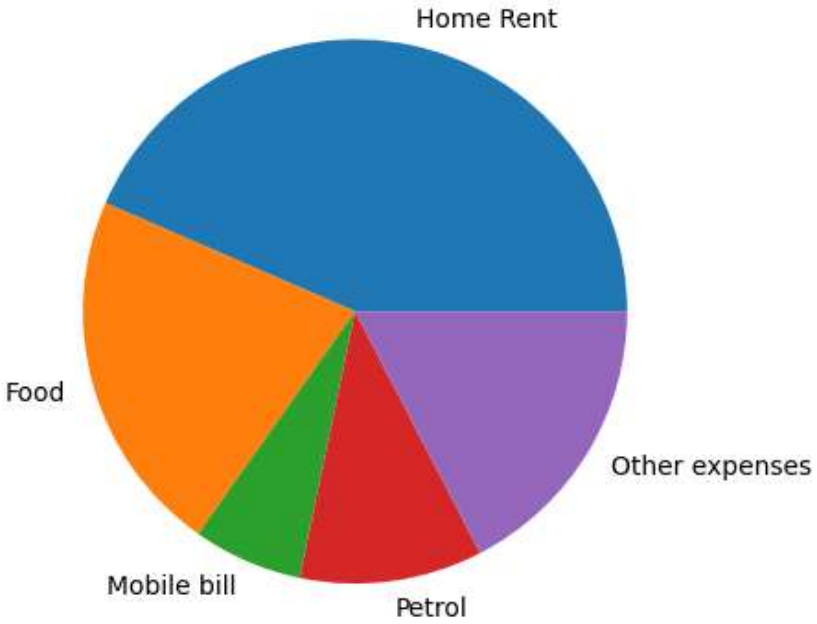
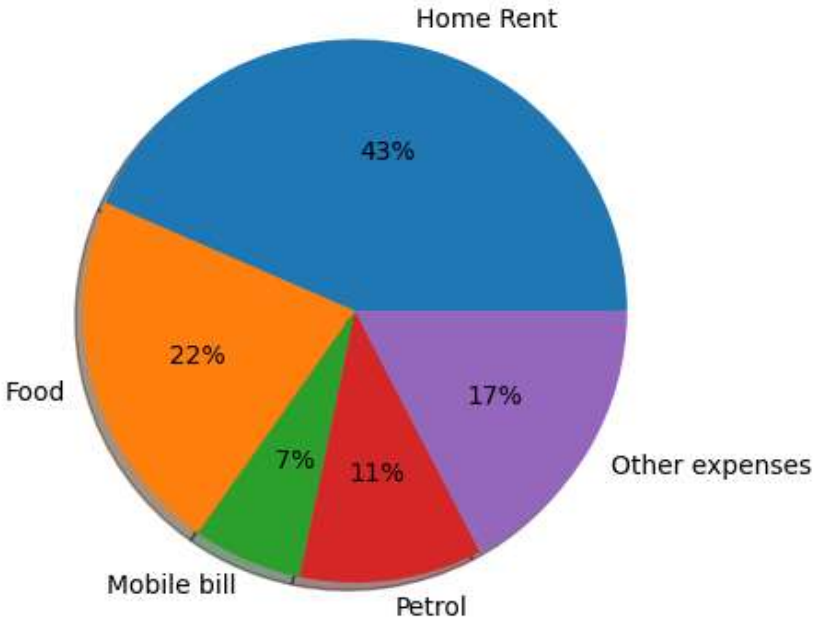
In [1]:
```
import matplotlib.pyplot as plt
```

In [3]:
```
exp_values = [2000,1000,300,500,800]
exp_labels = ["Home Rent","Food","Mobile bill","Petrol","Other expenses"]
```

