Deena 20104016

Basic Analysis using Numpy and Pandas

Import Libraries

In [12]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

Importing Dataset

In [2]:
```
df=pd.read_csv("fiat.csv")
df
```

Out[2]:

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon
0	1	lounge	51	882	25000	1	44.907242	8.611560
1	2	pop	51	1186	32500	1	45.666359	12.241890
2	3	sport	74	4658	142228	1	45.503300	11.417840
3	4	lounge	51	2739	160000	1	40.633171	17.634609
4	5	pop	73	3074	106880	1	41.903221	12.495650
...	...	...	...	...	...	...	...	...
1533	1534	sport	51	3712	115280	1	45.069679	7.704920
1534	1535	lounge	74	3835	112000	1	45.845692	8.666870
1535	1536	pop	51	2223	60457	1	45.481541	9.413480
1536	1537	lounge	51	2557	80750	1	45.000702	7.682270
1537	1538	pop	51	1766	54276	1	40.323410	17.568270

1538 rows × 9 columns

To display first 10 rows

In [3]:
```
df.head(10)
```

Out[3]:

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon	price
0	1	lounge	51	882	25000	1	44.907242	8.611560	8900
1	2	pop	51	1186	32500	1	45.666359	12.241890	8800
2	3	sport	74	4658	142228	1	45.503300	11.417840	4200
3	4	lounge	51	2739	160000	1	40.633171	17.634609	6000
4	5	pop	73	3074	106880	1	41.903221	12.495650	5700
5	6	pop	74	3623	70225	1	45.000702	7.682270	7900
6	7	lounge	51	731	11600	1	44.907242	8.611560	10750
7	8	lounge	51	1521	49076	1	41.903221	12.495650	9190
8	9	sport	73	4049	76000	1	45.548000	11.549470	5600
9	10	sport	51	3653	89000	1	45.438301	10.991700	6000

To display last 5 rows

In [4]:
```
df.tail(5)
```

Out[4]:

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon	p
1533	1534	sport	51	3712	115280	1	45.069679	7.70492	5
1534	1535	lounge	74	3835	112000	1	45.845692	8.66687	4
1535	1536	pop	51	2223	60457	1	45.481541	9.41348	7
1536	1537	lounge	51	2557	80750	1	45.000702	7.68227	5
1537	1538	pop	51	1766	54276	1	40.323410	17.56827	7

Satistical Summary

In [5]:
```
df.describe()
```

Out[5]:

	ID	engine_power	age_in_days	km	previous_owners	lat	
count	1538.000000	1538.000000	1538.000000	1538.000000	1538.000000	1538.000000	1
mean	769.500000	51.904421	1650.980494	53396.011704	1.123537	43.541361	
std	444.126671	3.988023	1289.522278	40046.830723	0.416423	2.133518	
min	1.000000	51.000000	366.000000	1232.000000	1.000000	36.855839	
25%	385.250000	51.000000	670.000000	20006.250000	1.000000	41.802990	
50%	769.500000	51.000000	1035.000000	39031.000000	1.000000	44.394096	
75%	1153.750000	51.000000	2616.000000	79667.750000	1.000000	45.467960	
max	1538.000000	77.000000	4658.000000	235000.000000	4.000000	46.795612	

To find shape and size

In [6]:
```
df.shape
```

Out[6]:
```
(1538, 9)
```

In [7]:
```
df.size
```

Out[7]:
```
13842
```

To fill the null values

In [8]:
```
df.isna()
```

Out[8]:

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon	price
0	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...	...
1533	False	False	False	False	False	False	False	False	False
1534	False	False	False	False	False	False	False	False	False
1535	False	False	False	False	False	False	False	False	False
1536	False	False	False	False	False	False	False	False	False
1537	False	False	False	False	False	False	False	False	False

1538 rows × 9 columns

To fill missing values

In [9]:
```
df.fillna(value=0)
```

Out[9]:

