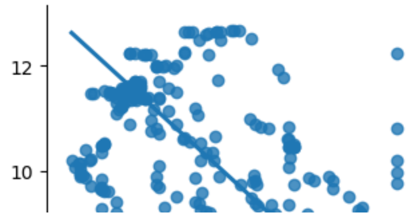
```
<seaborn.axisgrid.FacetGrid at 0x7f933ffbb400>
```

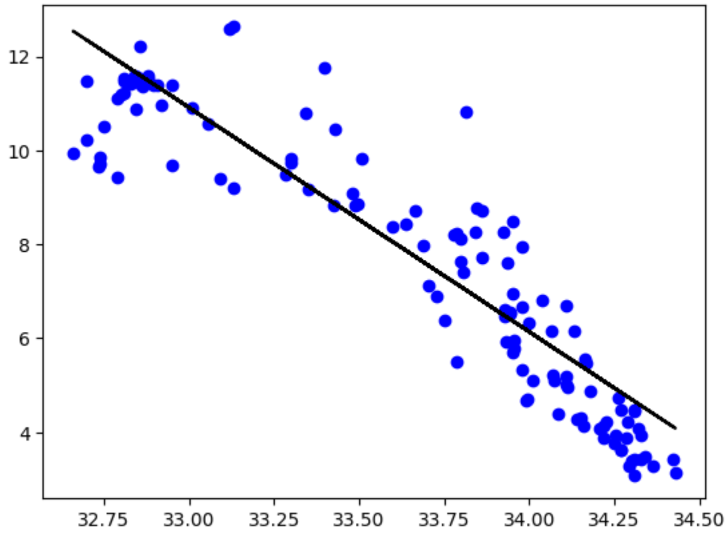


```
df500.fillna(method='ffill',inplace=True)
```

```
x=np.array(df500['Sal']).reshape(-1,1)
y=np.array(df500['Temp']).reshape(-1,1)
df500.dropna(inplace=True)
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.25)
regr=LinearRegression()
regr.fit(x_train,y_train)
print("Regression:",regr.score(x_test,y_test))
```

```
Regression: 0.8431299742395267
```

```
y_pred=regr.predict(x_test)
plt.scatter(x_test,y_test,color='b')
plt.plot(x_test,y_pred,color='k')
plt.show()
```



```
from sklearn.linear_model import LinearRegression
from sklearn.metrics import r2_score
```

```
model=LinearRegression()
model.fit(x_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

fiat500_VehicleSelection_Dataset using **LinearRegression**

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn import preprocessing,svm
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
```

```
dt=pd.read_csv(r"/content/fiat500_VehicleSelection_Dataset (1).csv")
print(dt)
```

```
   ID   model  engine_power  age_in_days      km  previous_owners  \
0   1  lounge            51          882   25000                1
1   2     pop            51         1186   32500                1
2   3   sport            74         4658  142228                1
3   4  lounge            51         2739  160000                1
```

```
4        5     pop            73         3074  106880                1
...    ...     ...           ...          ...     ...              ...
1533  1534   sport            51         3712  115280                1
1534  1535  lounge            74         3835  112000                1
1535  1536     pop            51         2223   60457                1
1536  1537  lounge            51         2557   80750                1
1537  1538     pop            51         1766   54276                1

            lat        lon  price
0     44.907242   8.611560   8900
1     45.666359  12.241890   8800
2     45.503300  11.417840   4200
3     40.633171  17.634609   6000
4     41.903221  12.495650   5700
...         ...        ...    ...
1533  45.069679   7.704920   5200
1534  45.845692   8.666870   4600
1535  45.481541   9.413480   7500
1536  45.000702   7.682270   5990
1537  40.323410  17.568270   7900

[1538 rows x 9 columns]
```

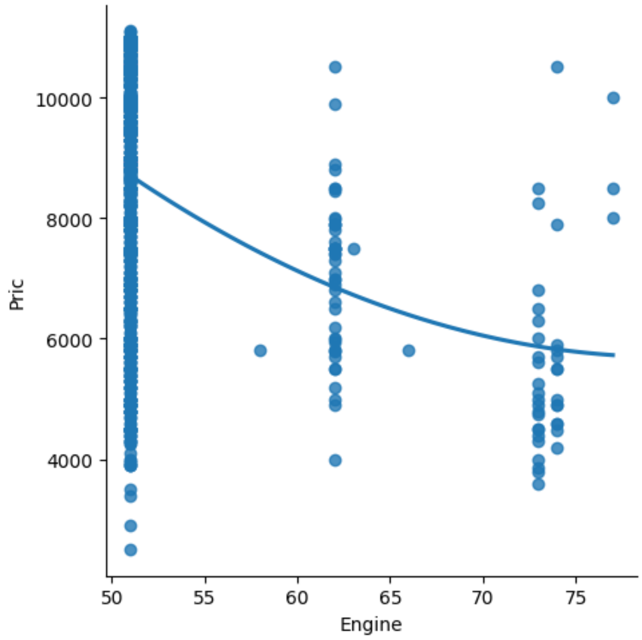
```
dt=dt[['engine_power','price']]
dt.columns=['Engine','Pric']
```

```
dt.head(10)
```

	Engine	Pric
0	51	8900
1	51	8800
2	74	4200
3	51	6000
4	73	5700
5	74	7900
6	51	10750
7	51	9190
8	73	5600
9	51	6000

```
sns.lmplot(x='Engine',y='Pric',data=dt,order=2,ci=None)
```

```
<seaborn.axisgrid.FacetGrid at 0x7ff09eb93760>
```



```
dt.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1538 entries, 0 to 1537
Data columns (total 2 columns):
 #   Column  Non-Null Count  Dtype
---  ------  --------------  -----
 0   Engine  1538 non-null   int64
 1   Pric    1538 non-null   int64
dtypes: int64(2)
memory usage: 24.2 KB
```

```
dt.describe()
```