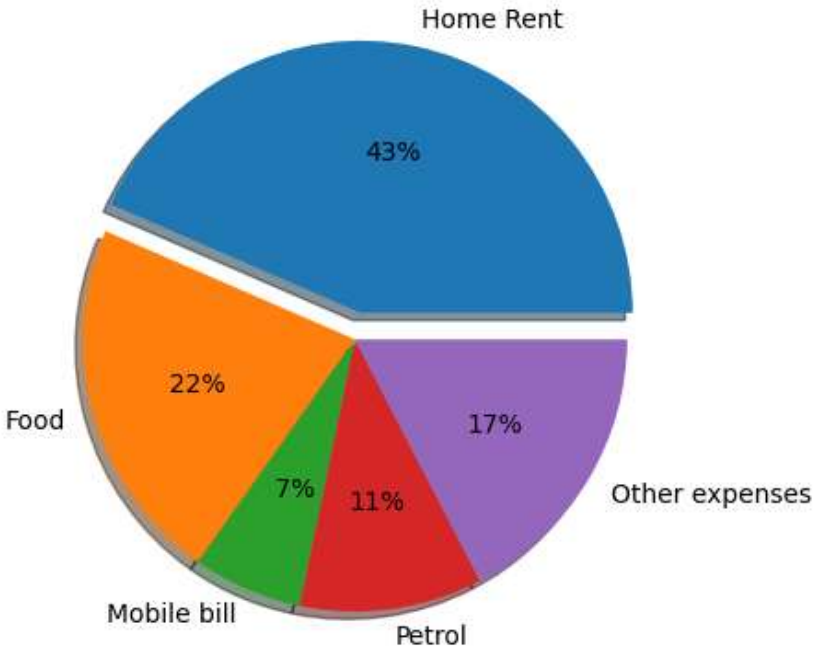
In [4]:
```
plt.pie(exp_values, labels= exp_labels)
plt.show()
```



In [13]:
```
plt.pie(exp_values, labels= exp_labels,shadow=True,radius=1,autopct='%2.0f%%')
plt.show()
```



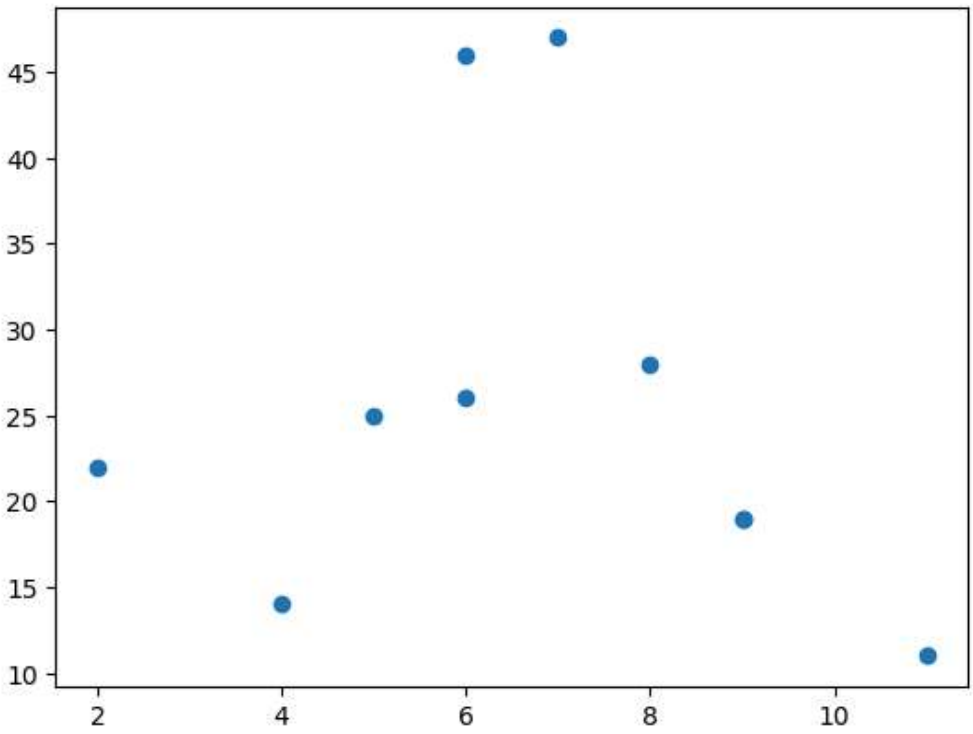
In [19]:
```
plt.pie(exp_values, labels= exp_labels,shadow=True,radius=1,autopct='%2.0f%%',explode=[0.
plt.show()
```