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon
0	1	lounge	51	882	25000	1	44.907242	8.611560
1	2	pop	51	1186	32500	1	45.666359	12.241890
2	3	sport	74	4658	142228	1	45.503300	11.417840
3	4	lounge	51	2739	160000	1	40.633171	17.634609
4	5	pop	73	3074	106880	1	41.903221	12.495650
...	...	...	...	...	...	...	...	...
1533	1534	sport	51	3712	115280	1	45.069679	7.704920
1534	1535	lounge	74	3835	112000	1	45.845692	8.666870
1535	1536	pop	51	2223	60457	1	45.481541	9.413480
1536	1537	lounge	51	2557	80750	1	45.000702	7.682270
1537	1538	pop	51	1766	54276	1	40.323410	17.568270

1538 rows × 9 columns

coloumns

In [10]:
```
df.columns
```

Out[10]:
```
Index(['ID', 'model', 'engine_power', 'age_in_days', 'km', 'previous_owners',
       'lat', 'lon', 'price'],
      dtype='object')
```

to print particular coloumn

In [11]:
```
data=df[["km","price"]]
data
```

Out[11]:

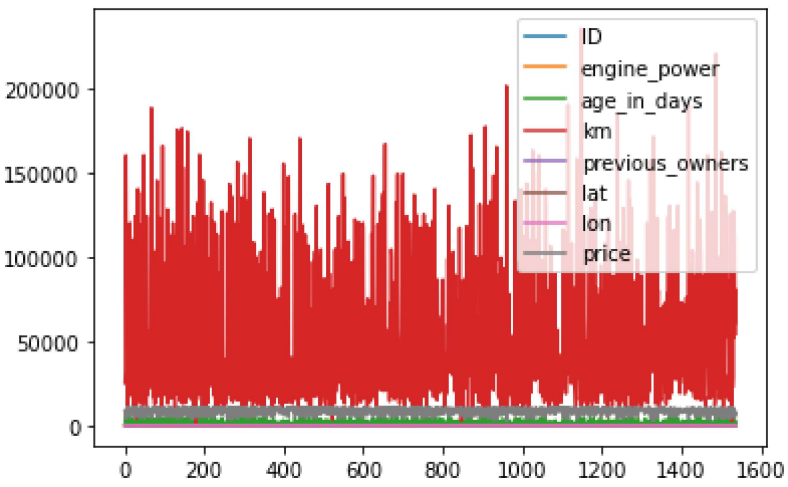
	km	price
0	25000	8900
1	32500	8800
2	142228	4200
3	160000	6000
4	106880	5700
...	...	...
1533	115280	5200
1534	112000	4600
1535	60457	7500
1536	80750	5990
1537	54276	7900

