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ML practice - Colab

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ML practice

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Files

sample\_data  
carprices.csv  
homeprices (2).csv

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[0., 1., 0.],  
[0., 1., 0.]]

import pandas as pd  
a=pd.read\_csv('carprices.csv')  
a

	Car Model	Mileage	Sell Price(\$)	Age(yrs)
0	BMW X5	69000	18000	6
1	BMW X5	35000	34000	3
2	BMW X5	57000	26100	5
3	BMW X5	22500	40000	2
4	BMW X5	48000	31500	4
5	Audi A5	59000	29400	5
6	Audi A5	52000	32000	5
7	Audi A5	72000	19300	6
8	Audi A5	91000	12000	8
9	Mercedes-Benz C-Class	67000	22000	6

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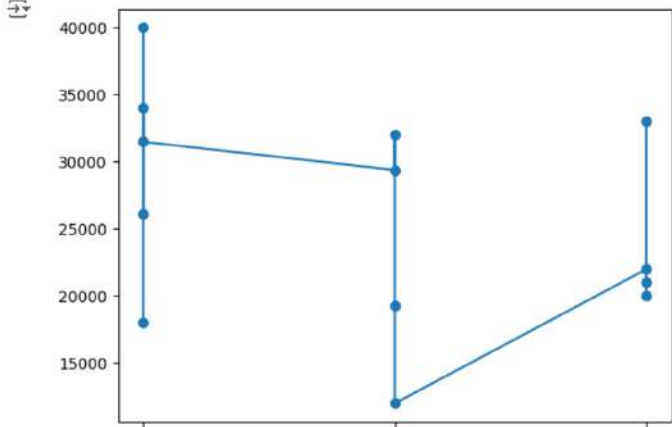
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+ Code + Text

```
import matplotlib.pyplot as plt
plt.scatter(data=a,x='Car Model',y='Sell Price($)' )
plt.plot(a['Car Model'],a['Sell Price($)'])
plt.show()
```



Car Model	Sell Price (\$)
Car Model 1	18000
Car Model 1	26000
Car Model 1	31500
Car Model 1	34000
Car Model 1	40000
Car Model 2	12000
Car Model 2	19000
Car Model 2	29000
Car Model 2	32000
Car Model 3	20000
Car Model 3	21000
Car Model 3	22000
Car Model 3	33000

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Car Model	Price
BMW X5	18000
BMW X5	26000
BMW X5	34000
BMW X5	40000
Audi A5	12000
Audi A5	19000
Audi A5	29000
Audi A5	32000
Mercedes Benz C class	20000
Mercedes Benz C class	22000
Mercedes Benz C class	33000

[36] b=pd.get\_dummies(a).astype(int)

b

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Code

```
[36] b=pd.get_dummies(a).astype(int)
      b
```

BMW X5 Audi A5 Mercedes Benz C class

	Mileage	Sell Price(\$)	Age(yrs)	Car Model_Audi A5	Car Model_BMW X5	Car Model_Mercedes Benz C class
0	89000	18000	6	0	1	0
1	35000	34000	3	0	1	0
2	57000	26100	5	0	1	0
3	22500	40000	2	0	1	0
4	46000	31500	4	0	1	0
5	59000	29400	5	1	0	0
6	52000	32000	5	1	0	0
7	72000	19300	6	1	0	0
8	91000	12000	8	1	0	0

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12590003300050001

Next steps: [View recommended plots](#) [New interactive sheet](#)

c-b.drop(['Sell Price(\$)', 'Car Model\_Audi A5'],axis=1)

c

	Mileage	Age(yrs)	Car Model_BMW X5	Car Model_Mercedes Benz C class
0	69000	6	1	0
1	35000	3	1	0
2	57000	5	1	0
3	22500	2	1	0
4	46000	4	1	0
5	59000	5	0	0
6	52000	5	0	0
7	72000	6	0	0
8	91000	8	0	0

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11	79000	7	0	1
12	59000	5	0	1

Next steps:

[View recommended plots](#)

[New interactive sheet](#)

[38] d=b['Sell Price(\$)']

d

	Sell Price(\$)
0	18000
1	34000
2	26100
3	40000
4	31500
5	29400
6	32000
7	19300

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```
[39] from sklearn.preprocessing import LabelEncoder
e=LabelEncoder()
e
```

LabelEncoder

```
f=a
f['Car Model']=e.fit_transform(f['Car Model'])
f
```

	Car Model	Mileage	Sell Price(\$)	Age(yrs)
0	1	69000	18000	6
1	1	35000	34000	3
2	1	57000	26100	5
3	1	22500	40000	2
4	1	46000	31500	4
5	0	59000	29400	5

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```
[43] from sklearn.preprocessing import OneHotEncoder
      from sklearn.compose import ColumnTransformer
      g=ColumnTransformer([('Car Model',OneHotEncoder(),[0])])
      g

      ColumnTransformer
      |
      +-- Car Model
           |
           +-- OneHotEncoder
```

```
[44] h=g.fit_transform(f)
      h

      array([[0., 1., 0.],
             [0., 1., 0.],
             [0., 1., 0.],
             [0., 1., 0.],
             [0., 1., 0.],
             [1., 0., 0.],
             [1., 0., 0.],
             [1., 0., 0.],
             [1., 0., 0.],
             [0., 0., 1.]])
```

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Code

```
[45] from sklearn.linear_model import LinearRegression
      z=LinearRegression()
      y=z.fit(c,d)
      y
```

LinearRegression

```
x=y.predict([[45000,4,1,0]])
x
```

/usr/local/lib/python3.10/dist-packages/sklearn/base.py:493: UserWarning: X does not have valid feature names, but LinearRegression
warnings.warn(
array([30253.10988495])

```
v=y.predict([[86000,7,0,1]])
v
```

/usr/local/lib/python3.10/dist-packages/sklearn/base.py:493: UserWarning: X does not have valid feature names, but LinearRegression
warnings.warn(
array([17818.95045785])

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```
v=y.predict([[86000,7,0,1]])
v

/usr/local/lib/python3.10/dist-packages/sklearn/base.py:493: UserWarning: X does not have valid feature names, but LinearRegression
warnings.warn(
array([17818.95045785])

[50] y.score(c,d)

0.9417050937281083
```

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