Scatter Chart

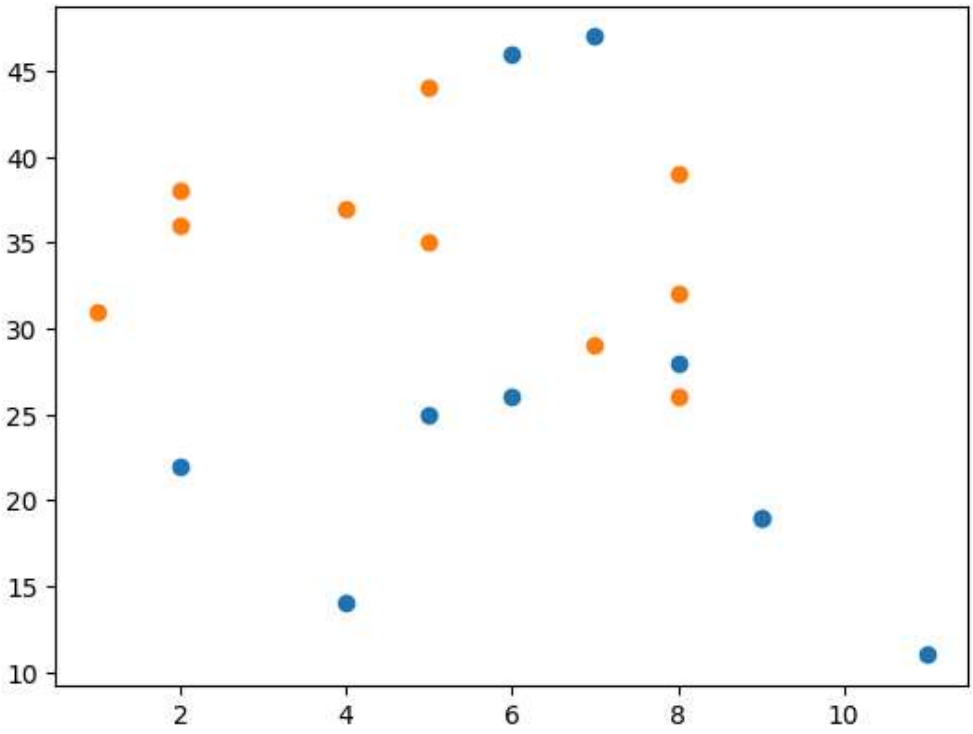
In [20]:
```
import numpy as np
```

In [21]:
```
x = np.array([6,7,8,9,4,6,2,11,5,9])
y = np.array([26,47,28,19,14,46,22,11,25,19])

plt.scatter(x,y)
plt.show()
```



