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Run Code

In [1]:
```
import pandas as pd
import numpy as np
from matplotlib import pyplot as plt
import seaborn as sb
```

In [10]:
```
data=pd.read_csv('Car_sales.csv')
data
```

Out[10]:

| cle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_capacity | Fuel_efficiency | Latest_Launch | Power_perf_factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ıssenger | 21.50 | 1.8 | 140.0 | 101.2 | 67.3 | 172.4 | 2.639 | 13.2 | 28.0 | 2/2/2012 | 58.280150 |
| ıssenger | 28.40 | 3.2 | 225.0 | 108.1 | 70.3 | 192.9 | 3.517 | 17.2 | 25.0 | 6/3/2011 | 91.370778 |
| ıssenger | NaN | 3.2 | 225.0 | 106.9 | 70.6 | 192.0 | 3.470 | 17.2 | 26.0 | 1/4/2012 | NaN |
| ıssenger | 42.00 | 3.5 | 210.0 | 114.6 | 71.4 | 196.6 | 3.850 | 18.0 | 22.0 | 3/10/2011 | 91.389779 |
| ıssenger | 23.99 | 1.8 | 150.0 | 102.6 | 68.2 | 178.0 | 2.998 | 16.4 | 27.0 | 10/8/2011 | 62.777639 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ıssenger | 24.40 | 1.9 | 160.0 | 100.5 | 67.6 | 176.6 | 3.042 | 15.8 | 25.0 | 9/21/2011 | 66.498812 |
| ıssenger | 27.50 | 2.4 | 168.0 | 104.9 | 69.3 | 185.9 | 3.208 | 17.9 | 25.0 | 11/24/2012 | 70.654495 |
| ıssenger | 28.80 | 2.4 | 168.0 | 104.9 | 69.3 | 186.2 | 3.259 | 17.9 | 25.0 | 6/25/2011 | 71.155978 |
| ıssenger | 45.50 | 2.3 | 236.0 | 104.9 | 71.5 | 185.7 | 3.601 | 18.5 | 23.0 | 4/26/2011 | 101.623357 |
| ıssenger | 36.00 | 2.9 | 201.0 | 109.9 | 72.1 | 189.8 | 3.600 | 21.1 | 24.0 | 11/14/2011 | 85.735655 |

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Run Code

In [11]:
```
1 data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 157 entries, 0 to 156
Data columns (total 16 columns):
 #   Column               Non-Null Count  Dtype
---  ------               --------------  -----
 0   Manufacturer         157 non-null    object
 1   Model                157 non-null    object
 2   Sales_in_thousands   157 non-null    float64
 3   __year_resale_value  121 non-null    float64
 4   Vehicle_type         157 non-null    object
 5   Price_in_thousands   155 non-null    float64
 6   Engine_size          156 non-null    float64
 7   Horsepower           156 non-null    float64
 8   Wheelbase            156 non-null    float64
 9   Width                156 non-null    float64
 10  Length               156 non-null    float64
 11  Curb_weight          155 non-null    float64
 12  Fuel_capacity        156 non-null    float64
 13  Fuel_efficiency      154 non-null    float64
 14  Latest_Launch        157 non-null    object
 15  Power_perf_factor    155 non-null    float64
dtypes: float64(12), object(4)
memory usage: 19.8+ KB
```

In [12]:
```
1 data.head()
```

Out[12]:

| | Manufacturer | Model | Sales_in_thousands | __year_resale_value | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | Acura | Integra | 16.919 | 16.360 | Passenger | 21.50 | 1.8 | 140.0 | 101.2 | 67.3 | 172.4 | |
| **1** | Acura | TL | 39.384 | 19.875 | Passenger | 28.40 | 3.2 | 225.0 | 108.1 | 70.3 | 192.9 | |

In [12]:
```
1 data.head()
```

Out[12]:

| | Manufacturer | Model | Sales_in_thousands | __year_resale_value | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Acura | Integra | 16.919 | 16.360 | Passenger | 21.50 | 1.8 | 140.0 | 101.2 | 67.3 | 172.4 | |
| 1 | Acura | TL | 39.384 | 19.875 | Passenger | 28.40 | 3.2 | 225.0 | 108.1 | 70.3 | 192.9 | |
| 2 | Acura | CL | 14.114 | 18.225 | Passenger | NaN | 3.2 | 225.0 | 106.9 | 70.6 | 192.0 | |
| 3 | Acura | RL | 8.588 | 29.725 | Passenger | 42.00 | 3.5 | 210.0 | 114.6 | 71.4 | 196.6 | |
| 4 | Audi | A4 | 20.397 | 22.255 | Passenger | 23.99 | 1.8 | 150.0 | 102.6 | 68.2 | 178.0 | |

In [13]:
```
1 data.tail()
```

Out[13]:

| Model | Sales_in_thousands | __year_resale_value | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_capa |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V40 | 3.545 | NaN | Passenger | 24.4 | 1.9 | 160.0 | 100.5 | 67.6 | 176.6 | 3.042 | |
| S70 | 15.245 | NaN | Passenger | 27.5 | 2.4 | 168.0 | 104.9 | 69.3 | 185.9 | 3.208 | |
| V70 | 17.531 | NaN | Passenger | 28.8 | 2.4 | 168.0 | 104.9 | 69.3 | 186.2 | 3.259 | |
| C70 | 3.493 | NaN | Passenger | 45.5 | 2.3 | 236.0 | 104.9 | 71.5 | 185.7 | 3.601 | |
| S80 | 18.969 | NaN | Passenger | 36.0 | 2.9 | 201.0 | 109.9 | 72.1 | 189.8 | 3.600 | |

In [14]:
```
1 data.isnull().sum()     # check null values
```

Out[14]:
```
Manufacturer          0
Model                 0
Sales_in_thousands    0
__year_resale_value   36
Vehicle_type          0
Price_in_thousands    2
Engine_size           1
Horsepower            1
Wheelbase             1
```

In [17]:
```
a=data.drop(['__year_resale_value'],axis='columns',inplace=True)
```

