```python
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv('second_hand_cars.csv')
df.sample(4)
```

|	Company Name	Car Name	Variant	Fuel Type	Tyre Condition	Make Year	Owner Type	Registration Number	Mileage	Price	Transmission Type	Body Color	Service Record	Insu
2200	Nissan	Camry	LE	CNG	Used	2017	First	63-490-6659	18222	583656	Automatic (Tiptronic)	Maroon	Major Service at 149889 km	Vali
982	Nissan	Camry	XL	Diesel	Needs Replacement	2021	First	18-176-2046	137747	853519	Automatic	Maroon	No Service Record	No C Ins
2007	Hyundai	Swift	Highline	Diesel	Used	2024	First	18-783-2629	14829	537052	Manual	White	Major Service at 110951 km	Vali
2276	Volkswagen	Sunny	SE	CNG	Used	2016	First	91-573-2341	194124	361256	Automatic	Grey	No Service Record	Vali

```python
df.info()
df.isnull().sum()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2500 entries, 0 to 2499
Data columns (total 16 columns):
 #   Column                  Non-Null Count  Dtype
---  ------                  --------------  -----
 0   Company Name            2500 non-null   object
 1   Car Name                2500 non-null   object
 2   Variant                 2238 non-null   object
 3   Fuel Type               2500 non-null   object
 4   Tyre Condition          2500 non-null   object
 5   Make Year               2500 non-null   int64
 6   Owner Type              2500 non-null   object
 7   Registration Number     2500 non-null   object
 8   Mileage                 2500 non-null   int64
 9   Price                   2500 non-null   int64
 10  Transmission Type       2500 non-null   object
 11  Body Color              2500 non-null   object
 12  Service Record          2500 non-null   object
 13  Insurance               2500 non-null   object
 14  Registration Certificate 2500 non-null  object
 15  Accessories             2018 non-null   object
dtypes: int64(3), object(13)
memory usage: 312.6+ KB
Company Name                0
Car Name                    0
Variant                   262
Fuel Type                   0
Tyre Condition              0
Make Year                   0
Owner Type                  0
Registration Number         0
Mileage                     0
Price                       0
Transmission Type           0
Body Color                  0
Service Record              0
Insurance                   0
Registration Certificate    0
Accessories               482
dtype: int64
```

```python
Brand = df['Company Name'].value_counts()
plt.pie(Brand, labels=Brand.index,autopct='%1.1f%%')
plt.title("Sell Percentage of Car's Company ")
plt.show()
```
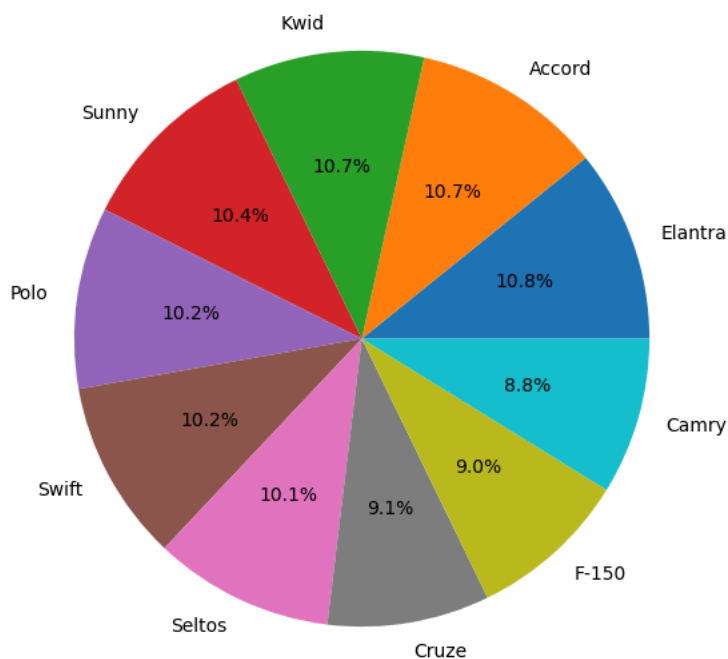
B

