flat-linear-... - JupyterLab

localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher | flat-linear-regression.ipynb

Code | Python 3 (ipykernel)

[1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn import linear_model
```

[2]:
```
df = pd.read_excel('price1.xlsx')
```

[3]:
```
df
```

[3]:

	area	price
0	28	3.1
1	42	3.8
2	45	3.9
3	52	4.4
4	56	4.5
5	68	5.9
6	70	5.6
7	75	6.4
8	90	7.3

[6]:
```
%matplotlib inline
plt.scatter(df.area,df.price, color='red',marker='^')
plt.xlabel('площадь (кв.м.)')
plt.ylabel('стоимость (млн.руб)')
```

[6]:
```
Text(0, 0.5, 'стоимость (млн.руб)')
```

Simple | 0 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 4, Col 33 | flat-linear-regression.ipynb

Введите здесь текст для поиска | 3°C Cloudy | ENG | 15:53 31.10.2022

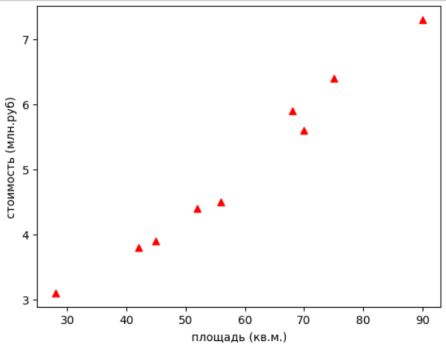
flat-linear-... - JupyterLab

localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher | flat-linear-regression.ipynb

Code | Python 3 (ipykernel)



[18]:
```
reg = linear_model.LinearRegression()
```

[19]:
```
reg.fit(df[['area']],df.price)
```

[19]:
```
LinearRegression()
```

[16]:
```
reg.predict([[120]])
```

```
C:\Users\user\anaconda3\lib\site-packages\sklearn\base.py:450: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
  warnings.warn(
```

Simple | 0 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 4, Col 33 | flat-linear-regression.ipynb

Введите здесь текст для поиска | 3°C Cloudy | ENG | 15:53 31.10.2022

flat-linear-... - JupyterLab

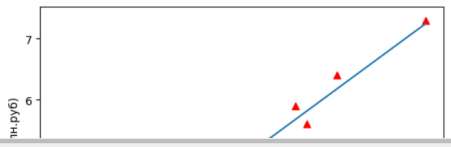
localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher | flat-linear-regression.ipynb

Code | Python 3 (ipykernel)

```
[16]: array([9.38902671])

[10]: reg.predict(df[['area']])

[10]: array([2.81264744, 3.81340081, 4.02784796, 4.52822464, 4.81415417,
             5.67194277, 5.81490754, 6.17231946, 7.24455521])

[11]: reg.coef_

[11]: array([0.07148238])

[12]: reg.intercept_

[12]: 0.8111407046647887

[13]: 0.07148238 * 120 + 0.8111407046647887

[13]: 9.389026304664789

[20]: %matplotlib inline
      plt.scatter(df.area,df.price, color='red',marker='^')
      plt.xlabel('площадь (кв.м.)')
      plt.ylabel('стоимость (млн.руб)')
      plt.plot(df.area,reg.predict(df[['area']]))