In [18]:
```
data
```

Out[18]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_capa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | Acura | Integra | 16.919 | Passenger | 21.50 | 1.8 | 140.0 | 101.2 | 67.3 | 172.4 | 2.639 | |
| **1** | Acura | TL | 39.384 | Passenger | 28.40 | 3.2 | 225.0 | 108.1 | 70.3 | 192.9 | 3.517 | |
| **2** | Acura | CL | 14.114 | Passenger | NaN | 3.2 | 225.0 | 106.9 | 70.6 | 192.0 | 3.470 | |
| **3** | Acura | RL | 8.588 | Passenger | 42.00 | 3.5 | 210.0 | 114.6 | 71.4 | 196.6 | 3.850 | |
| **4** | Audi | A4 | 20.397 | Passenger | 23.99 | 1.8 | 150.0 | 102.6 | 68.2 | 178.0 | 2.998 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **152** | Volvo | V40 | 3.545 | Passenger | 24.40 | 1.9 | 160.0 | 100.5 | 67.6 | 176.6 | 3.042 | |
| **153** | Volvo | S70 | 15.245 | Passenger | 27.50 | 2.4 | 168.0 | 104.9 | 69.3 | 185.9 | 3.208 | |
| **154** | Volvo | V70 | 17.531 | Passenger | 28.80 | 2.4 | 168.0 | 104.9 | 69.3 | 186.2 | 3.259 | |
| **155** | Volvo | C70 | 3.493 | Passenger | 45.50 | 2.3 | 236.0 | 104.9 | 71.5 | 185.7 | 3.601 | |
| **156** | Volvo | S80 | 18.969 | Passenger | 36.00 | 2.9 | 201.0 | 109.9 | 72.1 | 189.8 | 3.600 | |

157 rows × 15 columns

In [19]:
```
data.isnull().sum()
```

Out[19]:
```
Manufacturer          0
Model                 0
Sales_in_thousands    0
Vehicle_type          0
Price_in_thousands    2
Engine_size           1
Horsepower            1
Wheelbase             1
Width                 1
Length                1
```

```
dtype: int64
```

In [20]:
```
data.dropna(axis=0,inplace=True)  # is  remove null values
```

In [21]:
```
data.isnull().sum()
```

Out[21]:
```
Manufacturer          0
Model                 0
Sales_in_thousands    0
Vehicle_type          0
Price_in_thousands    0
Engine_size           0
Horsepower            0
Wheelbase             0
Width                 0
Length                0
Curb_weight           0
Fuel_capacity         0
Fuel_efficiency       0
Latest_Launch         0
Power_perf_factor     0
dtype: int64
```

In [22]:
```
data
```

Out[22]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_capa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | Acura | Integra | 16.919 | Passenger | 21.50 | 1.8 | 140.0 | 101.2 | 67.3 | 172.4 | 2.639 | |
| **1** | Acura | TL | 39.384 | Passenger | 28.40 | 3.2 | 225.0 | 108.1 | 70.3 | 192.9 | 3.517 | |
| **3** | Acura | RL | 8.588 | Passenger | 42.00 | 3.5 | 210.0 | 114.6 | 71.4 | 196.6 | 3.850 | |
| **4** | Audi | A4 | 20.397 | Passenger | 23.99 | 1.8 | 150.0 | 102.6 | 68.2 | 178.0 | 2.998 | |
| **5** | Audi | A6 | 18.780 | Passenger | 33.95 | 2.8 | 200.0 | 108.7 | 76.1 | 192.0 | 3.561 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **152** | Volvo | V40 | 3.545 | Passenger | 24.40 | 1.9 | 160.0 | 100.5 | 67.6 | 176.6 | 3.042 | |
| **153** | Volvo | S70 | 15.245 | Passenger | 27.50 | 2.4 | 168.0 | 104.9 | 69.3 | 185.9 | 3.208 | |

In [32]:
```
1 data.dtypes
```

Out[32]:
```
Manufacturer          object
Model                 object
Sales_in_thousands   float64
Vehicle_type          object
Price_in_thousands   float64
Engine_size          float64
Horsepower           float64
Wheelbase            float64
Width                float64
Length               float64
Curb_weight          float64
Fuel_capacity        float64
Fuel_efficiency      float64
Latest_Launch         object
Power_perf_factor    float64
dtype: object
```

In [37]:
```
1 data[data['Price_in_thousands']>=50]
```

Out[37]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_cap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6** | Audi | A8 | 1.380 | Passenger | 62.000 | 4.2 | 310.0 | 113.0 | 74.0 | 198.2 | 3.902 | |
| **39** | Dodge | Viper | 0.916 | Passenger | 69.725 | 8.0 | 450.0 | 96.2 | 75.7 | 176.7 | 3.375 | |
| **73** | Lexus | LS400 | 6.375 | Passenger | 54.005 | 4.0 | 290.0 | 112.2 | 72.0 | 196.7 | 3.890 | |
| **74** | Lexus | LX470 | 9.126 | Car | 60.105 | 4.7 | 230.0 | 112.2 | 76.4 | 192.5 | 5.401 | |
| **94** | Mercedes-B | S-Class | 16.774 | Passenger | 69.700 | 4.3 | 275.0 | 121.5 | 73.1 | 203.1 | 4.133 | |
| **95** | Mercedes-B | SL-Class | 3.311 | Passenger | 82.600 | 5.0 | 302.0 | 99.0 | 71.3 | 177.1 | 4.125 | |
| **99** | Mercedes-B | CL500 | 0.954 | Passenger | 85.500 | 5.0 | 302.0 | 113.6 | 73.1 | 196.6 | 4.115 | |
| **125** | Porsche | Carrera Coupe | 1.280 | Passenger | 71.020 | 3.4 | 300.0 | 92.6 | 69.5 | 174.5 | 3.032 | |
| | | Carrera | | | | | | | | | | |

```
dtype: object
```

In [37]:
```
1 data[data['Price_in_thousands']>=50]
```

Out[37]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_cap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6** | Audi | A8 | 1.380 | Passenger | 62.000 | 4.2 | 310.0 | 113.0 | 74.0 | 198.2 | 3.902 | |
| **39** | Dodge | Viper | 0.916 | Passenger | 69.725 | 8.0 | 450.0 | 96.2 | 75.7 | 176.7 | 3.375 | |
| **73** | Lexus | LS400 | 6.375 | Passenger | 54.005 | 4.0 | 290.0 | 112.2 | 72.0 | 196.7 | 3.890 | |
| **74** | Lexus | LX470 | 9.126 | Car | 60.105 | 4.7 | 230.0 | 112.2 | 76.4 | 192.5 | 5.401 | |
| **94** | Mercedes-B | S-Class | 16.774 | Passenger | 69.700 | 4.3 | 275.0 | 121.5 | 73.1 | 203.1 | 4.133 | |
| **95** | Mercedes-B | SL-Class | 3.311 | Passenger | 82.600 | 5.0 | 302.0 | 99.0 | 71.3 | 177.1 | 4.125 | |
| **99** | Mercedes-B | CL500 | 0.954 | Passenger | 85.500 | 5.0 | 302.0 | 113.6 | 73.1 | 196.6 | 4.115 | |
| **125** | Porsche | Carrera Coupe | 1.280 | Passenger | 71.020 | 3.4 | 300.0 | 92.6 | 69.5 | 174.5 | 3.032 | |
| **126** | Porsche | Carrera Cabrio | 1.866 | Passenger | 74.970 | 3.4 | 300.0 | 92.6 | 69.5 | 174.5 | 3.075 | |
| **144** | Toyota | Land Cruiser | 9.835 | Car | 51.728 | 4.7 | 230.0 | 112.2 | 76.4 | 192.5 | 5.115 | |