1538 rows × 2 columns

Line plot

In [13]:
```
df.plot.line()
```

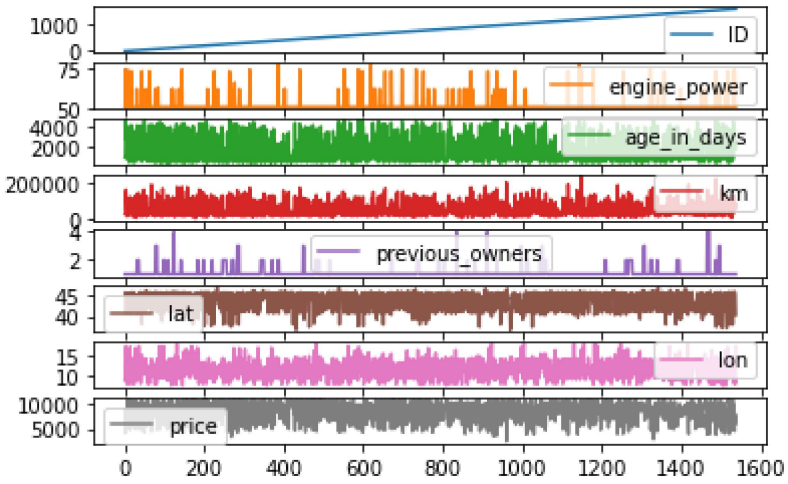
Out[13]: <AxesSubplot:>



line plot

In [15]:
```
df.plot.line(subplots=True)
```

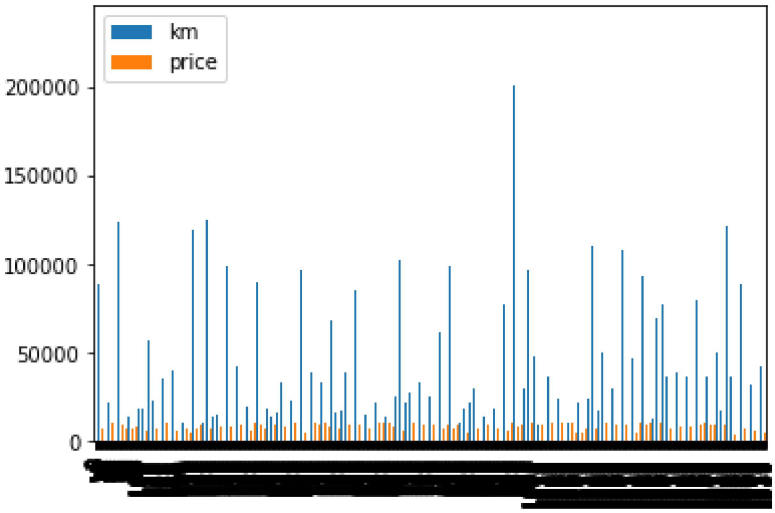
Out[15]:
```
array([<AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>,
       <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>, <AxesSubplot:>],
      dtype=object)
```



bar plot

In [16]:
```
data.plot.bar()
```

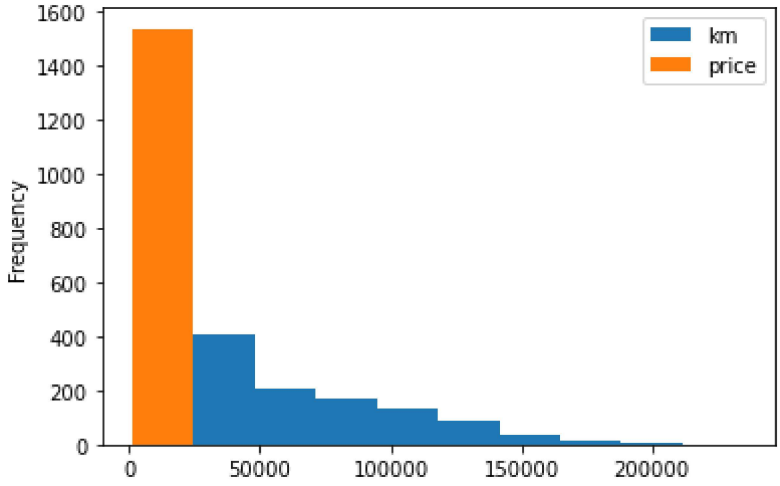
Out[16]:
```
<AxesSubplot:>
```



hist plot

In [21]:
```
data.plot.hist()
```

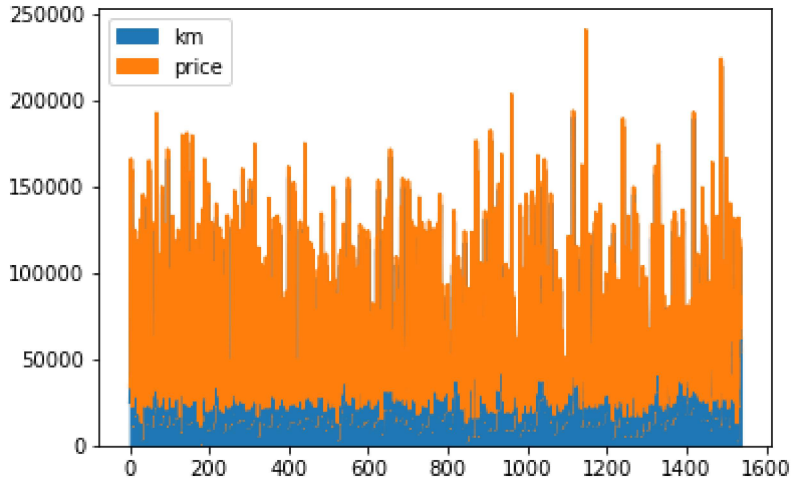
Out[21]:
```
<AxesSubplot:ylabel='Frequency'>
```