[20]: [<matplotlib.lines.Line2D at 0x2eba68bdb50>]
```



Simple | 0 | 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 4, Col 33 | flat-linear-regression.ipynb

Введите здесь текст для поиска | 3°C Cloudy | ENG | 15:53 31.10.2022

flat-linear-... - JupyterLab

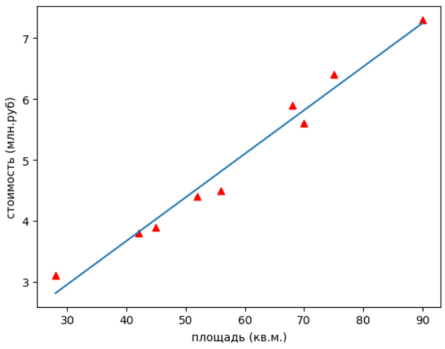
localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher | flat-linear-regression.ipynb

Code | Python 3 (ipykernel)

[20]: [<matplotlib.lines.Line2D at 0x2eba68bdb50>]



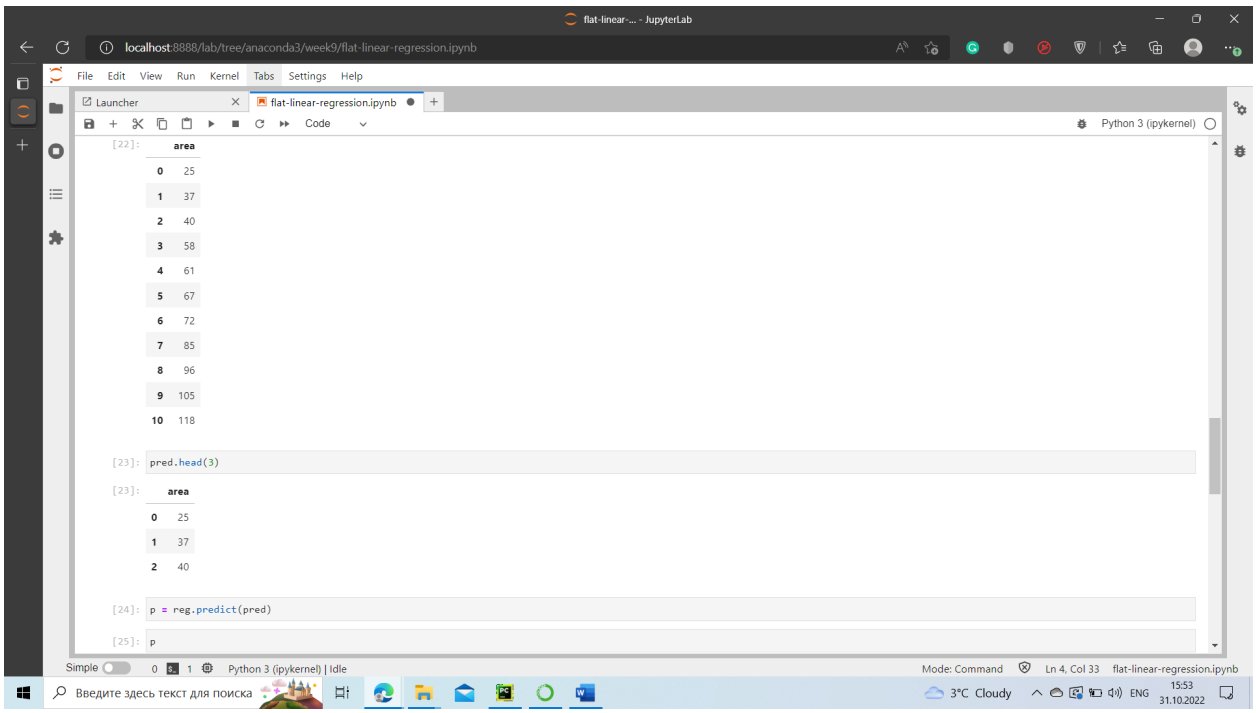

```
[21]: pred = pd.read_excel('prediction_price.xlsx')