In [41]:
```
1 data[data['Sales_in_thousands']>=120]
```

Out[41]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_c |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **19** | Chevrolet | Cavalier | 145.519 | Passenger | 13.260 | 2.2 | 115.0 | 104.1 | 67.9 | 180.9 | 2.676 | |
| **20** | Chevrolet | Malibu | 135.126 | Passenger | 16.535 | 3.1 | 170.0 | 107.0 | 69.4 | 190.4 | 3.051 | |
| **40** | Dodge | Ram Pickup | 227.061 | Car | 19.460 | 5.2 | 230.0 | 138.7 | 79.3 | 224.2 | 4.470 | |
| **45** | Dodge | Caravan | 181.749 | Car | 19.565 | 2.4 | 150.0 | 113.3 | 76.8 | 186.3 | 3.533 | |
| **49** | Ford | Taurus | 245.815 | Passenger | 17.885 | 3.0 | 155.0 | 108.5 | 73.0 | 197.6 | 3.368 | |

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In [41]:
```
1 data[data['Sales_in_thousands']>=120]
```

Out[41]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_c |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **19** | Chevrolet | Cavalier | 145.519 | Passenger | 13.260 | 2.2 | 115.0 | 104.1 | 67.9 | 180.9 | 2.676 | |
| **20** | Chevrolet | Malibu | 135.126 | Passenger | 16.535 | 3.1 | 170.0 | 107.0 | 69.4 | 190.4 | 3.051 | |
| **40** | Dodge | Ram Pickup | 227.061 | Car | 19.460 | 5.2 | 230.0 | 138.7 | 79.3 | 224.2 | 4.470 | |
| **45** | Dodge | Caravan | 181.749 | Car | 19.565 | 2.4 | 150.0 | 113.3 | 76.8 | 186.3 | 3.533 | |
| **49** | Ford | Taurus | 245.815 | Passenger | 17.885 | 3.0 | 155.0 | 108.5 | 73.0 | 197.6 | 3.368 | |
| **50** | Ford | Focus | 175.670 | Passenger | 12.315 | 2.0 | 107.0 | 103.0 | 66.9 | 174.8 | 2.564 | |
| **52** | Ford | Explorer | 276.747 | Car | 31.930 | 4.0 | 210.0 | 111.6 | 70.2 | 190.7 | 3.876 | |
| **53** | Ford | Windstar | 155.787 | Car | 21.410 | 3.0 | 150.0 | 120.7 | 76.6 | 200.9 | 3.761 | |
| **54** | Ford | Expedition | 125.338 | Car | 36.135 | 4.6 | 240.0 | 119.0 | 78.7 | 204.6 | 4.808 | |
| **55** | Ford | Ranger | 220.650 | Car | 12.050 | 2.5 | 119.0 | 117.5 | 69.4 | 200.7 | 3.086 | |
| **56** | Ford | F-Series | 540.561 | Car | 26.935 | 4.6 | 220.0 | 138.5 | 79.1 | 224.5 | 4.241 | |
| **57** | Honda | Civic | 199.685 | Passenger | 12.885 | 1.6 | 106.0 | 103.2 | 67.1 | 175.1 | 2.339 | |
| **58** | Honda | Accord | 230.902 | Passenger | 15.350 | 2.3 | 135.0 | 106.9 | 70.3 | 188.8 | 2.932 | |
| **69** | Jeep | Grand Cherokee | 157.040 | Car | 26.895 | 4.0 | 195.0 | 105.9 | 72.3 | 181.5 | 3.880 | |
| **119** | Pontiac | Grand Am | 131.097 | Passenger | 19.720 | 3.4 | 175.0 | 107.0 | 70.4 | 186.3 | 3.091 | |
| **136** | Toyota | Corolla | 142.535 | Passenger | 13.108 | 1.8 | 120.0 | 97.0 | 66.7 | 174.0 | 2.420 | |
| **137** | Toyota | Camry | 247.994 | Passenger | 17.518 | 2.2 | 133.0 | 105.2 | 70.1 | 188.5 | 2.998 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 137 | Toyota | Camry | 247.994 | Passenger | 17.518 | 2.2 | 133.0 | 105.2 | 70.1 | 188.5 | 2.998 |

In [42]:
```
data[data.Manufacturer=='Honda']  # only Honda company
```

Out[42]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_cap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 | Honda | Civic | 199.685 | Passenger | 12.885 | 1.6 | 106.0 | 103.2 | 67.1 | 175.1 | 2.339 | |
| 58 | Honda | Accord | 230.902 | Passenger | 15.350 | 2.3 | 135.0 | 106.9 | 70.3 | 188.8 | 2.932 | |
| 59 | Honda | CR-V | 73.203 | Car | 20.550 | 2.0 | 146.0 | 103.2 | 68.9 | 177.6 | 3.219 | |
| 60 | Honda | Passport | 12.855 | Car | 26.600 | 3.2 | 205.0 | 106.4 | 70.4 | 178.2 | 3.857 | |
| 61 | Honda | Odyssey | 76.029 | Car | 26.000 | 3.5 | 210.0 | 118.1 | 75.6 | 201.2 | 4.288 | |

In [43]:
```
data[data.Manufacturer=='BMW']
```

Out[43]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_capacit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | BMW | 323i | 19.747 | Passenger | 26.99 | 2.5 | 170.0 | 107.3 | 68.4 | 176.0 | 3.179 | 16. |
| 8 | BMW | 328i | 9.231 | Passenger | 33.40 | 2.8 | 193.0 | 107.3 | 68.5 | 176.0 | 3.197 | 16. |
| 9 | BMW | 528i | 17.527 | Passenger | 38.90 | 2.8 | 193.0 | 111.4 | 70.9 | 188.0 | 3.472 | 18. |

