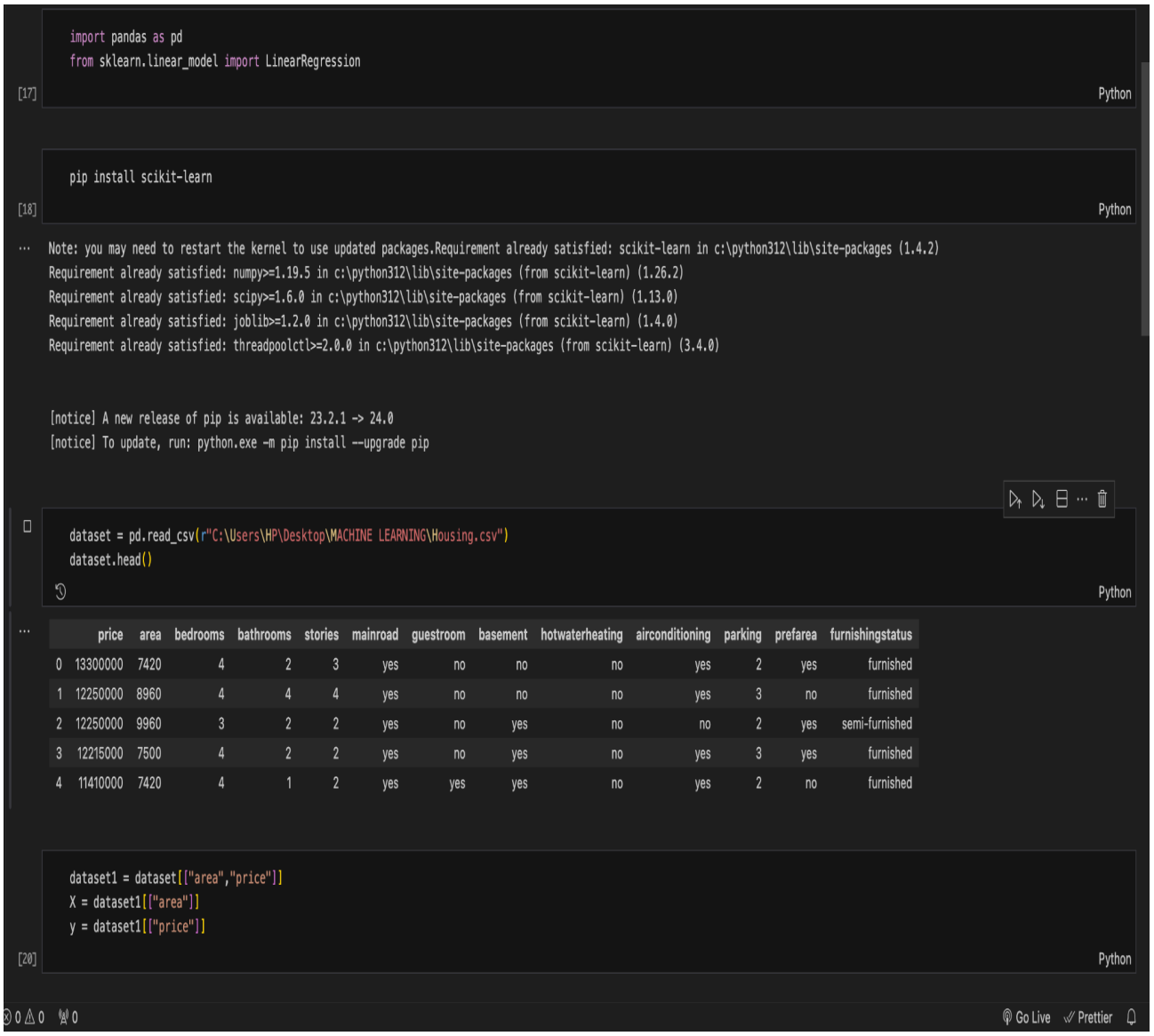
Name - Khushi Chhatwani
College Roll no.- CSC/21/55
University Roll no. - 21059570021

12. Implement Linear Regression problem. For example, based on a dataset consisting of the existing set of prices and area/size of the houses, predict the estimated price of a given house.



```
import pandas as pd
from sklearn.linear_model import LinearRegression
```

[17] Python

```
pip install scikit-learn
```

[18] Python

```
Note: you may need to restart the kernel to use updated packages.Requirement already satisfied: scikit-learn in c:\python312\lib\site-packages (1.4.2)
Requirement already satisfied: numpy>=1.19.5 in c:\python312\lib\site-packages (from scikit-learn) (1.26.2)
Requirement already satisfied: scipy>=1.6.0 in c:\python312\lib\site-packages (from scikit-learn) (1.13.0)
Requirement already satisfied: joblib>=1.2.0 in c:\python312\lib\site-packages (from scikit-learn) (1.4.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in c:\python312\lib\site-packages (from scikit-learn) (3.4.0)


[notice] A new release of pip is available: 23.2.1 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
dataset = pd.read_csv(r"C:\Users\HP\Desktop\MACHINE LEARNING\Housing.csv")
dataset.head()
```

