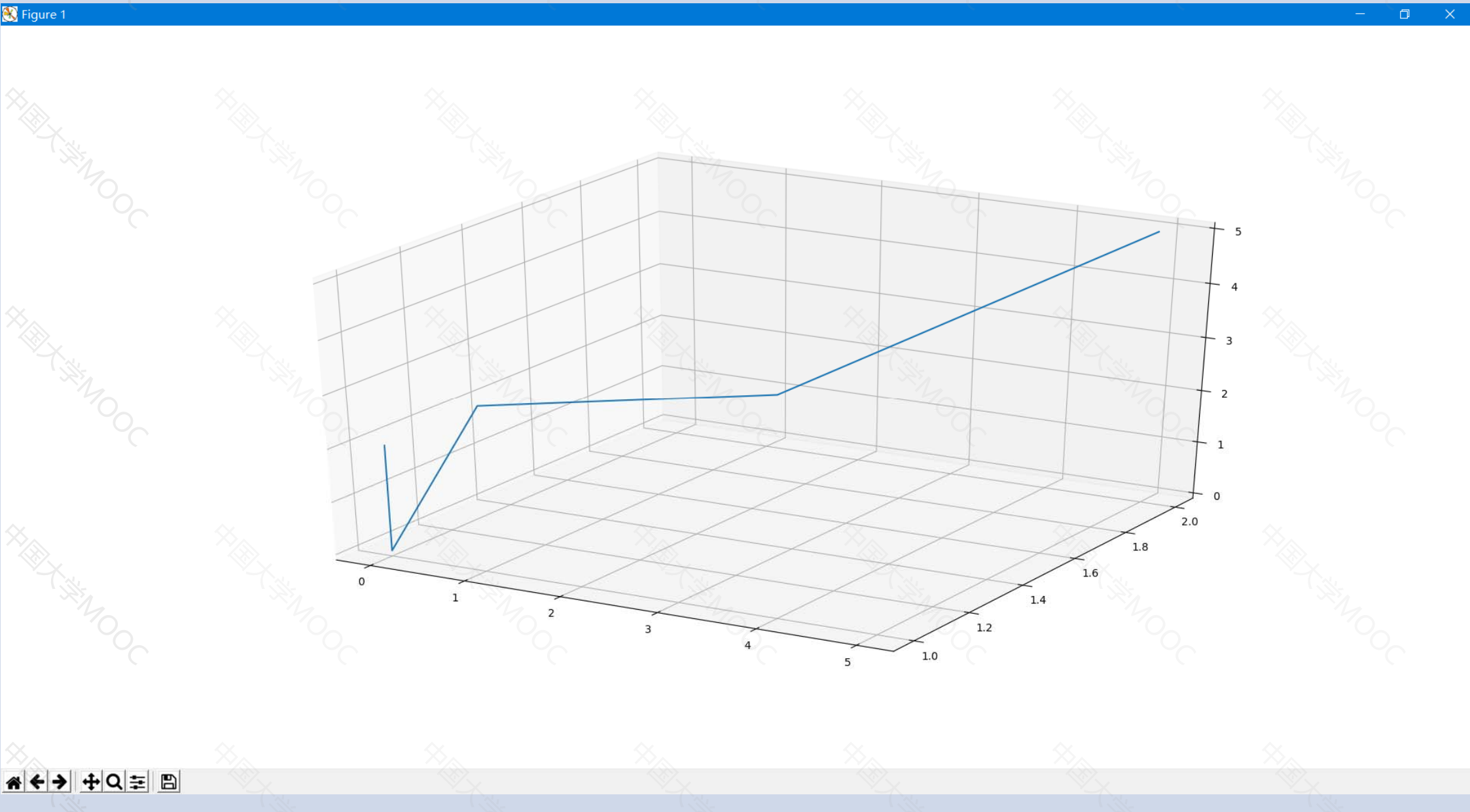
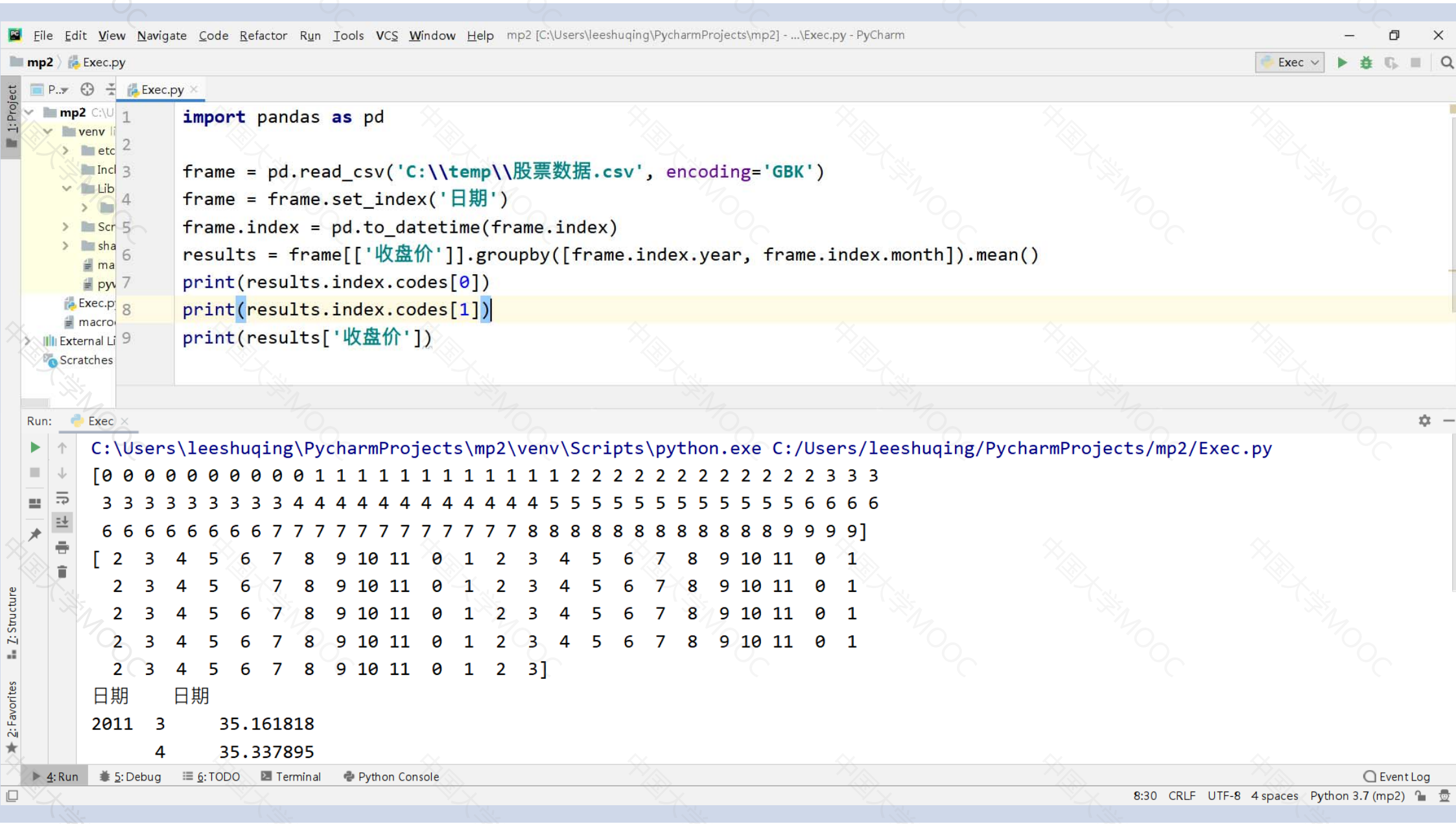
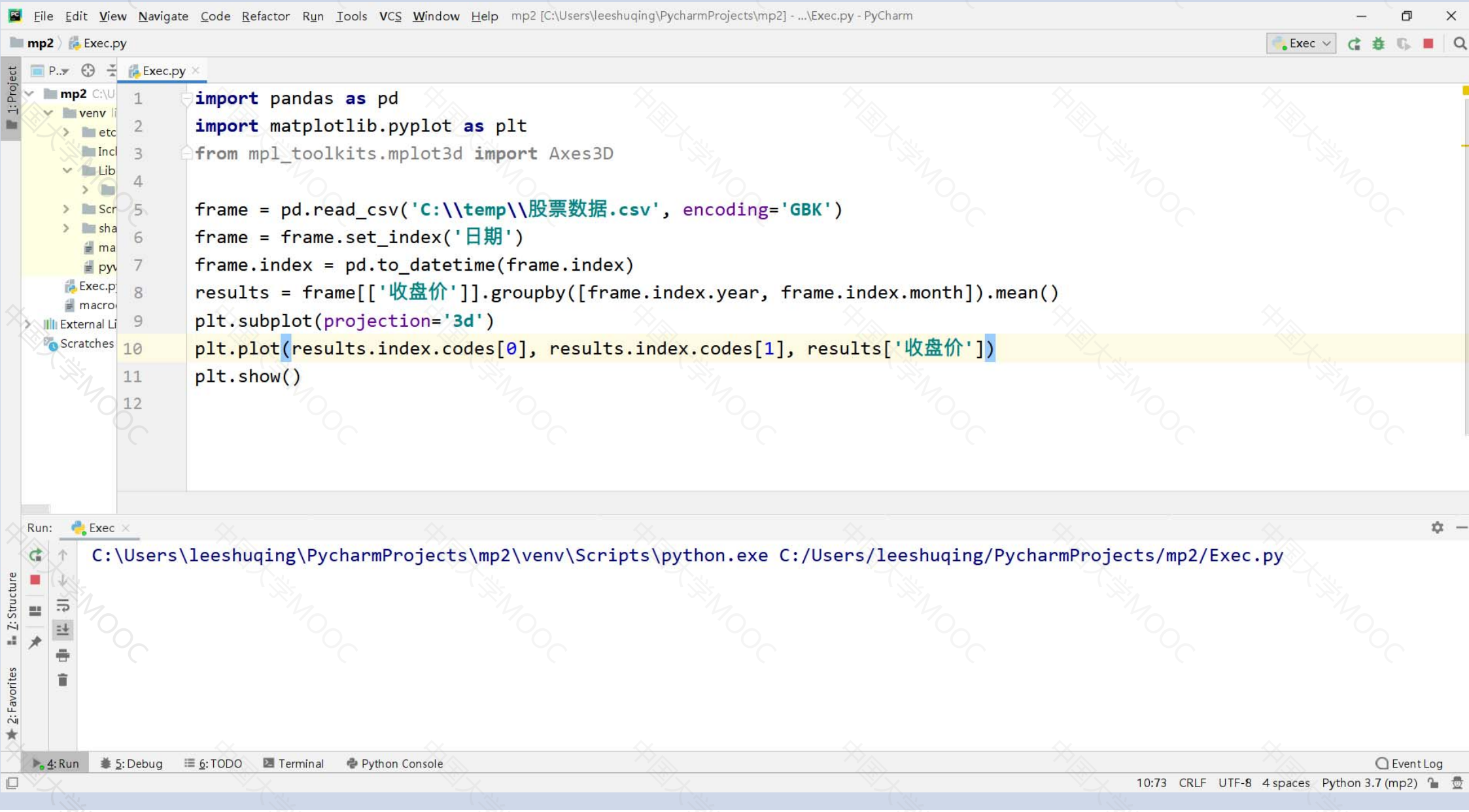