	Engine	Pric
count	1538.000000	1538.000000
mean	51.904421	8576.003901
std	3.988023	1939.958641
min	51.000000	2500.000000
25%	51.000000	7122.500000
50%	51.000000	9000.000000
75%	51.000000	10000.000000
max	77.000000	11100.000000

```
dt.fillna(method='ffill')
```

	Engine	Pric
0	51	8900
1	51	8800
2	74	4200
3	51	6000
4	73	5700
...	...	...
1533	51	5200
1534	74	4600
1535	51	7500
1536	51	5990
1537	51	7900

1538 rows × 2 columns

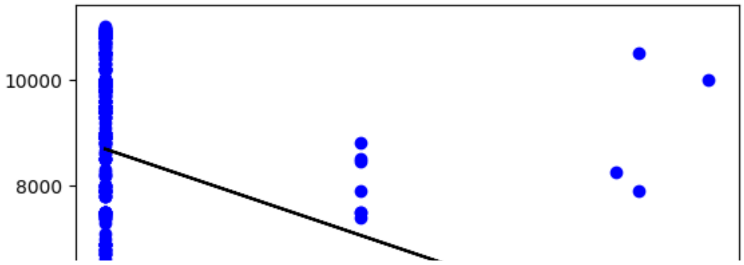
```
x=np.array(dt['Engine']).reshape(-1,1)
y=np.array(dt['Pric']).reshape(-1,1)
```

```
dt.dropna(inplace=True)
```

```
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.25)
regr=LinearRegression()
regr.fit(x_train,y_train)
print(regr.score(x_test,y_test))
```

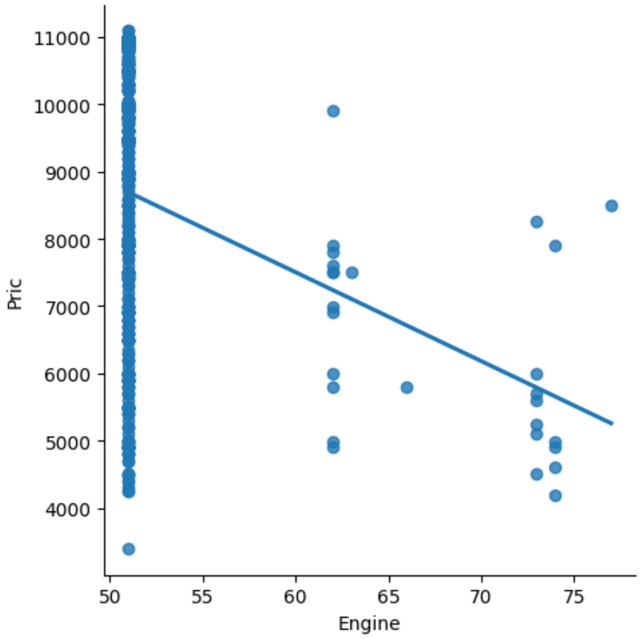
```
0.05490142056228908
```

```
y_pred=regr.predict(x_test)
plt.scatter(x_test,y_test,color='b')
plt.plot(x_test,y_pred,color='k')
plt.show()
```



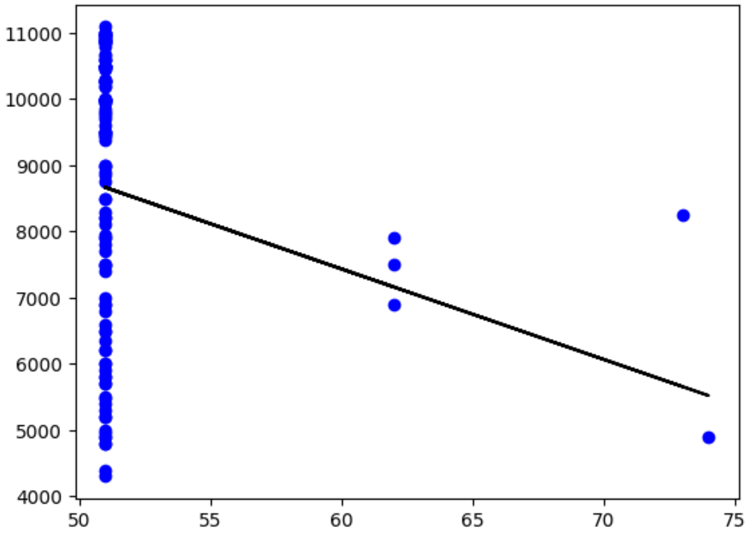
```
dt500=dt[:][:500]
sns.lmplot(x="Engine",y="Pric",data=dt500,order=1,ci=None)
```

```
<seaborn.axisgrid.FacetGrid at 0x7ff09dd40850>
```



```
dt500.fillna(method='ffill',inplace=True)
x=np.array(dt500['Engine']).reshape(-1,1)
y=np.array(dt500['Pric']).reshape(-1,1)
dt500.dropna(inplace=True)
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.25)
regr=LinearRegression()
regr.fit(x_train,y_train)
print("Regression:",regr.score(x_test,y_test))
y_pred=regr.predict(x_test)
plt.scatter(x_test,y_test,color='b')
plt.plot(x_test,y_pred,color='k')
plt.show()
```

```
Regression: 0.021647527672627453
```



```
from sklearn.linear_model import LinearRegression
from sklearn.metrics import r2_score
```