Python

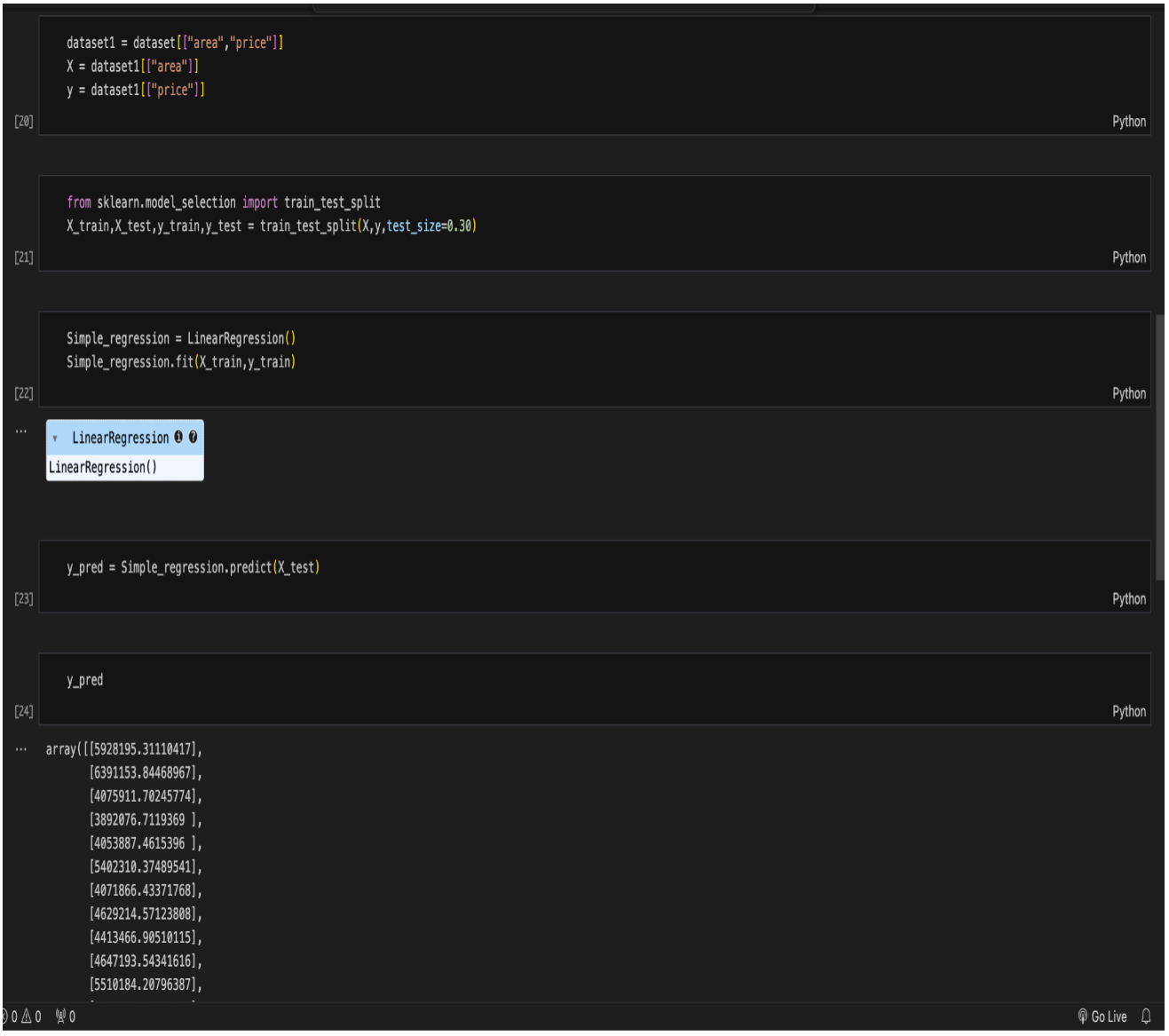
| | price | area | bedrooms | bathrooms | stories | mainroad | guestroom | basement | hotwaterheating | airconditioning | parking | prefarea | furnishingstatus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13300000 | 7420 | 4 | 2 | 3 | yes | no | no | no | yes | 2 | yes | furnished |
| 1 | 12250000 | 8960 | 4 | 4 | 4 | yes | no | no | no | yes | 3 | no | furnished |
| 2 | 12250000 | 9960 | 3 | 2 | 2 | yes | no | yes | no | no | 2 | yes | semi-furnished |
| 3 | 12215000 | 7500 | 4 | 2 | 2 | yes | no | yes | no | yes | 3 | yes | furnished |
| 4 | 11410000 | 7420 | 4 | 1 | 2 | yes | yes | yes | no | yes | 2 | no | furnished |

```
dataset1 = dataset[["area","price"]]
X = dataset1[["area"]]
y = dataset1[["price"]]
```

[20] Python

⊗ 0 ⚠ 0 0 Go Live Prettier

Name - Khushi Chhatwani
College Roll no.- CSC/21/55
University Roll no. - 21059570021



Name - Khushi Chhatwani
College Roll no.- CSC/21/55
University Roll no. - 21059570021

```
[24]  y_pred                                                                    Python

...   array([[5928195.31110417],
             [6391153.84468967],
             [4075911.70245774],
             [3892076.7119369 ],
             [4053887.4615396 ],
             [5402310.37489541],
             [4071866.43371768],
             [4629214.57123808],
             [4413466.90510115],
             [4647193.54341616],
             [5510184.20796387],
             [4582019.76927062],
             [3292028.51549357],
             [4069619.06219542],
             [4844962.23737501],
             [3851624.02453623],
             [5267468.08355983],
             [5492205.2357858 ],
             [4017929.51718344],
             [4251656.15549845],
             [4121308.60720739],
             [3413836.05200004],
             [5357362.94445022],
             [5806837.24890215],
             [4413466.90510115],
       ...
             [4503361.76599154],
             [6867596.60740872],
             [7155260.16225796],
             [3548228.86903117],
             [5409052.48946219]])
```

*Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...*

Name - Khushi Chhatwani
College Roll no.- CSC/21/55
University Roll no. - 21059570021