Figure 1
0
1
2
3
4
5
1.0
1.2
1.4
1.6
1.8
2.0
0
1
2
3
4
5


File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
Exec
Exec.py
1 import pandas as pd
2
3 frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
4 frame = frame.set_index('日期')
5 frame.index = pd.to_datetime(frame.index)
6 results = frame[['收盘价']].groupby([frame.index.year, frame.index.month]).mean()
7 print(results.index.codes[0])
8 print(results.index.codes[1])
9 print(results['收盘价'])
Run: Exec
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
[0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 3 3 3
3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6
6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 9 9 9 9]
[2 3 4 5 6 7 8 9 10 11 0 1 2 3 4 5 6 7 8 9 10 11 0 1
2 3 4 5 6 7 8 9 10 11 0 1 2 3 4 5 6 7 8 9 10 11 0 1
2 3 4 5 6 7 8 9 10 11 0 1 2 3 4 5 6 7 8 9 10 11 0 1
2 3 4 5 6 7 8 9 10 11 0 1 2 3 4 5 6 7 8 9 10 11 0 1
2 3 4 5 6 7 8 9 10 11 0 1 2 3]
日期 日期
2011 3 35.161818
4 35.337895
4: Run 5: Debug 6: TODO Terminal Python Console Event Log
8:30 CRLF UTF-8 4 spaces Python 3.7 (mp2)


File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
Exec
Exec.py
1: Project
mp2
venv
External Li
Scratches
1 import pandas as pd
2 import matplotlib.pyplot as plt
3 from mpl_toolkits.mplot3d import Axes3D
4
5 frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
6 frame = frame.set_index('日期')
7 frame.index = pd.to_datetime(frame.index)
8 results = frame[['收盘价']].groupby([frame.index.year, frame.index.month]).mean()
9 plt.subplot(projection='3d')
10 plt.plot(results.index.codes[0], results.index.codes[1], results['收盘价'])
11 plt.show()
12
Run: Exec
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
7: Structure
2: Favorites
4: Run
5: Debug
6: TODO
Terminal
Python Console
Event Log
10:73 CRLF UTF-8 4 spaces Python 3.7 (mp2)