[22]: pred
```

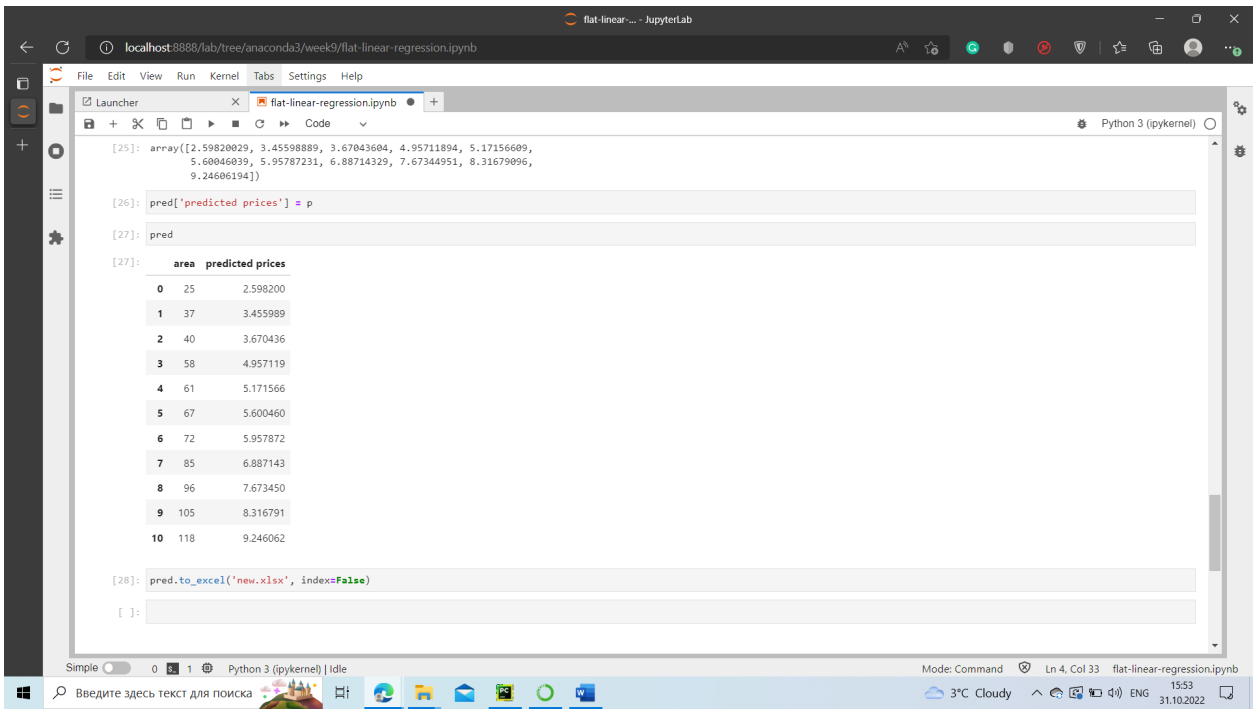
[22]:

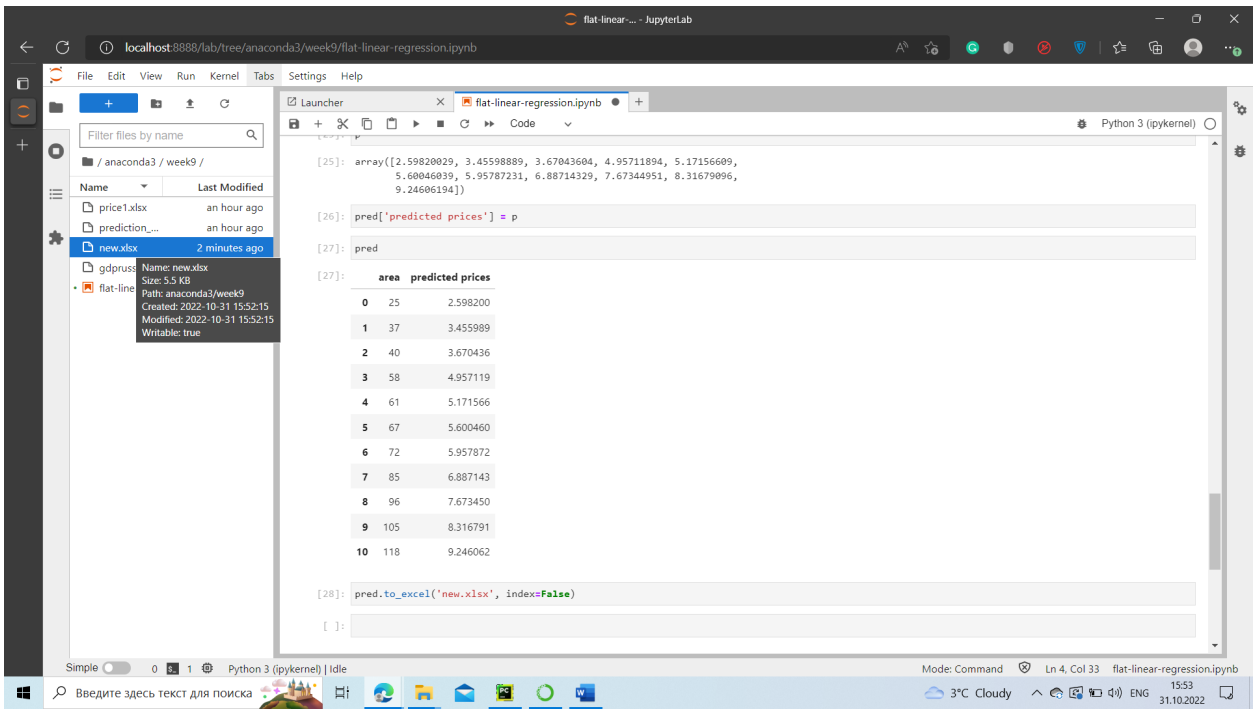
	area
0	25
1	37

Simple | 0 | 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 4, Col 33 | flat-linear-regression.ipynb

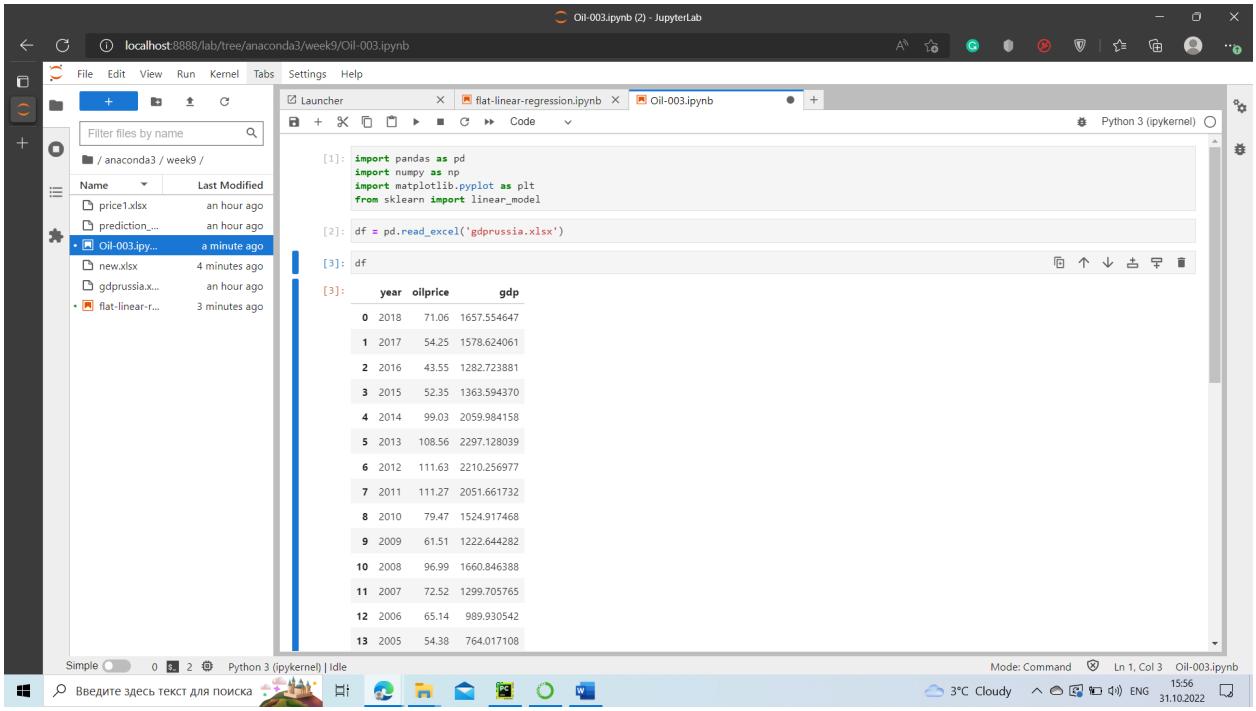
Введите здесь текст для поиска | 3°C Cloudy | ENG | 15:53 31.10.2022


flat-linear-... - JupyterLab
localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb
File Edit View Run Kernel Tabs Settings Help
Launcher
flat-linear-regression.ipynb
Code
Python 3 (ipykernel)
[22]:
area
0 25
1 37
2 40
3 58
4 61
5 67
6 72
7 85
8 96
9 105
10 118
[23]:
pred.head(3)
[23]:
area
0 25
1 37
2 40
[24]:
p = reg.predict(pred)
[25]:
p
Simple
Python 3 (ipykernel) | Idle
Mode: Command
Ln 4, Col 33
flat-linear-regression.ipynb
Введите здесь текст для поиска
3°C Cloudy
ENG
15:53
31.10.2022


flat-linear-... - JupyterLab
localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb
File Edit View Run Kernel Tabs Settings Help
Launcher
flat-linear-regression.ipynb
Code
Python 3 (ipykernel)
[25]:
array([2.59820029, 3.45598889, 3.67043604, 4.95711894, 5.17156609,
5.60046039, 5.95787231, 6.88714329, 7.67344951, 8.31679096,
9.24606194])
[26]:
pred['predicted prices'] = p
[27]:
pred
[27]:
area predicted prices
0 25 2.598200
1 37 3.455989
2 40 3.670436
3 58 4.957119
4 61 5.171566
5 67 5.600460
6 72 5.957872
7 85 6.887143
8 96 7.673450
9 105 8.316791
10 118 9.246062