area plot

In [18]:
```
data.plot.area()
```

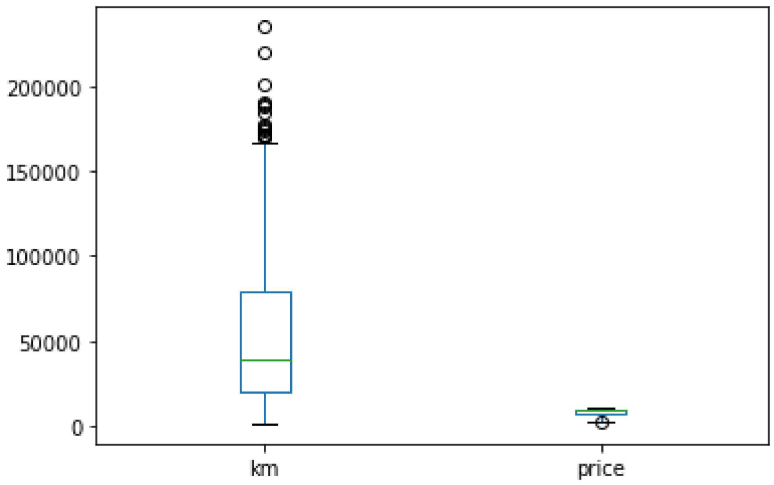
Out[18]:
```
<AxesSubplot:>
```



box plot

In [19]:
```
data.plot.box()
```

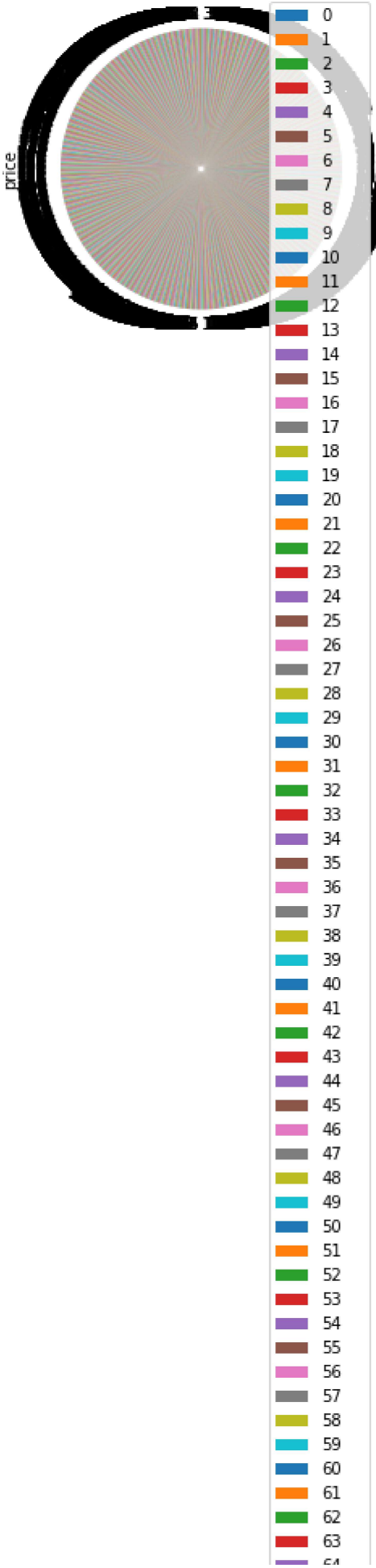
Out[19]: <AxesSubplot:>



pie plot

In [20]:
```
data.plot.pie(y="price")
```

Out[20]:
```
<AxesSubplot:ylabel='price'>
```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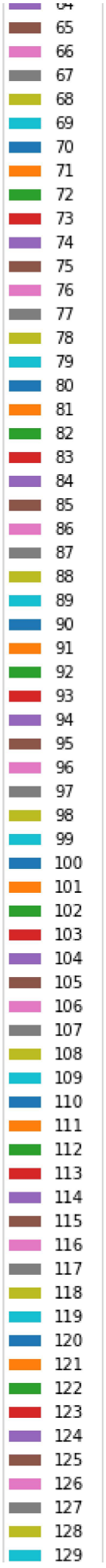
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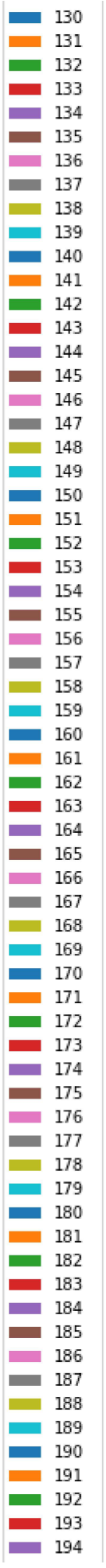
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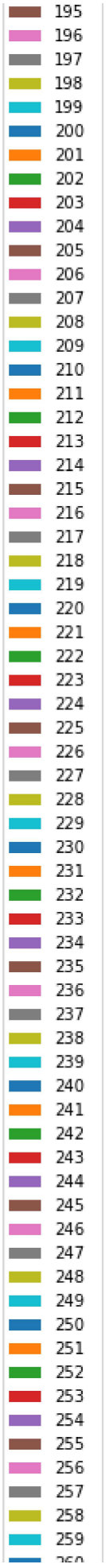