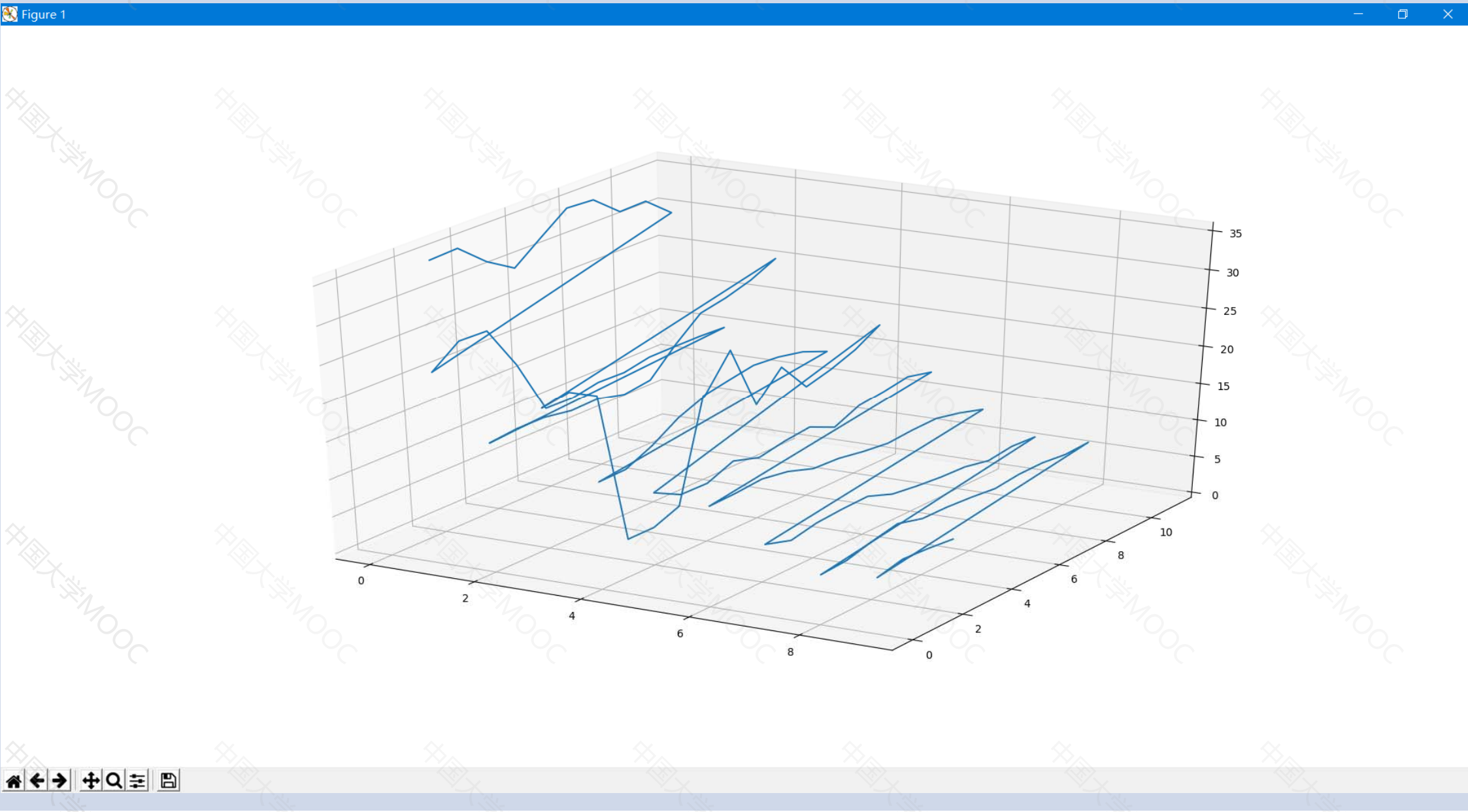


Figure 1
0
2
4
6
8
0
2
4
6
8
10
0
5
10
15
20
25
30
35

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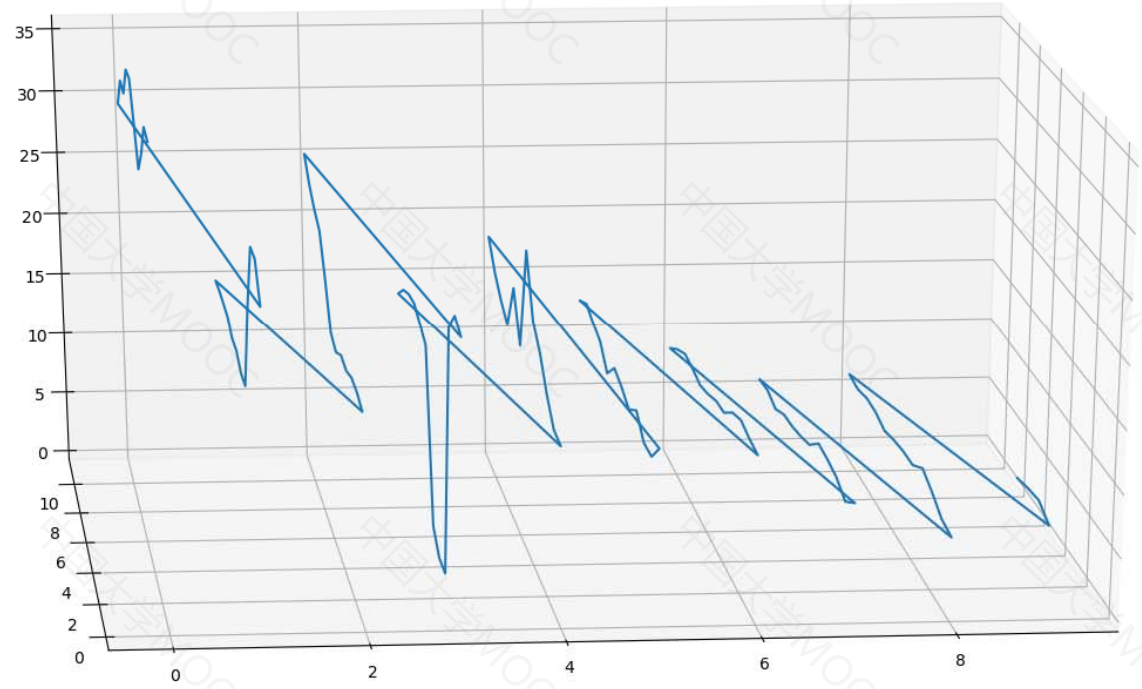
Figure 1