[28]:
pred.to_excel('new.xlsx', index=False)
[ ]:
Simple
Python 3 (ipykernel) | Idle
Mode: Command
Ln 4, Col 33
flat-linear-regression.ipynb
Введите здесь текст для поиска
3°C Cloudy
ENG
15:53
31.10.2022


flat-linear-... - JupyterLab
localhost:8888/lab/tree/anaconda3/week9/flat-linear-regression.ipynb
File Edit View Run Kernel Tabs Settings Help
Launcher
flat-linear-regression.ipynb
Code
Python 3 (ipykernel)
Filter files by name
/ anaconda3 / week9 /
Name
Last Modified
price1.xlsx an hour ago
prediction_... an hour ago
new.xlsx 2 minutes ago
Name: new.xlsx
Size: 5.5 KB
Path: anaconda3/week9
Created: 2022-10-31 15:52:15
Modified: 2022-10-31 15:52:15
Writable: true
[25]: array([2.59820029, 3.45598889, 3.67043604, 4.95711894, 5.17156609,
5.60046039, 5.95787231, 6.88714329, 7.67344951, 8.31679096,
9.24606194])
[26]: pred['predicted prices'] = p
[27]: pred
[27]:
area predicted prices
0 25 2.598200
1 37 3.455989
2 40 3.670436
3 58 4.957119
4 61 5.171566
5 67 5.600460
6 72 5.957872
7 85 6.887143
8 96 7.673450
9 105 8.316791
10 118 9.246062
[28]: pred.to_excel('new.xlsx', index=False)
[ ]:
Simple 0 1 Python 3 (ipykernel) | Idle
Mode: Command Ln 4, Col 33 flat-linear-regression.ipynb
Введите здесь текст для поиска
3°C Cloudy ENG 15:53 31.10.2022

TASK2


Oil-003.ipynb (2) - JupyterLab
localhost:8888/lab/tree/anaconda3/week9/Oil-003.ipynb
File Edit View Run Kernel Tabs Settings Help
Launcher