In [47]:
```
from matplotlib import style
from matplotlib import figure
```

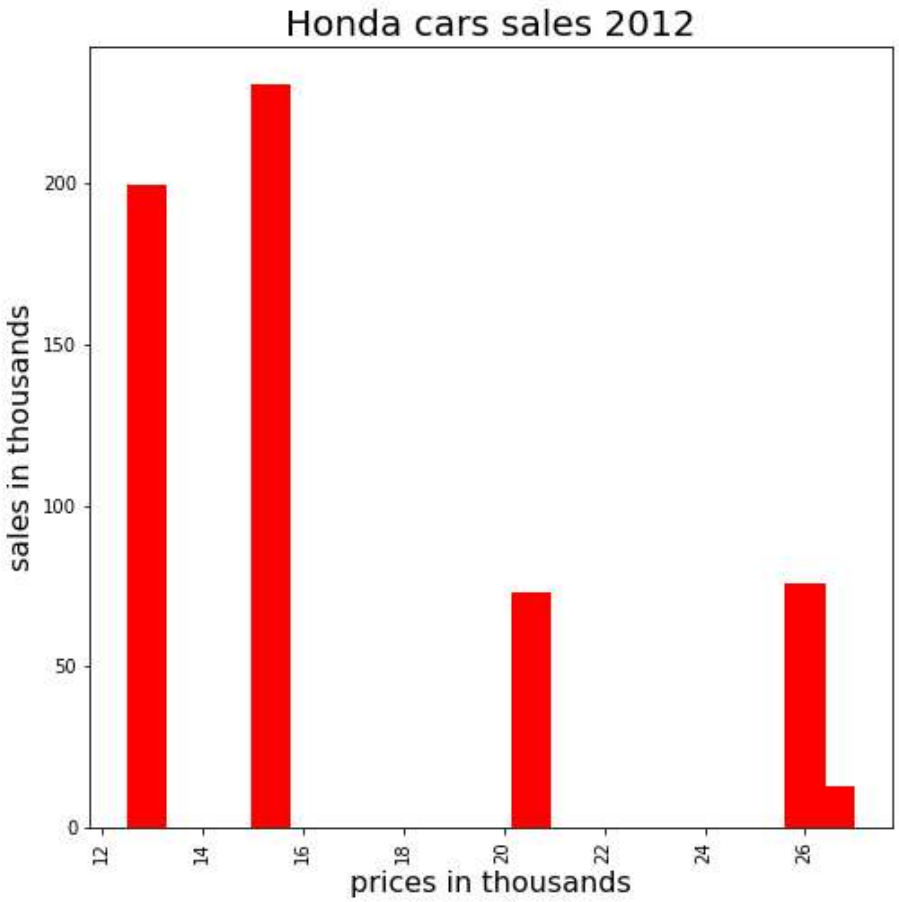
In [51]:
```
HONDA=data[data.Manufacturer=='Honda']
```

In [388]:
```
plt.bar(HONDA['Price_in_thousands'],HONDA['Sales_in_thousands'],color='r')
plt.title('Honda cars sales 2012',fontsize=20)
plt.ylabel('sales in thousands',fontsize=16)
plt.xlabel('prices in thousands',fontsize=16)
plt.gcf().set_size_inches(8,8)
plt.xticks(rotation=90)
```

In [47]:
```
from matplotlib import style
from matplotlib import figure
```

In [51]:
```
HONDA=data[data.Manufacturer=='Honda']
```

In [388]:
```
plt.bar(HONDA['Price_in_thousands'],HONDA['Sales_in_thousands'],color='r')
plt.title('Honda cars sales 2012',fontsize=20)
plt.ylabel('sales in thousands',fontsize=16)
plt.xlabel('prices in thousands',fontsize=16)
plt.gcf().set_size_inches(8,8)
plt.xticks(rotation=90)
plt.show()
```



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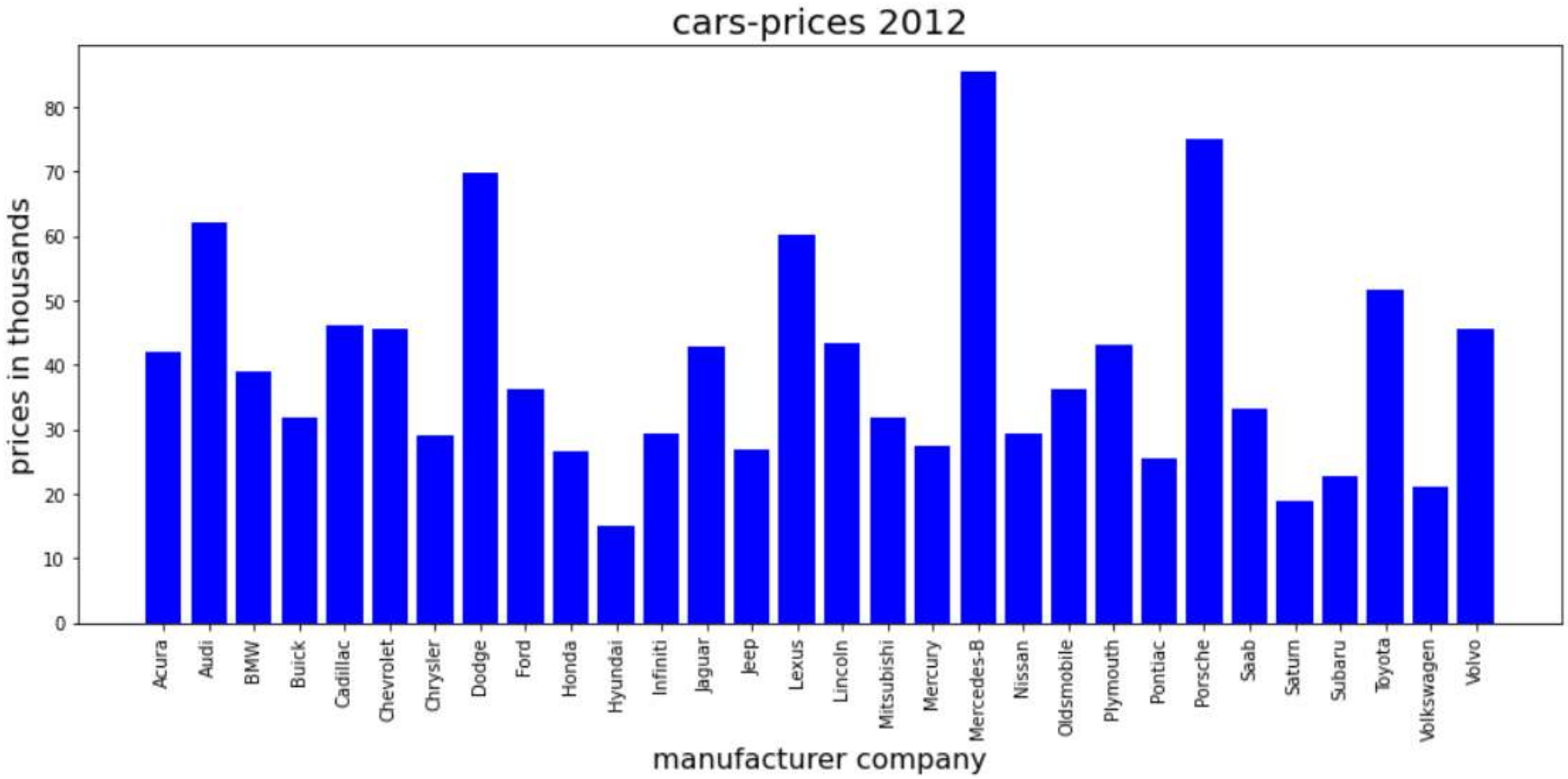
In [389]:

```
plt.bar(data['Manufacturer'],data['Price_in_thousands'],color='b')
plt.title('cars-prices 2012',fontsize=20)
plt.ylabel('prices in thousands',fontsize=16)
plt.xlabel('manufacturer company',fontsize=16)
plt.gcf().set_size_inches(15,6)
plt.xticks(rotation=90)
plt.show()
```