azimuth=-95 deg, elevation=19 deg

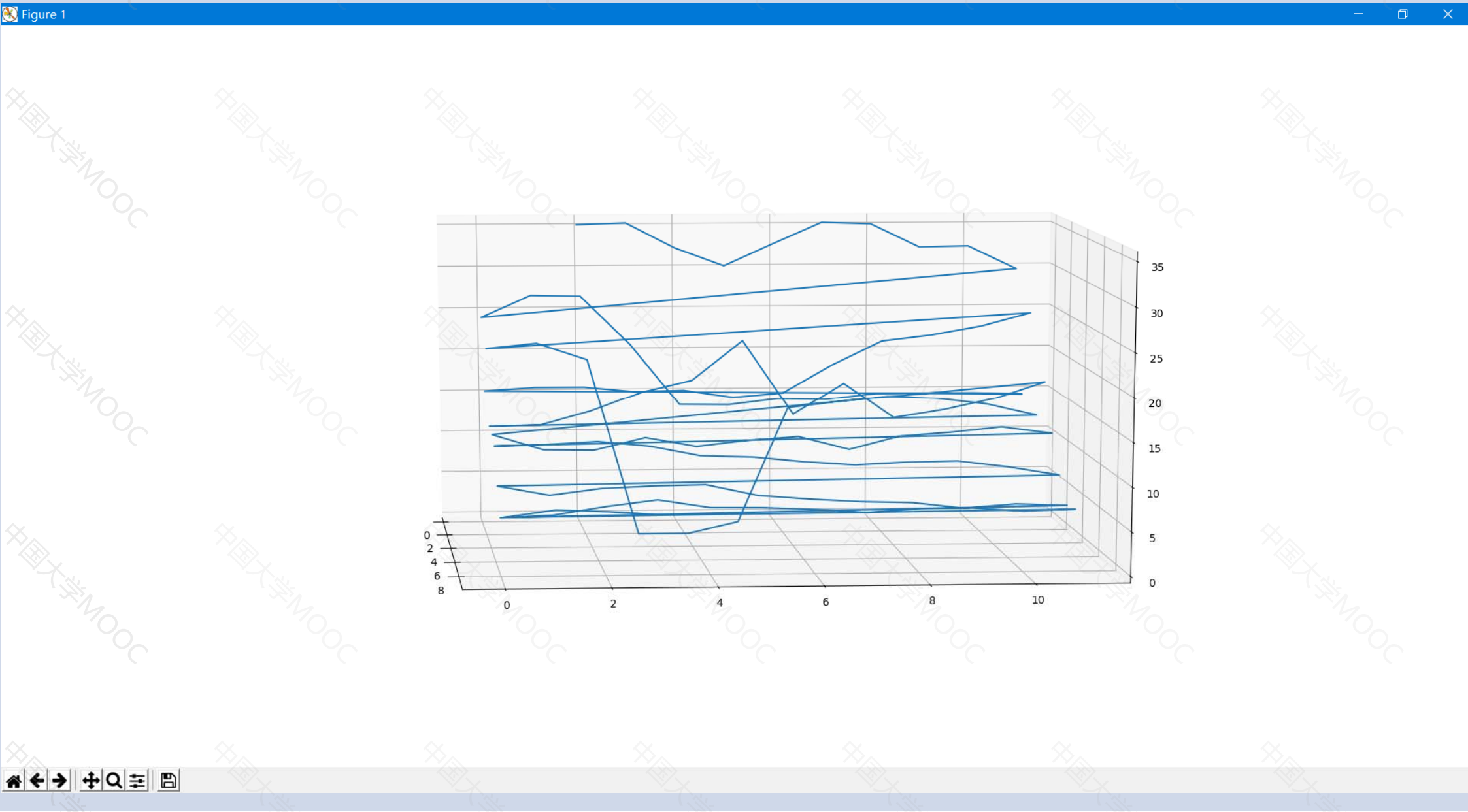


Figure 1
0
2
4
6
8
0
2
4
6
8
10
0
5
10
15
20
25
30
35

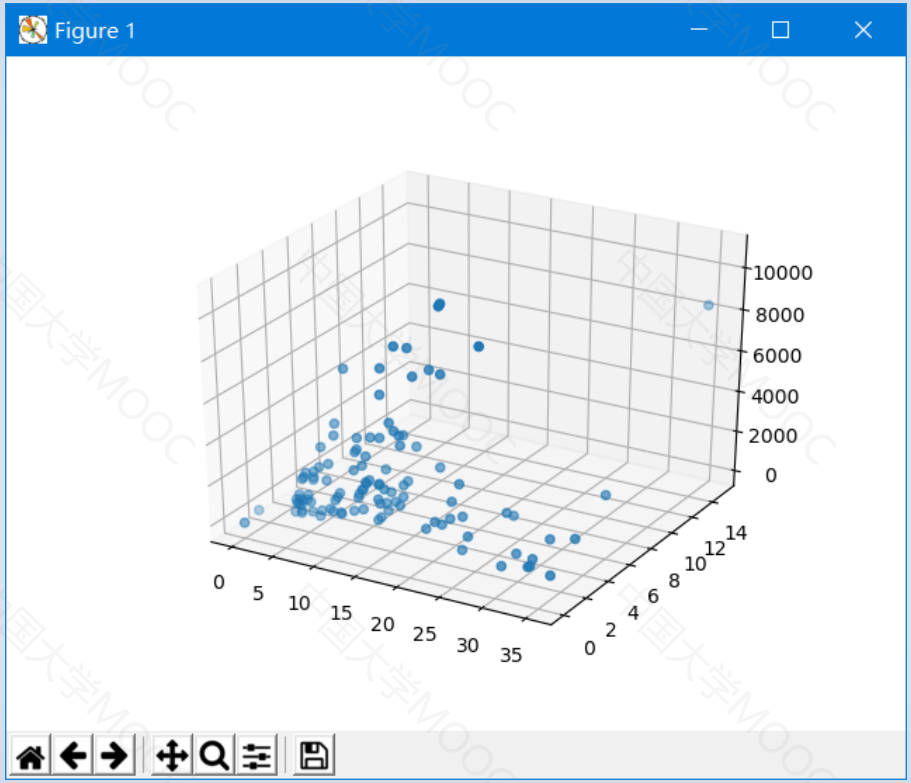


Figure 1
10000
8000
6000
4000
2000
0
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14

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File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm

mp2 > Exec.py

Exec.py

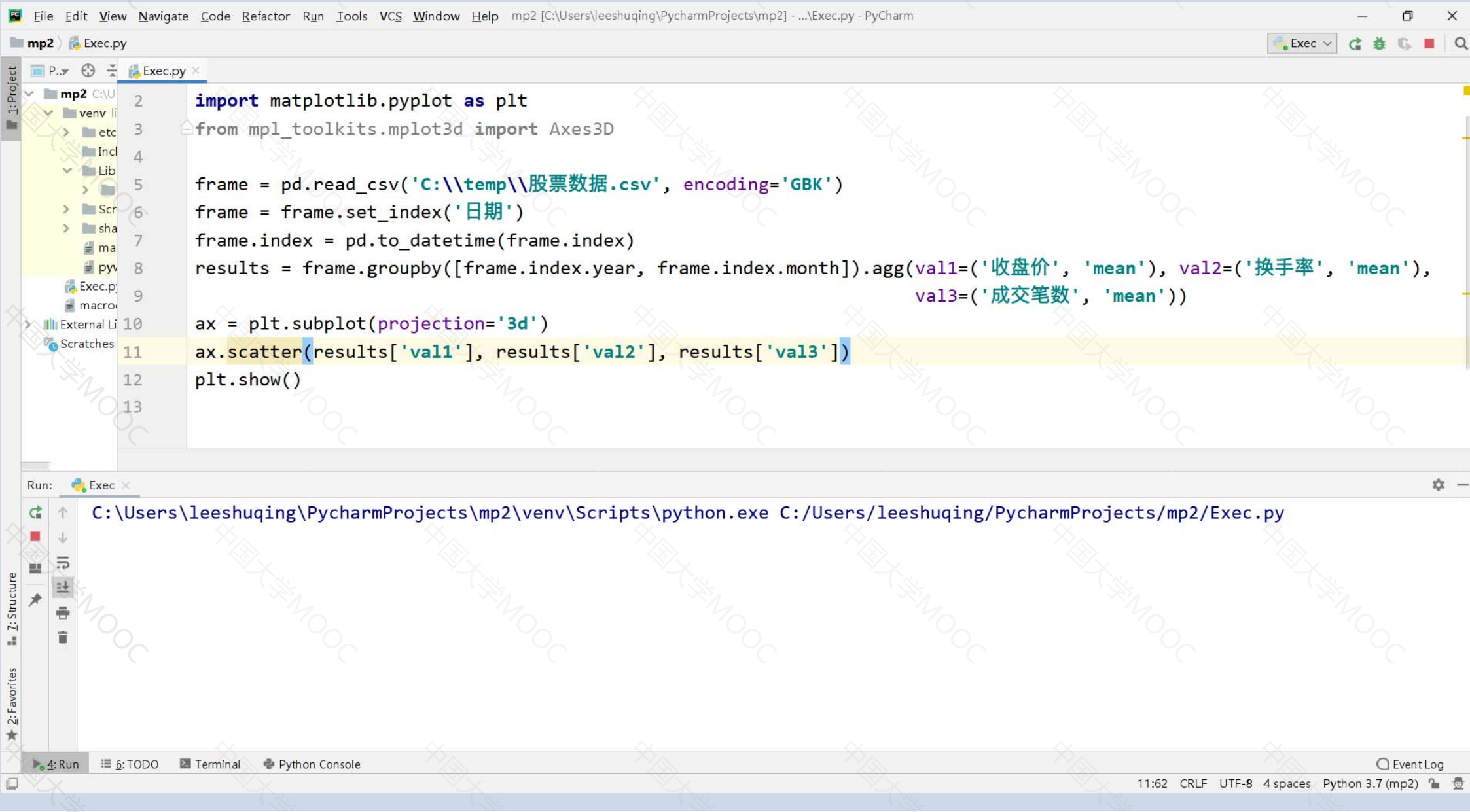
```
2  import matplotlib.pyplot as plt
3  from mpl_toolkits.mplot3d import Axes3D
4
5  frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
6  frame = frame.set_index('日期')
7  frame.index = pd.to_datetime(frame.index)
8  results = frame.groupby([frame.index.year, frame.index.month]).agg(val1=('收盘价', 'mean'), val2=('换手率', 'mean'),
9                                                                      val3=('成交笔数', 'mean'))
10 print(results)
11
```

Run: Exec

```
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
                 val1       val2         val3
日期   日期
2011 3    35.161818  15.065836  8353.090909
     4    35.337895   2.945121  1491.473684
     5    32.338095   1.495710   786.619048
     6    30.185714   1.708790   751.523810
     7    32.785238   2.687271  1319.285714
...             ...        ...          ...
```

4: Run 6: TODO Terminal Python Console Event Log

9:90 CRLF UTF-8 4 spaces Python 3.7 (mp2)



File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm

mp2 Exec.py

```python
import matplotlib.pyplot as plt
from mpl_toolkits.mplot3d import Axes3D

frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
frame = frame.set_index('日期')
frame.index = pd.to_datetime(frame.index)
results = frame.groupby([frame.index.year, frame.index.month]).agg(val1=('收盘价', 'mean'), val2=('换手率', 'mean'),
                                                                    val3=('成交笔数', 'mean'))
ax = plt.subplot(projection='3d')
ax.scatter(results['val1'], results['val2'], results['val3'])
plt.show()
```

Run: Exec

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

4: Run 6: TODO Terminal Python Console Event Log

11:62 CRLF UTF-8 4 spaces Python 3.7 (mp2)