flat-linear-regression.ipynb
Oil-003.ipynb
Code
Python 3 (ipykernel)
Filter files by name
/ anaconda3 / week9 /
Name
Last Modified
price1.xlsx an hour ago
prediction_... an hour ago
Oil-003.ipy... a minute ago
new.xlsx 4 minutes ago
gdprussia.x... an hour ago
flat-linear-r... 3 minutes ago
[1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn import linear_model
[2]: df = pd.read_excel('gdprussia.xlsx')
[3]: df
[3]:
year oilprice gdp
0 2018 71.06 1657.554647
1 2017 54.25 1578.624061
2 2016 43.55 1282.723881
3 2015 52.35 1363.594370
4 2014 99.03 2059.984158
5 2013 108.56 2297.128039
6 2012 111.63 2210.256977
7 2011 111.27 2051.661732
8 2010 79.47 1524.917468
9 2009 61.51 1222.644282
10 2008 96.99 1660.846388
11 2007 72.52 1299.705765
12 2006 65.14 989.930542
13 2005 54.38 764.017108
Simple 0 2 Python 3 (ipykernel) | Idle
Mode: Command Ln 1, Col 3 Oil-003.ipynb
Введите здесь текст для поиска
3°C Cloudy ENG 15:56 31.10.2022

Oil-003.ipynb (2) - JupyterLab

localhost:8888/lab/tree/anaconda3/week9/Oil-003.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher | flat-linear-regression.ipynb | Oil-003.ipynb

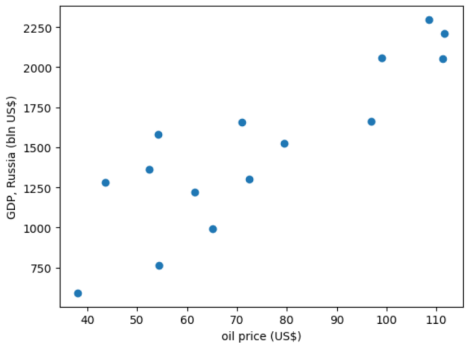
Code — Python 3 (ipykernel)

Filter files by name

/ anaconda3 / week9 /

Name	Last Modified
price1.xlsx	an hour ago
prediction_...	an hour ago
Oil-003.ipy...	2 minutes ago
new.xlsx	5 minutes ago
gdprussia.x...	an hour ago
flat-linear-r...	3 minutes ago