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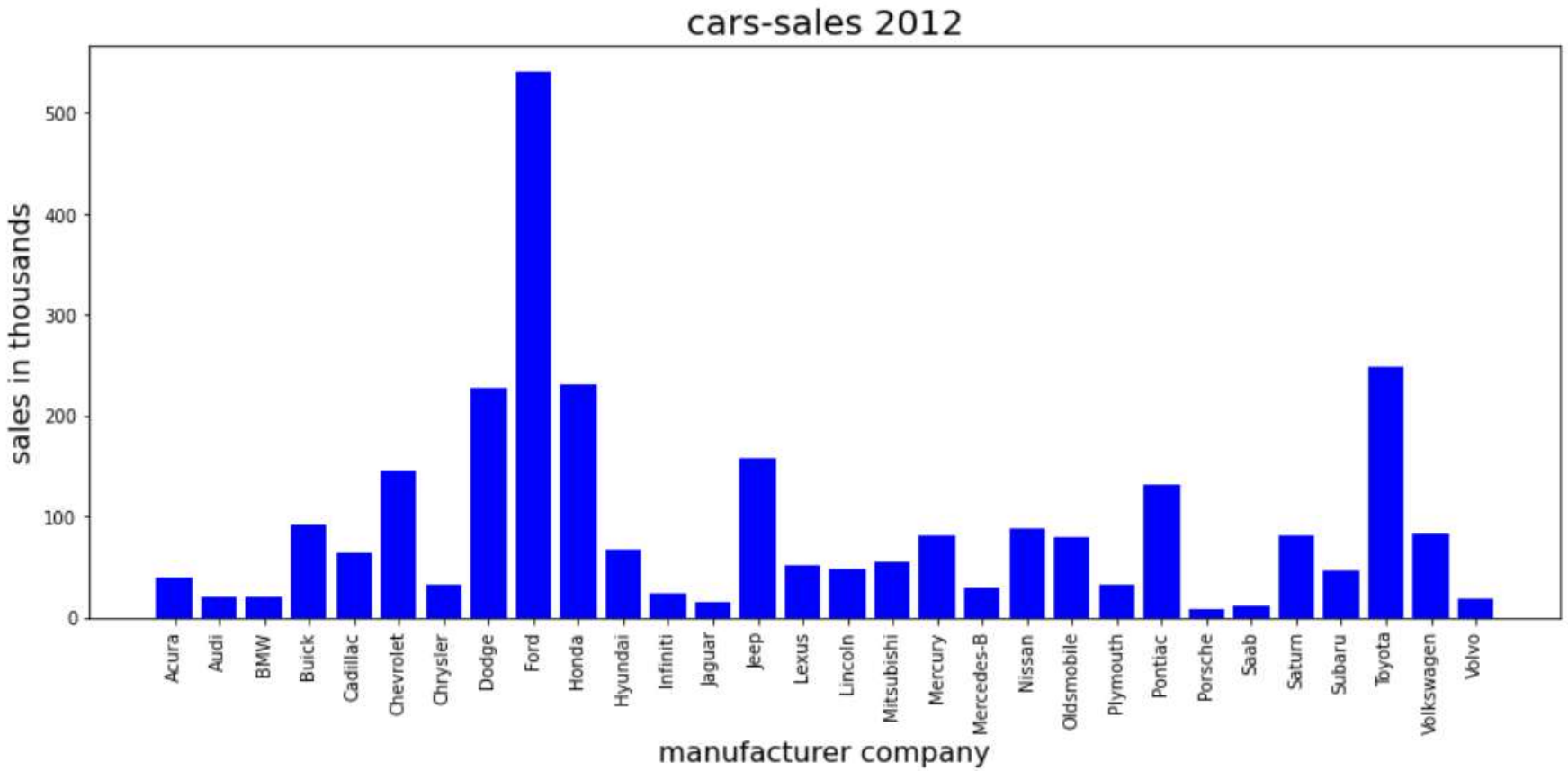
Run Code

In [381]:

```
plt.bar(data['Manufacturer'],data['Sales_in_thousands'],color='b')
plt.title('cars-sales 2012',fontsize=20)
plt.ylabel('sales in thousands',fontsize=16)
plt.xlabel('manufacturer company',fontsize=16)
plt.gcf().set_size_inches(15,6)
plt.xticks(rotation=90)
plt.show()
```



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Run Code

In [114]:
```
HONDA['Sales_in_thousands']

```

Out[114]:
```
57    199.685
58    230.902
59     73.203
60     12.855
61     76.029
Name: Sales_in_thousands, dtype: float64
```