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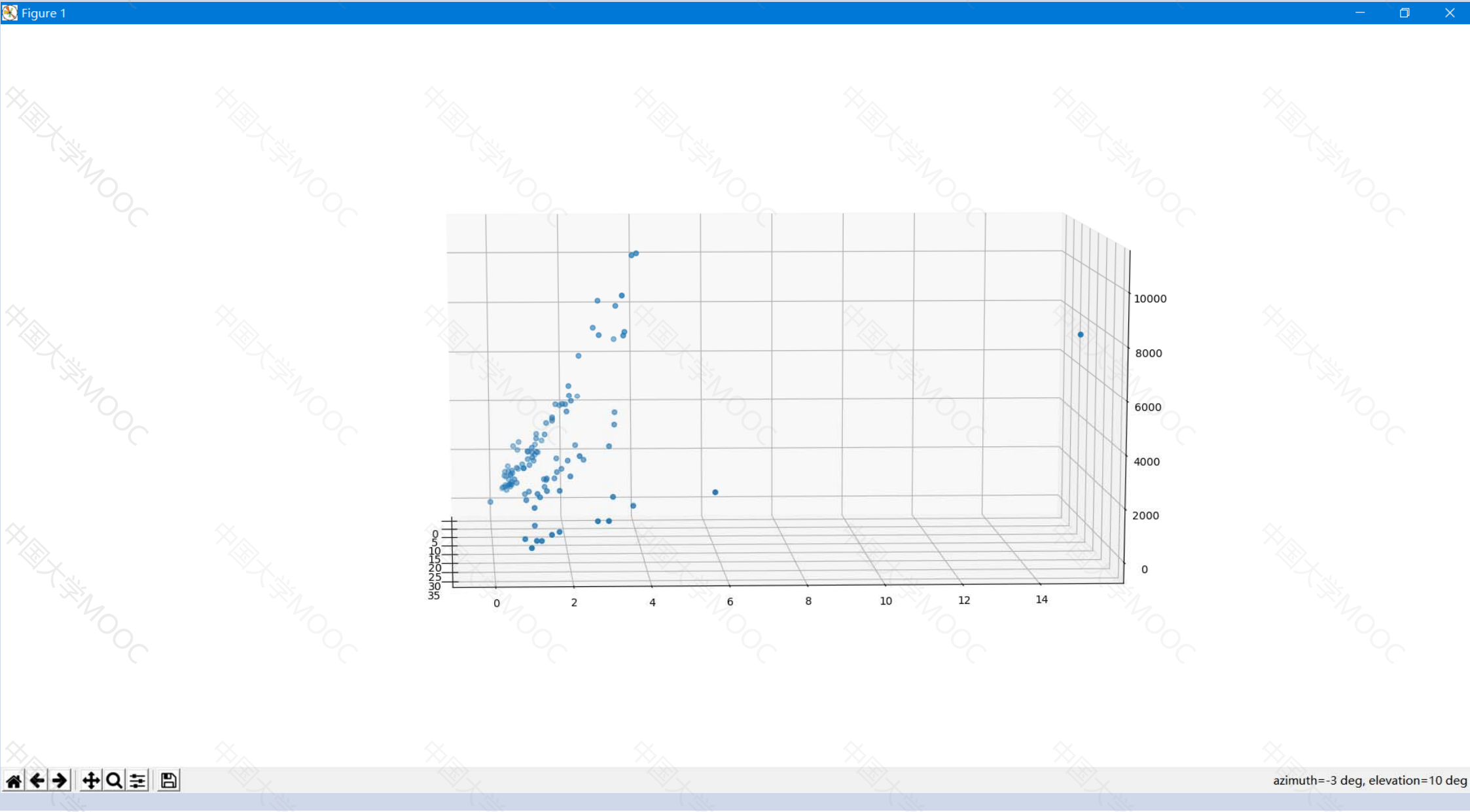


Figure 1
10000
8000
6000
4000
2000
0
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
azimuth=-3 deg, elevation=10 deg

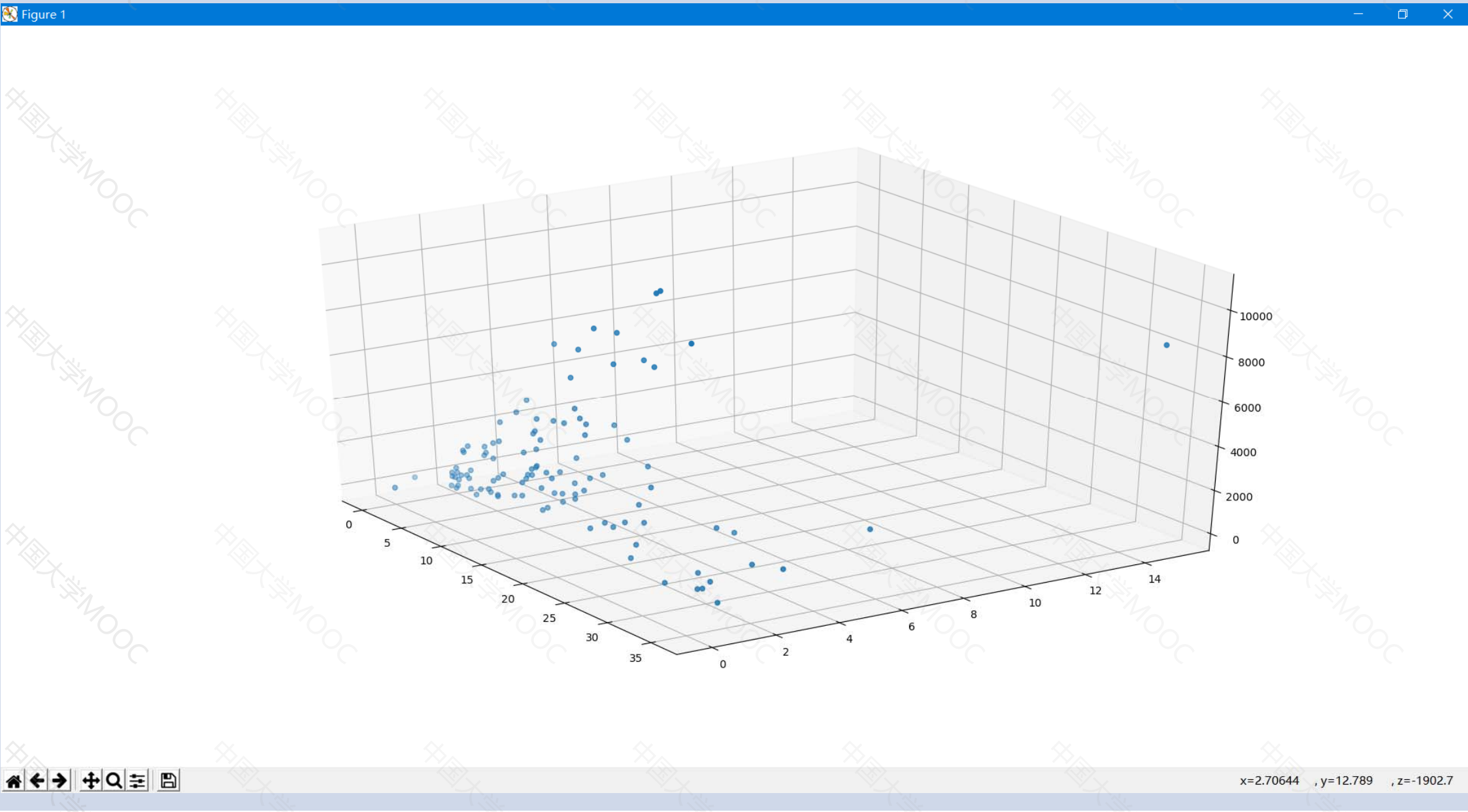
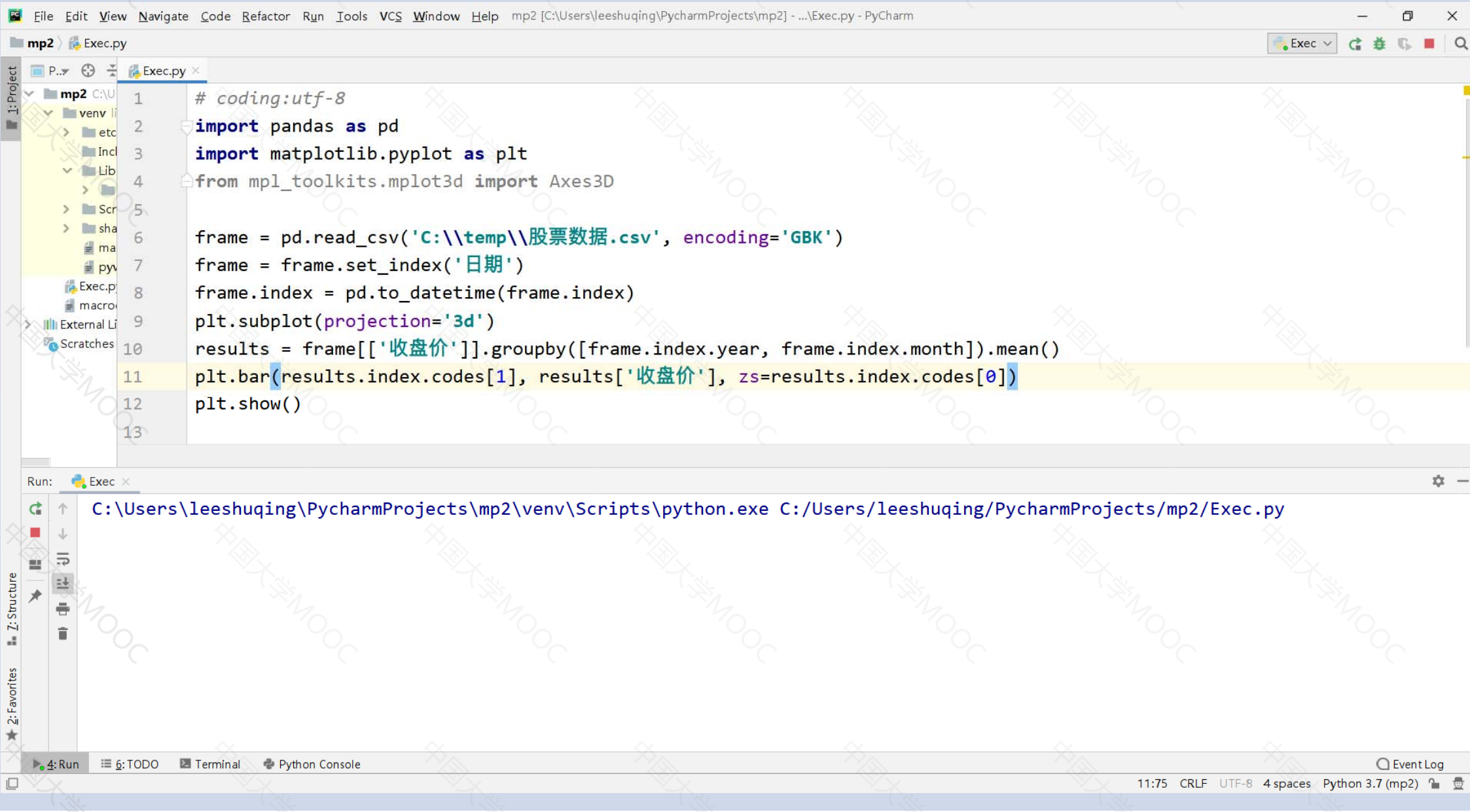