```
[4]: get_ipython().run_line_magic('matplotlib', 'inline')
     plt.scatter(df.oilprice, df.gdp)
     plt.xlabel('oil price (US$)')
     plt.ylabel('GDP, Russia (bln US$)')

[4]: Text(0, 0.5, 'GDP, Russia (bln US$)')
```




```
[ ]:
```

Simple | 0 | 2 | Python 3 (ipykernel) | Idle — Mode: Edit — Ln 1, Col 1 — Oil-003.ipynb

Введите здесь текст для поиска — 3°C Cloudy — ENG — 15:57 31.10.2022

Oil-003.ipynb (2) - JupyterLab

localhost:8888/lab/tree/anaconda3/week9/Oil-003.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher | flat-linear-regression.ipynb | Oil-003.ipynb

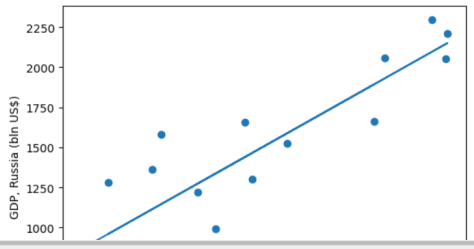
Code — Python 3 (ipykernel)

Filter files by name

/ anaconda3 / week9 /

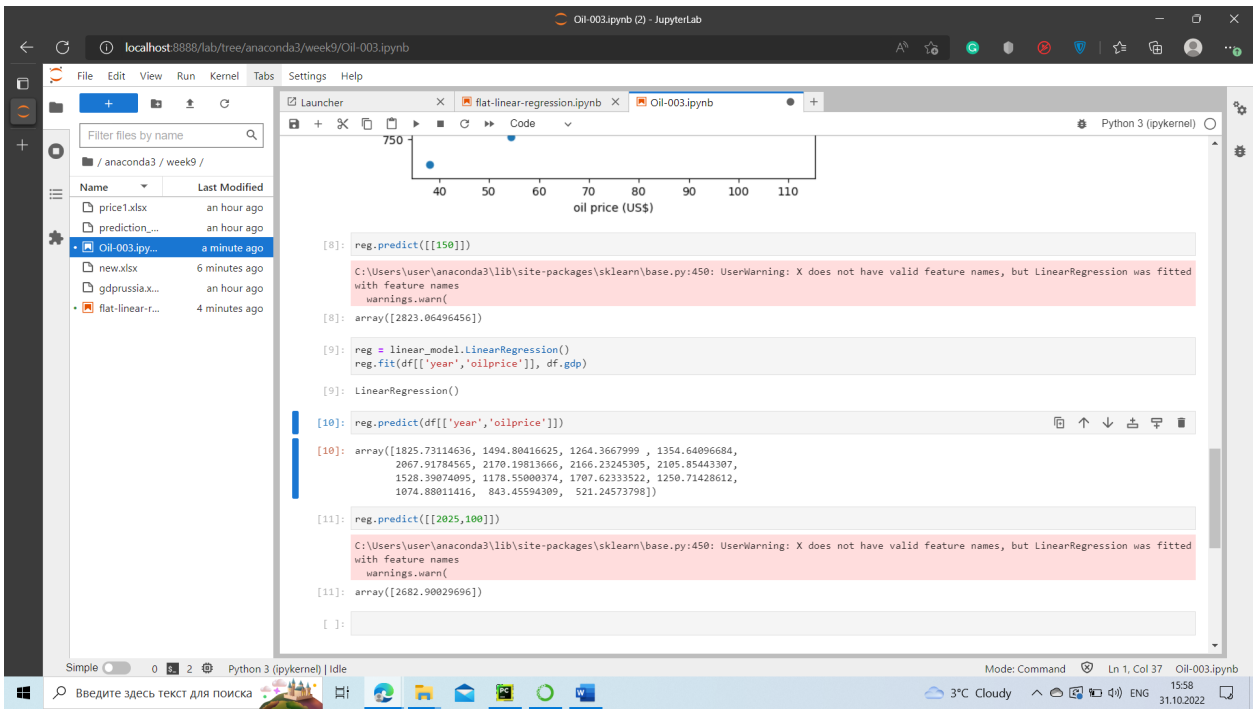
Name	Last Modified
price1.xlsx	an hour ago
prediction_...	an hour ago
Oil-003.ipy...	seconds ago
new.xlsx	5 minutes ago
gdprussia.x...	an hour ago
flat-linear-r...	4 minutes ago