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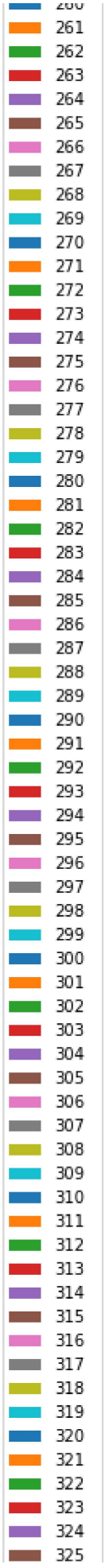
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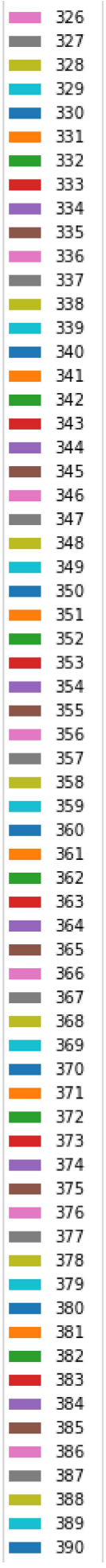
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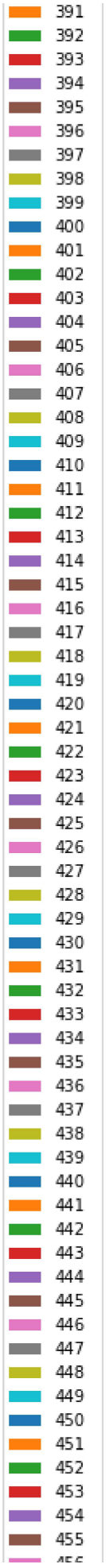
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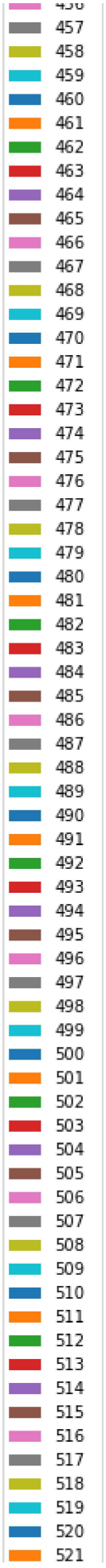
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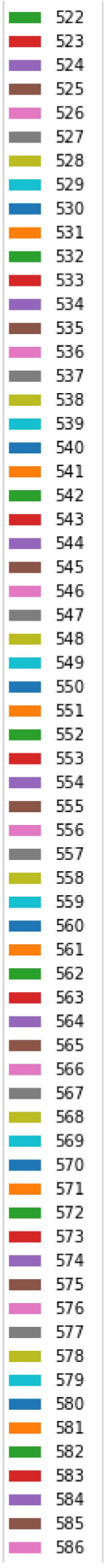
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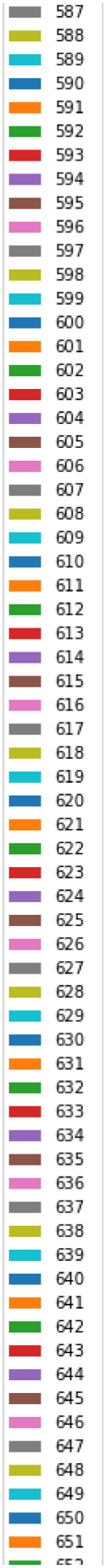
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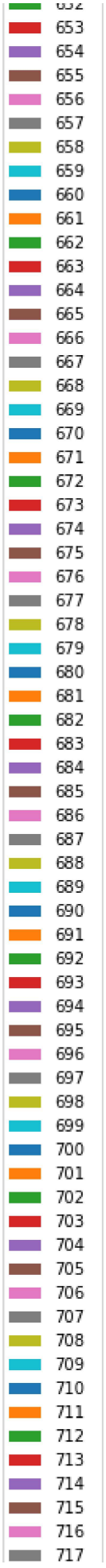