Figure 1
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
0
2000
4000
6000
8000
10000
x=2.70644 , y=12.789 , z=-1902.7


File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
Exec
Exec.py
1 # coding:utf-8
2 import pandas as pd
3 import matplotlib.pyplot as plt
4 from mpl_toolkits.mplot3d import Axes3D
5
6 frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
7 frame = frame.set_index('日期')
8 frame.index = pd.to_datetime(frame.index)
9 plt.subplot(projection='3d')
10 results = frame[['收盘价']].groupby([frame.index.year, frame.index.month]).mean()
11 plt.bar(results.index.codes[1], results['收盘价'], zs=results.index.codes[0])
12 plt.show()
13
Run: Exec
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
4: Run
6: TODO
Terminal
Python Console
Event Log
11:75 CRLF UTF-8 4 spaces Python 3.7 (mp2)

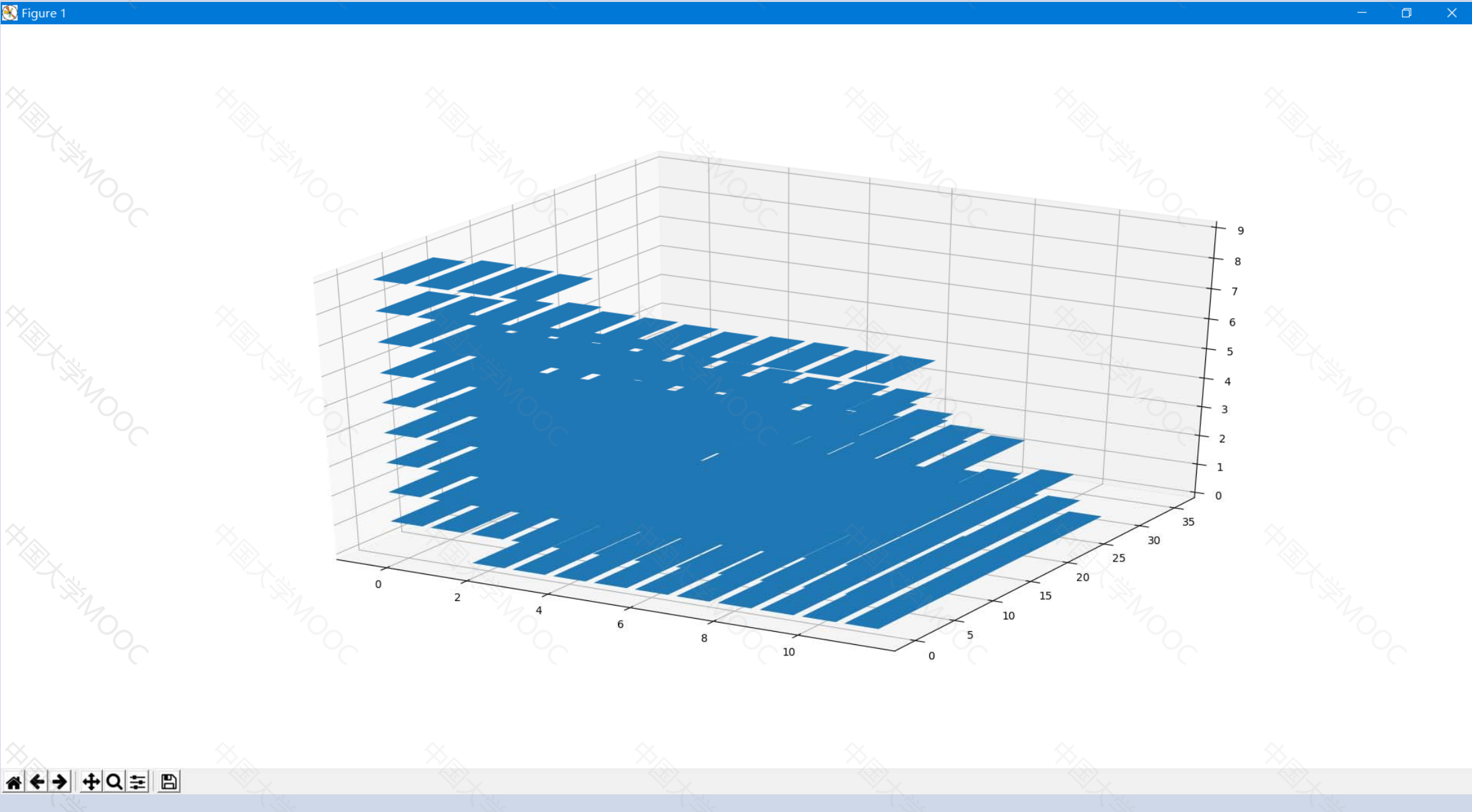


Figure 1
0
2
4
6
8
10
0
5
10
15
20
25
30
35
0
1
2
3
4
5
6
7
8
9

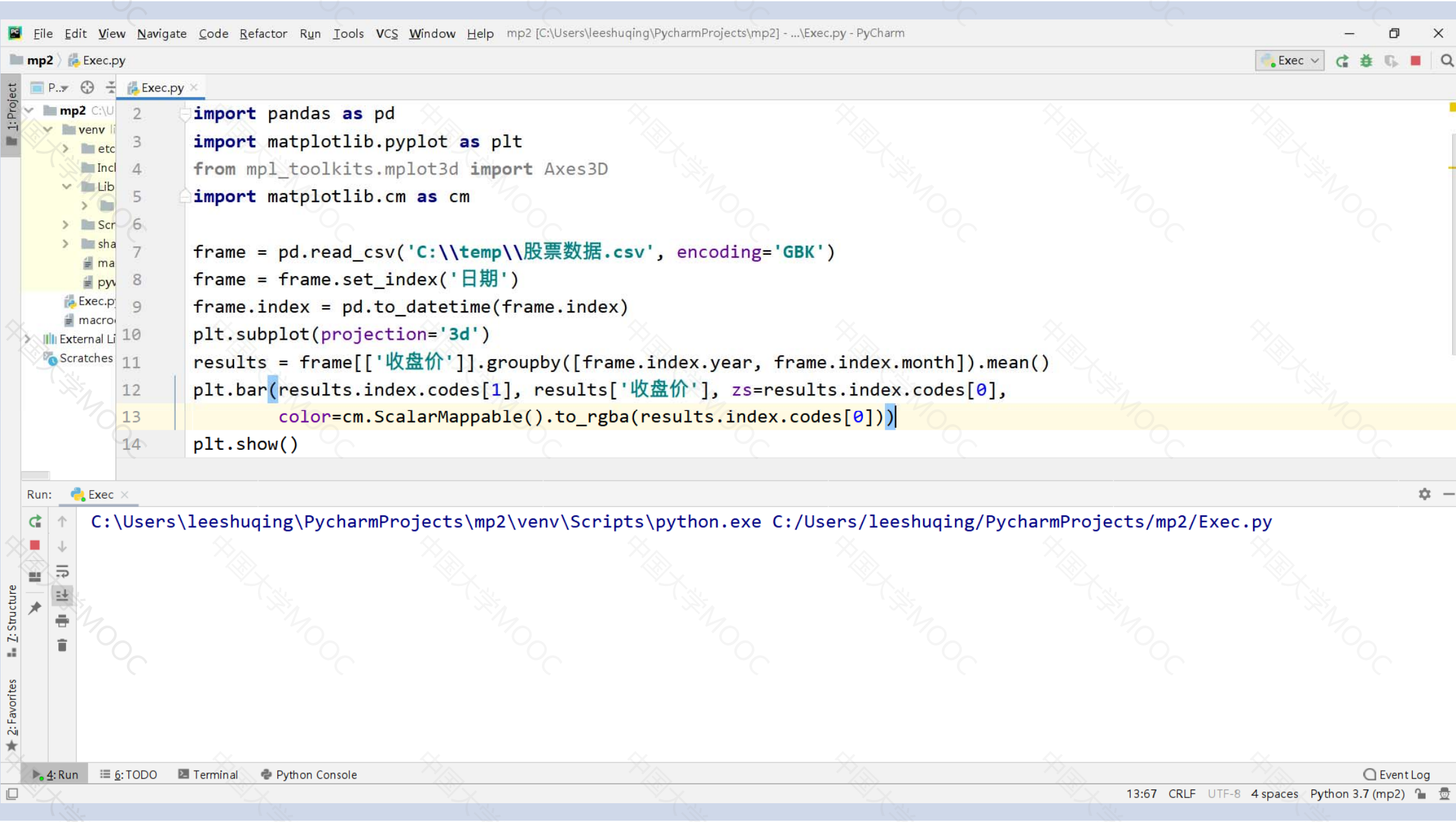