In [115]:
```
HONDA
```

Out[115]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_cap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **57** | Honda | Civic | 199.685 | Passenger | 12.885 | 1.6 | 106.0 | 103.2 | 67.1 | 175.1 | 2.339 | |
| **58** | Honda | Accord | 230.902 | Passenger | 15.350 | 2.3 | 135.0 | 106.9 | 70.3 | 188.8 | 2.932 | |
| **59** | Honda | CR-V | 73.203 | Car | 20.550 | 2.0 | 146.0 | 103.2 | 68.9 | 177.6 | 3.219 | |
| **60** | Honda | Passport | 12.855 | Car | 26.600 | 3.2 | 205.0 | 106.4 | 70.4 | 178.2 | 3.857 | |
| **61** | Honda | Odyssey | 76.029 | Car | 26.000 | 3.5 | 210.0 | 118.1 | 75.6 | 201.2 | 4.288 | |

In [391]:
```
plt.barh(HONDA['Model'],HONDA['Price_in_thousands'],color='r')  # using plt.barh
plt.title('cars-prices 2012',fontsize=20)
plt.ylabel('prices in thousands',fontsize=16)
plt.xlabel('model',fontsize=16)
plt.gcf().set_size_inches(12,4)

plt.show()
```

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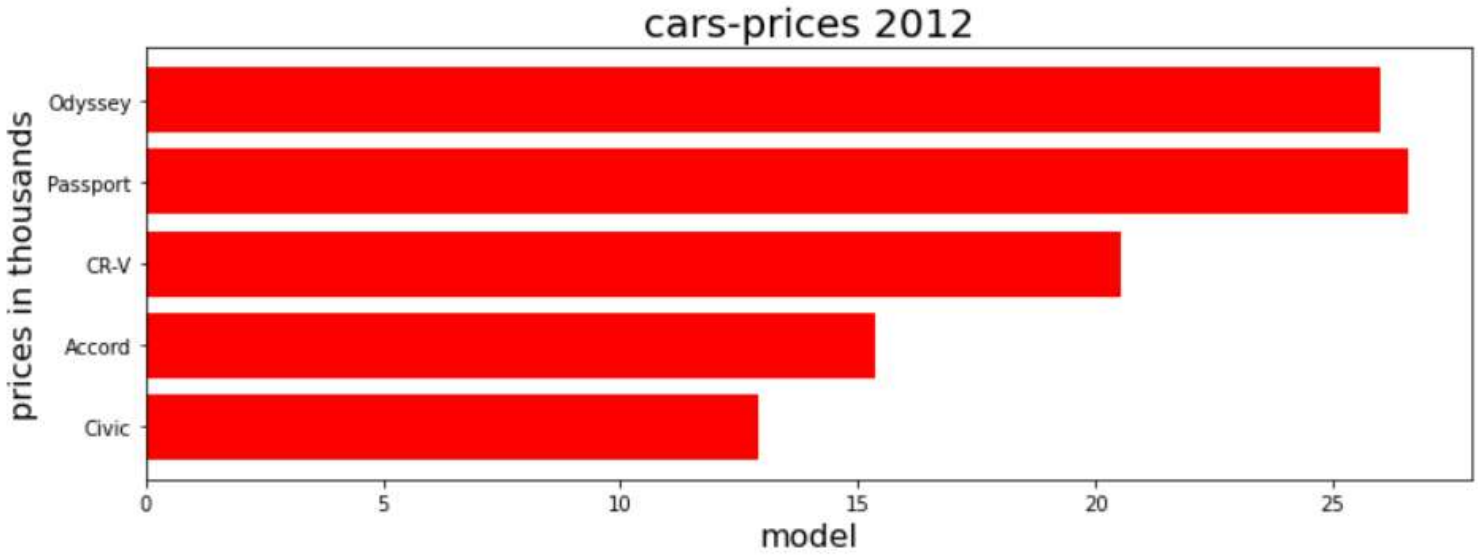
Run Code

In [391]:

```
plt.barh(HONDA['Model'],HONDA['Price_in_thousands'],color='r')  # using plt.barh
plt.title('cars-prices 2012',fontsize=20)
plt.ylabel('prices in thousands',fontsize=16)
plt.xlabel('model',fontsize=16)
plt.gcf().set_size_inches(12,4)

plt.show()
```



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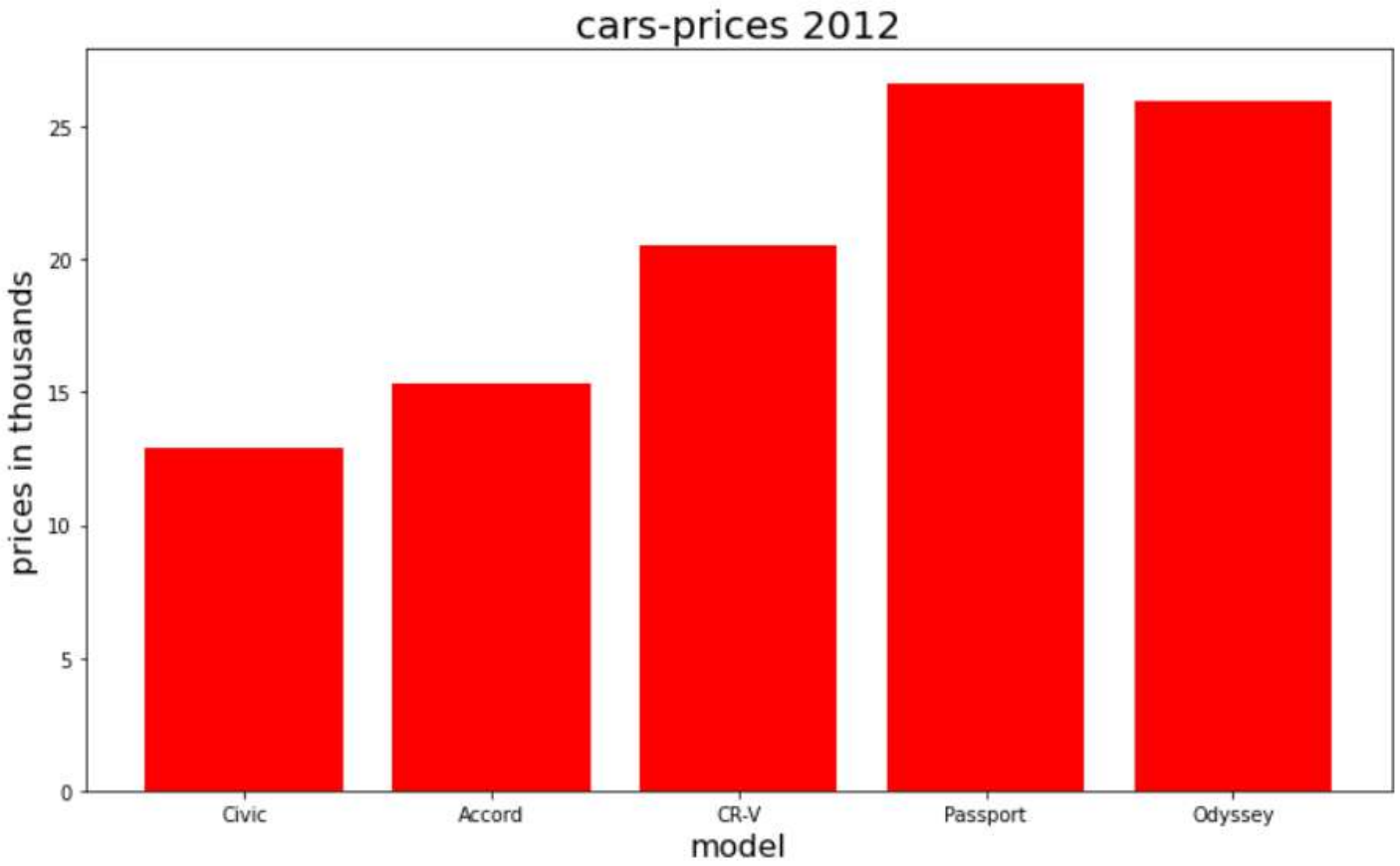
Trusted Python 3