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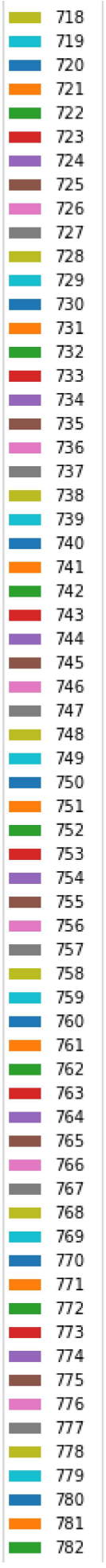
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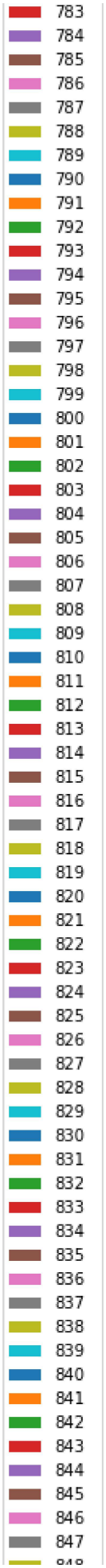
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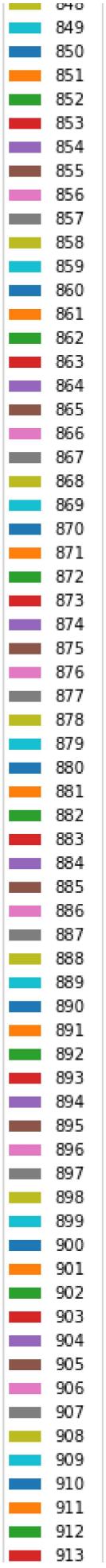
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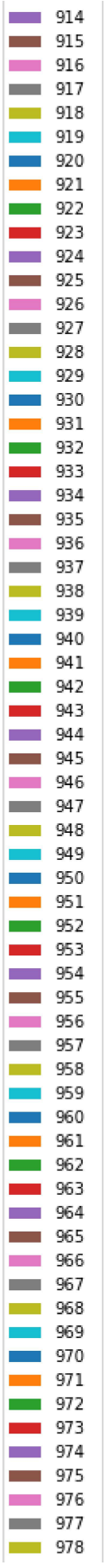
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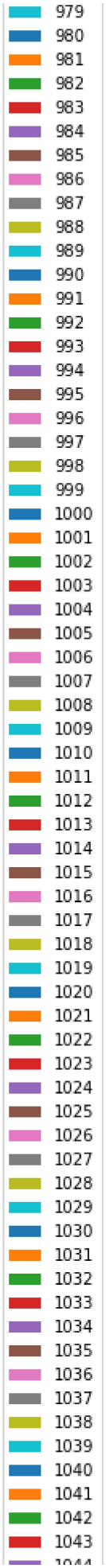
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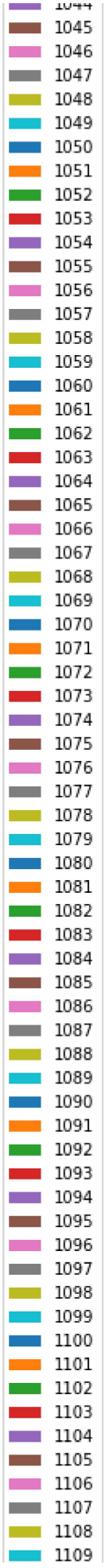