File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
Exec
Exec.py
mp2
venv
External Li
Scratches
2 import pandas as pd
3 import matplotlib.pyplot as plt
4 from mpl_toolkits.mplot3d import Axes3D
5 import matplotlib.cm as cm
6
7 frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
8 frame = frame.set_index('日期')
9 frame.index = pd.to_datetime(frame.index)
10 plt.subplot(projection='3d')
11 results = frame[['收盘价']].groupby([frame.index.year, frame.index.month]).mean()
12 plt.bar(results.index.codes[1], results['收盘价'], zs=results.index.codes[0],
13 color=cm.ScalarMappable().to_rgba(results.index.codes[0]))
14 plt.show()
Run: Exec
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
4: Run
6: TODO
Terminal
Python Console
Event Log
13:67 CRLF UTF-8 4 spaces Python 3.7 (mp2)

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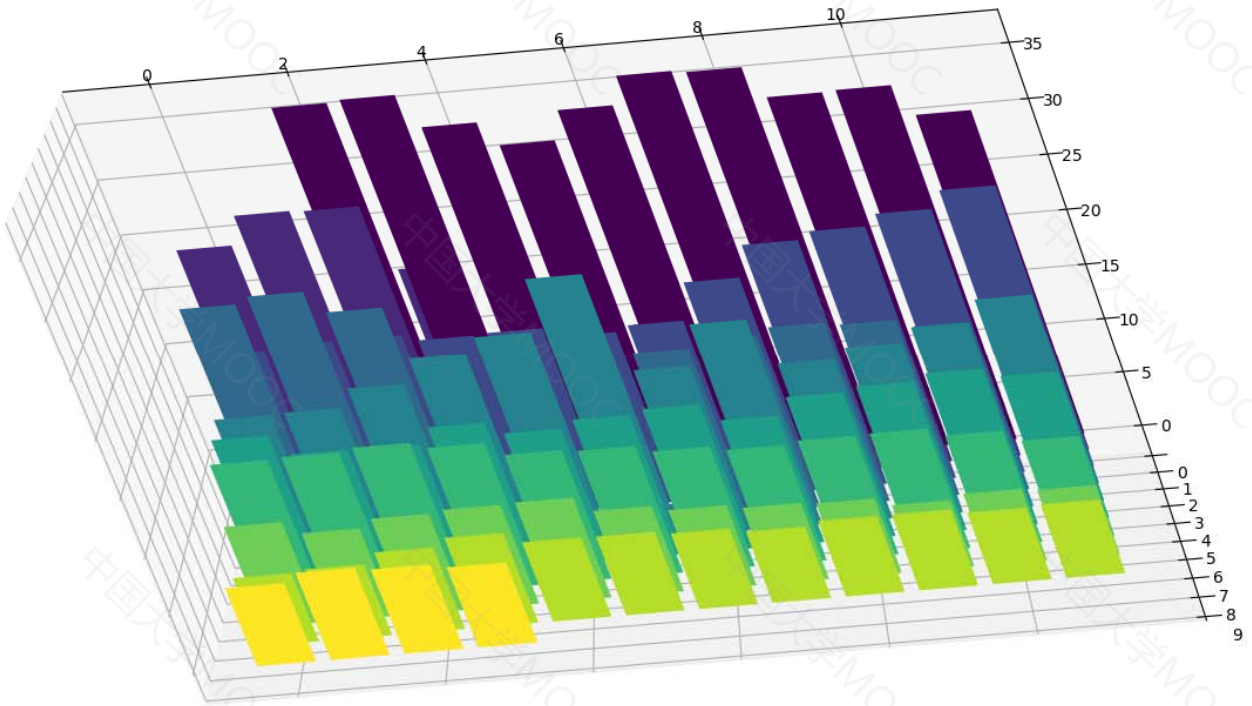
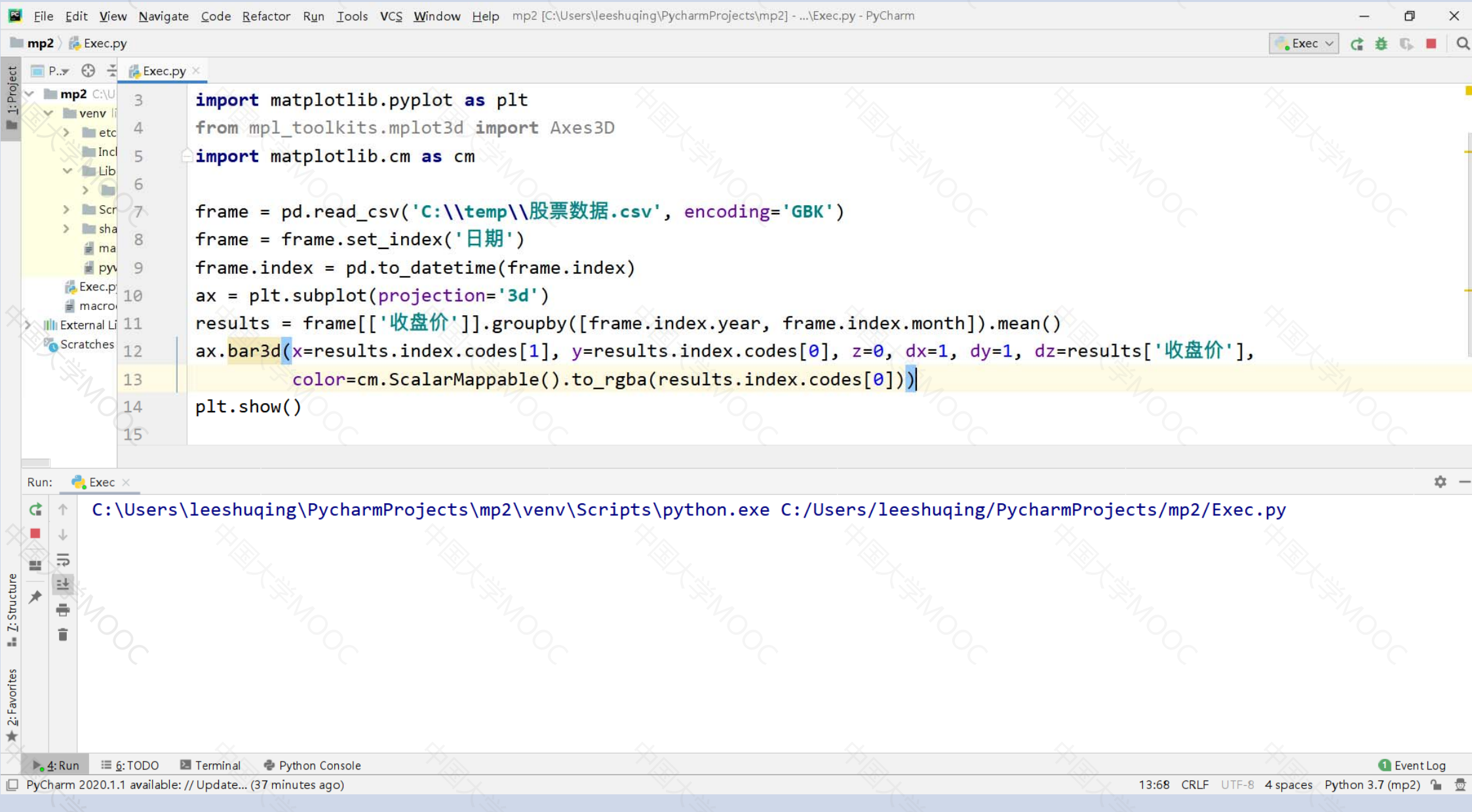
Figure 1