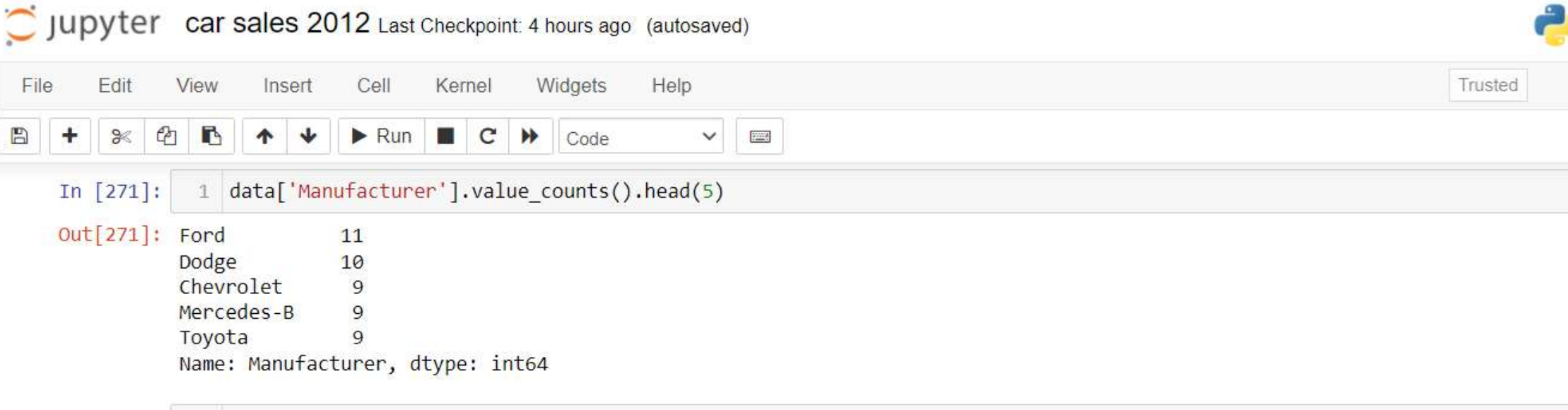
Run Code

In [392]:

```
plt.bar(HONDA['Model'],HONDA['Price_in_thousands'],color='r')  # using plt.barh
plt.title('cars-prices 2012',fontsize=20)
plt.ylabel('prices in thousands',fontsize=16)
plt.xlabel('model',fontsize=16)
plt.gcf().set_size_inches(12,7)

plt.show()
```

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Run
Code
In [271]:
1 data['Manufacturer'].value_counts().head(5)
Out[271]:
Ford 11
Dodge 10
Chevrolet 9
Mercedes-B 9
Toyota 9
Name: Manufacturer, dtype: int64

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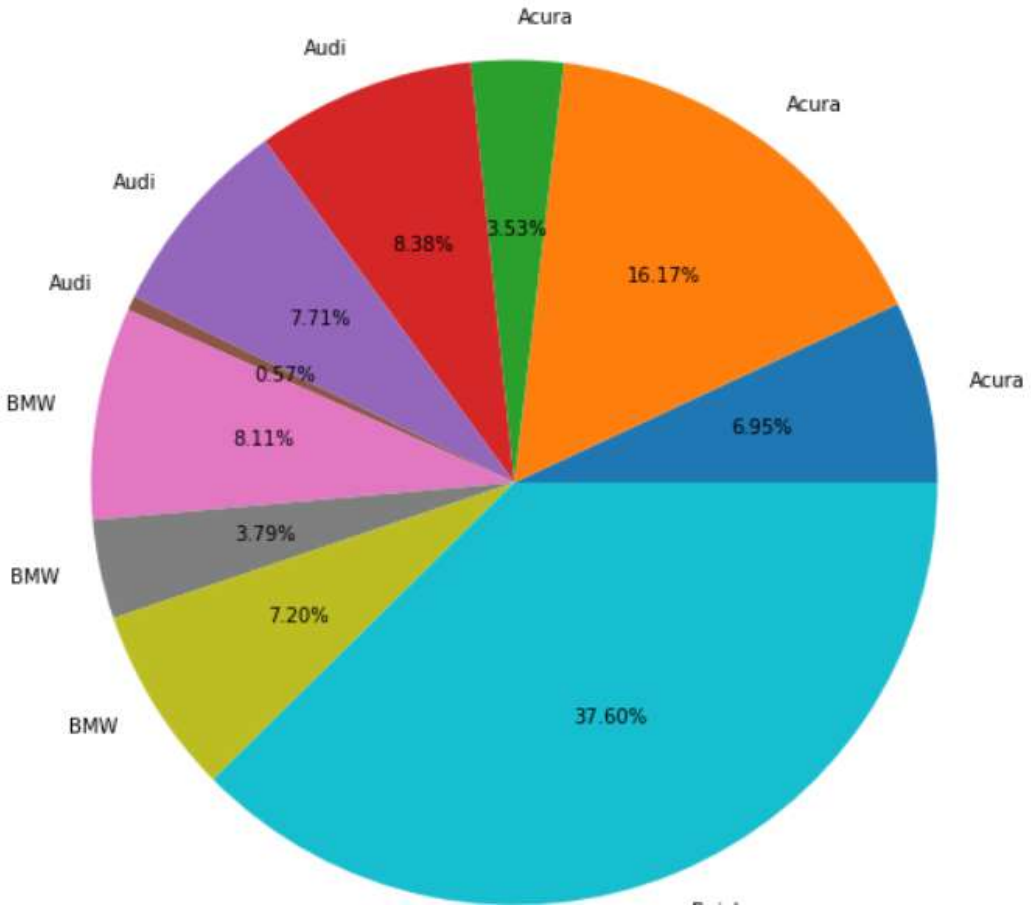
Trusted Python 3