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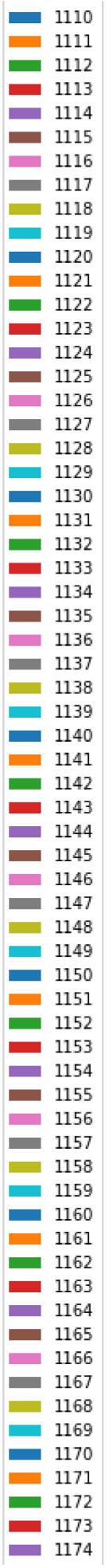
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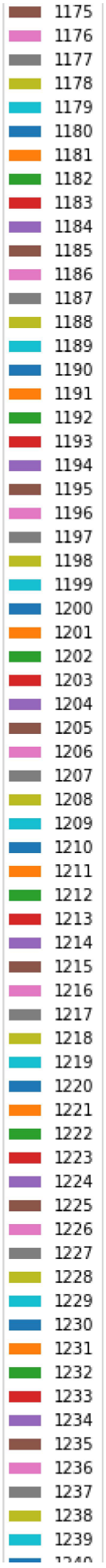
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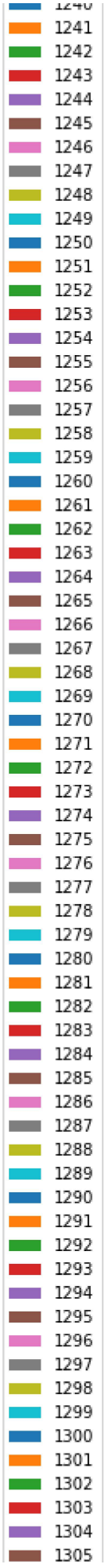
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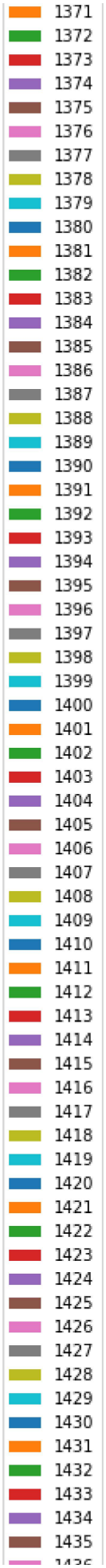
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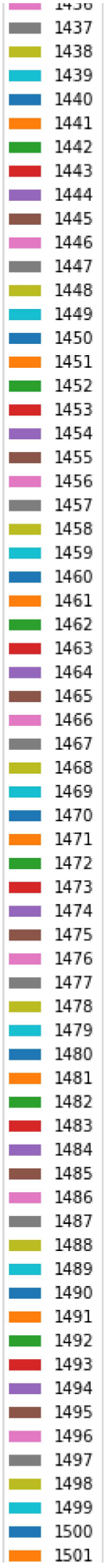
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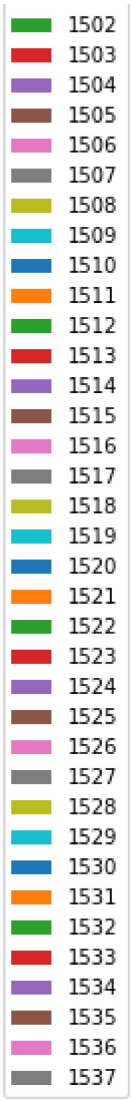

In [22]:
```
data.plot.scatter(x="km",y="price")
```

Out[22]: <AxesSubplot:xlabel='km', ylabel='price'>