x=8.23017 , y=-7.35882 , z=9.39975


File Edit View Navigate Code Refactor Run Tools VCS Window Help mp2 [C:\Users\leeshuqing\PycharmProjects\mp2] - ...\Exec.py - PyCharm
mp2 Exec.py
Exec
Exec.py
import matplotlib.pyplot as plt
from mpl_toolkits.mplot3d import Axes3D
import matplotlib.cm as cm
frame = pd.read_csv('C:\\temp\\股票数据.csv', encoding='GBK')
frame = frame.set_index('日期')
frame.index = pd.to_datetime(frame.index)
ax = plt.subplot(projection='3d')
results = frame[['收盘价']].groupby([frame.index.year, frame.index.month]).mean()
ax.bar3d(x=results.index.codes[1], y=results.index.codes[0], z=0, dx=1, dy=1, dz=results['收盘价'],
color=cm.ScalarMappable().to_rgba(results.index.codes[0]))
plt.show()
Run: Exec
C:\Users\leeshuqing\PycharmProjects\mp2\venv\Scripts\python.exe C:/Users/leeshuqing/PycharmProjects/mp2/Exec.py
4: Run
6: TODO
Terminal
Python Console
Event Log
PyCharm 2020.1.1 available: // Update... (37 minutes ago)
13:68 CRLF UTF-8 4 spaces Python 3.7 (mp2)

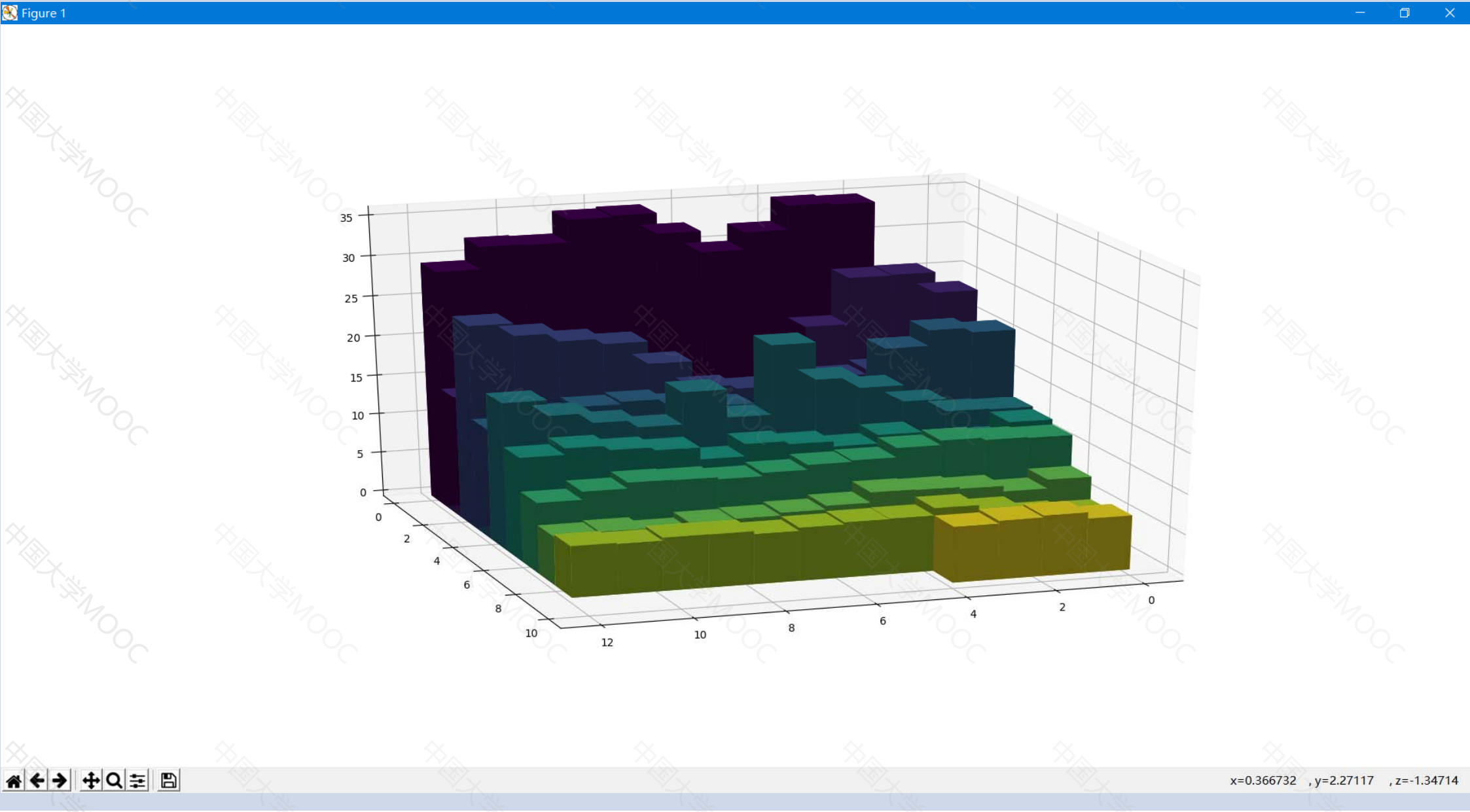


Figure 1
35
30
25
20
15
10
5
0
0
2
4
6
8
10
12
10
8
6
4
2
0
x=0.366732 , y=2.27117 , z=-1.34714

一次不学多，下次再学

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