```
[5]: reg = linear_model.LinearRegression()
     reg.fit(df[['oilprice']], df.gdp)

[5]: LinearRegression()

[6]: reg.predict(df[['oilprice']])

[6]: array([1440.70392944, 1146.33492766,  958.9614405 , 1113.06300003,
            1930.50172716, 2097.38671151, 2151.14714194, 2144.84298723,
            1587.97598803, 1273.46871427, 1894.77818382, 1466.27077909,
            1337.03560757, 1148.61142797,  863.52354284])

[7]: get_ipython().run_line_magic('matplotlib', 'inline')
     plt.scatter(df.oilprice, df.gdp)
     plt.xlabel('oil price (US$)')
     plt.ylabel('GDP, Russia (bln US$)')
     plt.plot(df.oilprice, reg.predict(df[['oilprice']]))

[7]: [<matplotlib.lines.Line2D at 0x225f96f3c70>]
```



Simple | 0 | 2 | Python 3 (ipykernel) | Idle — Mode: Edit — Ln 1, Col 1 — Oil-003.ipynb

Введите здесь текст для поиска — 3°C Cloudy — ENG — 15:57 31.10.2022


Oil-003.ipynb (2) - JupyterLab
localhost:8888/lab/tree/anaconda3/week9/Oil-003.ipynb
File Edit View Run Kernel Tabs Settings Help
Launcher
flat-linear-regression.ipynb
Oil-003.ipynb
Code
Python 3 (ipykernel)
Filter files by name
/ anaconda3 / week9 /
Name
Last Modified
price1.xlsx an hour ago
prediction_... an hour ago
Oil-003.ipy... a minute ago
new.xlsx 6 minutes ago
gdprussia.x... an hour ago
flat-linear-r... 4 minutes ago
750
40 50 60 70 80 90 100 110
oil price (US$)
[8]: reg.predict([[150]])
C:\Users\user\anaconda3\lib\site-packages\sklearn\base.py:450: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
warnings.warn(
[8]: array([2823.06496456])
[9]: reg = linear_model.LinearRegression()
reg.fit(df[['year','oilprice']], df.gdp)
[9]: LinearRegression()
[10]: reg.predict(df[['year','oilprice']])
[10]: array([1825.73114636, 1494.80416625, 1264.3667999 , 1354.64096684,
2067.91784565, 2170.19813666, 2166.23245305, 2105.85443307,
1528.39074095, 1178.55000374, 1707.62333522, 1250.71428612,
1074.88011416, 843.45594309, 521.24573798])
[11]: reg.predict([[2025,100]])
C:\Users\user\anaconda3\lib\site-packages\sklearn\base.py:450: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
warnings.warn(
[11]: array([2682.90029696])
[ ]:
Simple
Python 3 (ipykernel) | Idle
Mode: Command
Ln 1, Col 37
Oil-003.ipynb
Введите здесь текст для поиска
3°C Cloudy
ENG
15:58
31.10.2022