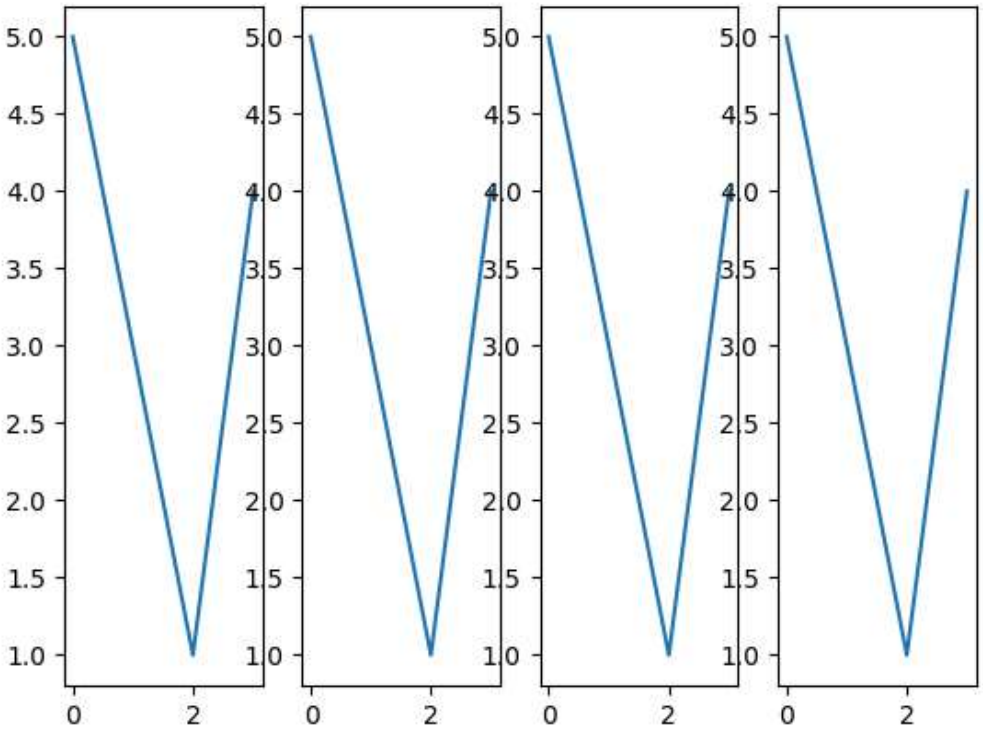
In [ ]:
```
# outlier detector
```

In [22]:
```
x = np.array([6,7,8,9,4,6,2,11,5,9])
y = np.array([26,47,28,19,14,46,22,11,25,19])

plt.scatter(x,y)
x1 = np.array([2,4,2,7,5,8,8,1,5,8])
y1 = np.array([36,37,38,29,44,26,32,31,35,39])
plt.scatter(x1,y1)
plt.show()
```




```
## Subplot
```

In [28]:
```
z1 = np.array([0,1,2,3])
z2 = np.array([5,3,1,4])

plt.subplot(1,4,1)
plt.plot(z1,z2)

z3 = np.array([0,1,2,3])
z4 = np.array([5,3,1,4])

plt.subplot(1,4,2)
plt.plot(z3,z4)

z5 = np.array([0,1,2,3])
z6 = np.array([5,3,1,4])

plt.subplot(1,4,3)
plt.plot(z5,z6)

z7 = np.array([0,1,2,3])
z8 = np.array([5,3,1,4])

plt.subplot(1,4,4)
plt.plot(z7,z8)
plt.show()
```