Sell Percentage of Car's Company
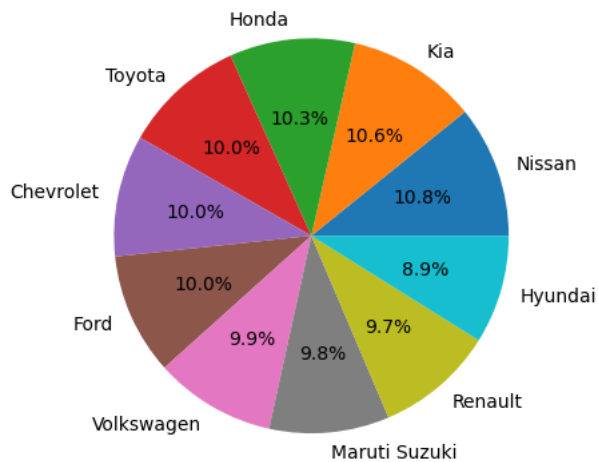

```python
cars_quantity = []
cars=list(set(df['Car Name']))
for x in df['Car Name'].value_counts():
    cars_quantity.append(x)

df['Car Name'].value_counts()

fig = plt.figure(figsize=(10, 7))
plt.pie(cars_quantity, labels=cars,autopct='%1.1f%%')
plt.title("Sell of Different Car's Models")
plt.show()
```

Sell of Different Car's Models


```python
variant = ['SE','RXE','GT','Highline','XL ','EX','LE','SL','ZXI']

for x in range(len(cars)):
    # print(f'{df[df['Car Name'] == cars[x]]['Variant'].value_counts()}')
    print(f"{df[df['Car Name'] == cars[x]]['Variant'].value_counts()}")
    fig = plt.figure(figsize=(10, 7))
    plt.pie(df[df['Car Name'] == cars[x]]['Variant'].value_counts(), labels=variant,autopct='%1.1f%%')
    plt.title(f"{cars[x]}'s Sell of Variants")
    plt.show()
```

```
Variant
SL          32
XL          28
Highline    27
EX          26
LE          25
RXE         24
ZXI         23
SE          20
GT          18
Name: count, dtype: int64
```

Elantra's Sell of Variants
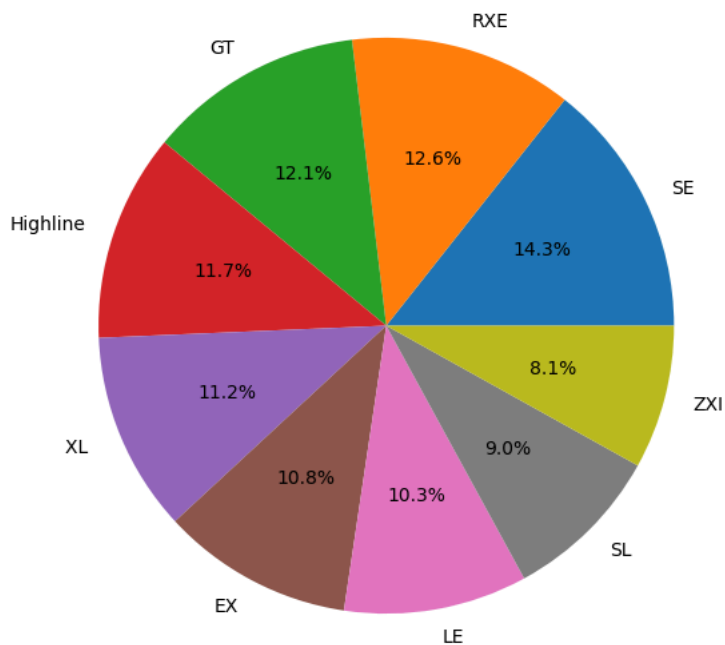

```
Variant
ZXI         42
XL          32
Highline    26
SL          23
LE          23
RXE         22
GT          22
SE          19
EX          17
Name: count, dtype: int64
```

Accord's Sell of Variants

```
owner = df['Owner Type'].value_counts()
plt.pie(owner,labels=owner.index,autopct='%1.1f%%')
plt.title("Owner's type")
plt.show()
```