Run Code

In [396]:

```
x=data['Manufacturer'].head(10)
y=data['Sales_in_thousands'].head(10)
plt.pie(y,labels=x,autopct='%2.2f%%')
plt.gcf().set_size_inches(10,10)
plt.show()
```



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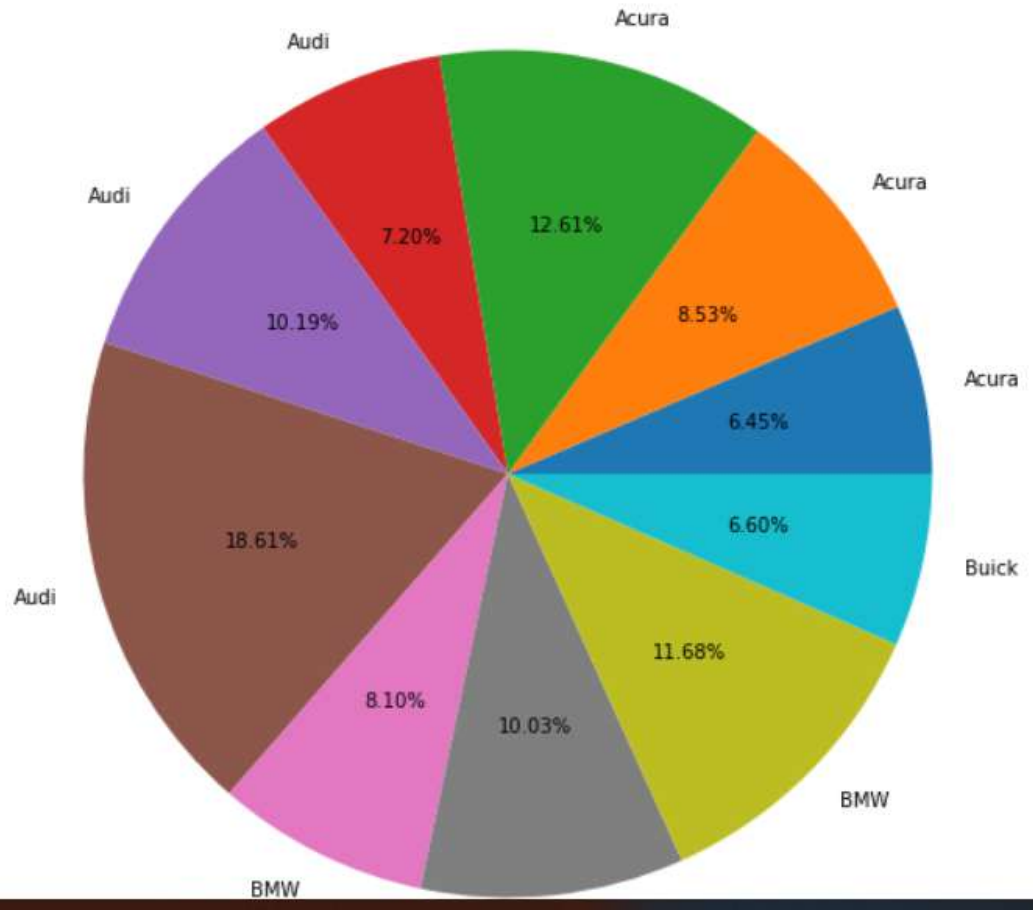
Trusted Python 3

Run Code

In [395]:

```
x=data['Price_in_thousands'].head(10)
y=data['Manufacturer'].head(10)
plt.pie(x,labels=y,autopct='%2.2f%%')
plt.gcf().set_size_inches(10,10)
plt.show()
```



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Trusted Python 3

Run Code

In [334]:
```
1 data
```

Out[334]:

| | Manufacturer | Model | Sales_in_thousands | Vehicle_type | Price_in_thousands | Engine_size | Horsepower | Wheelbase | Width | Length | Curb_weight | Fuel_capa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | Acura | Integra | 16.919 | Passenger | 21.50 | 1.8 | 140.0 | 101.2 | 67.3 | 172.4 | 2.639 | |
| **1** | Acura | TL | 39.384 | Passenger | 28.40 | 3.2 | 225.0 | 108.1 | 70.3 | 192.9 | 3.517 | |
| **3** | Acura | RL | 8.588 | Passenger | 42.00 | 3.5 | 210.0 | 114.6 | 71.4 | 196.6 | 3.850 | |
| **4** | Audi | A4 | 20.397 | Passenger | 23.99 | 1.8 | 150.0 | 102.6 | 68.2 | 178.0 | 2.998 | |
| **5** | Audi | A6 | 18.780 | Passenger | 33.95 | 2.8 | 200.0 | 108.7 | 76.1 | 192.0 | 3.561 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **152** | Volvo | V40 | 3.545 | Passenger | 24.40 | 1.9 | 160.0 | 100.5 | 67.6 | 176.6 | 3.042 | |
| **153** | Volvo | S70 | 15.245 | Passenger | 27.50 | 2.4 | 168.0 | 104.9 | 69.3 | 185.9 | 3.208 | |
| **154** | Volvo | V70 | 17.531 | Passenger | 28.80 | 2.4 | 168.0 | 104.9 | 69.3 | 186.2 | 3.259 | |
| **155** | Volvo | C70 | 3.493 | Passenger | 45.50 | 2.3 | 236.0 | 104.9 | 71.5 | 185.7 | 3.601 | |
| **156** | Volvo | S80 | 18.969 | Passenger | 36.00 | 2.9 | 201.0 | 109.9 | 72.1 | 189.8 | 3.600 | |

152 rows × 15 columns

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Trusted Python 3

Run Code

152 rows × 15 columns

In [402]:

```
x=data['Manufacturer'].head(80)
y=data['Sales_in_thousands'].head(80)
plt.xlabel('Manufacturer-company',fontsize=16)
plt.ylabel('Sales_in_thousands',fontsize=16)
plt.scatter(x,y,color='k')
plt.gcf().set_size_inches(15,4)
plt.show()
```