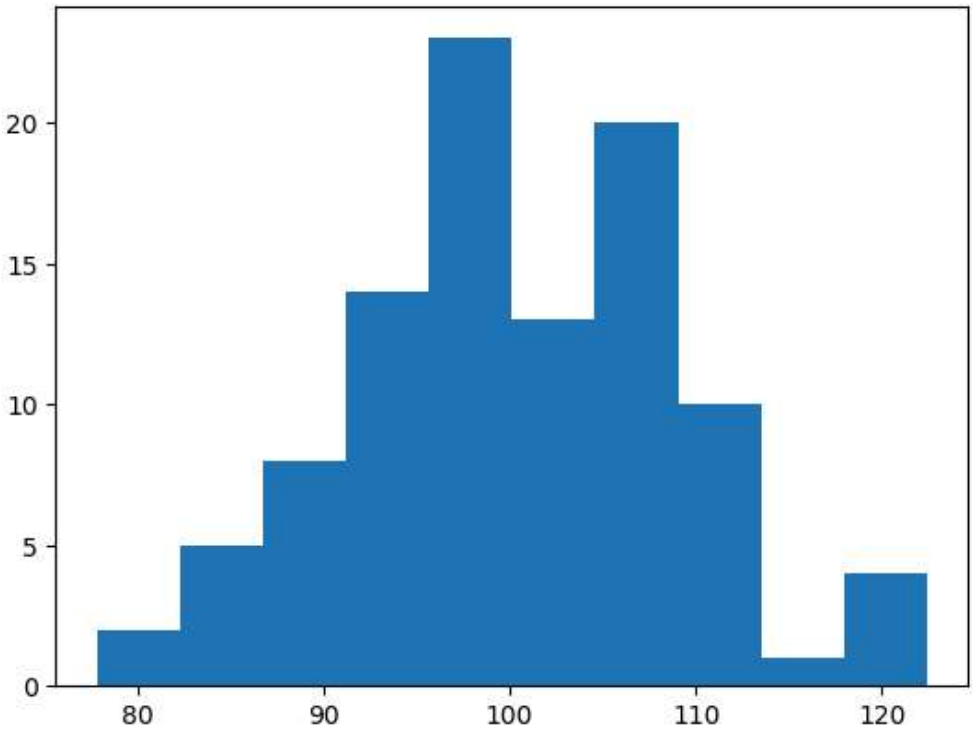


Histrogram

In [35]:
```
x = np.random.normal(100,10,100)
x
```

Out[35]:
```
array([ 96.05186571, 113.40267057, 105.95774438,  94.0260581 ,
        93.00170361,  97.7018842 , 100.09361305,  99.56591998,
       111.49866241,  85.75863583, 104.82728694, 103.14885779,
       102.13172595,  93.11384561, 107.55318078,  99.25049466,
        95.5440471 , 106.43570885,  90.47085593,  98.35268492,
       110.4758783 ,  85.31923973,  93.54255967,  99.48178323,
       121.03992709,  98.53413953, 118.03092598, 104.88851359,
        87.3122187 , 108.62733994,  91.38711737, 108.42205788,
       105.00013658, 102.25966197,  99.31155441, 118.96551809,
        98.62187732,  93.47002725,  93.15137489, 110.2732397 ,
        96.3185733 ,  99.13371156, 102.76385703,  93.33243856,
        90.16098611, 102.80213467,  77.85047777,  98.47491766,
       102.58457021, 105.51902932,  97.08138372, 105.3579533 ,
        99.68987803, 107.53269646,  82.82823087, 108.0012414 ,
        98.68775778,  95.70291932, 100.6632775 , 102.90756796,
        99.93741369, 103.93336801, 112.43857424,  91.08014116,
       114.14201206, 110.47996372, 105.76472611,  89.81153481,
       110.01880716, 104.96459479, 104.71283873, 112.0727133 ,
        87.6087387 ,  94.11556245, 103.39289674, 101.01199783,
       110.61596285, 104.59760162,  88.06686775,  92.37237306,
        99.13064749,  98.71265995,  91.81615868, 108.88386869,
       108.32897384,  90.69861697, 103.77551238, 106.68845166,
       107.18353753, 111.16606574,  93.08613883,  81.36296997,
        95.30643583,  98.38407662,  82.91723082,  86.24693394,
       101.74059718, 122.40480378,  97.50409524,  96.42415161])
```

In [37]:
```
plt.hist(x)
plt.show()
```



In [38]:
```
import pandas as pd
```

In [39]:
```
df = pd.read_csv("gas_prices.csv")
```

In [40]:
```
df
```

Out[40]:

	Year	Australia	Canada	France	Germany	Italy	Japan	Mexico	South Korea	UK	USA
0	1990	NaN	1.87	3.63	2.65	4.59	3.16	1.00	2.05	2.82	1.16
1	1991	1.96	1.92	3.45	2.90	4.50	3.46	1.30	2.49	3.01	1.14
2	1992	1.89	1.73	3.56	3.27	4.53	3.58	1.50	2.65	3.06	1.13
3	1993	1.73	1.57	3.41	3.07	3.68	4.16	1.56	2.88	2.84	1.11
4	1994	1.84	1.45	3.59	3.52	3.70	4.36	1.48	2.87	2.99	1.11
5	1995	1.95	1.53	4.26	3.96	4.00	4.43	1.11	2.94	3.21	1.15
6	1996	2.12	1.61	4.41	3.94	4.39	3.64	1.25	3.18	3.34	1.23
7	1997	2.05	1.62	4.00	3.53	4.07	3.26	1.47	3.34	3.83	1.23
8	1998	1.63	1.38	3.87	3.34	3.84	2.82	1.49	3.04	4.06	1.06
9	1999	1.72	1.52	3.85	3.42	3.87	3.27	1.79	3.80	4.29	1.17
10	2000	1.94	1.86	3.80	3.45	3.77	3.65	2.01	4.18	4.58	1.51
11	2001	1.71	1.72	3.51	3.40	3.57	3.27	2.20	3.76	4.13	1.46
12	2002	1.76	1.69	3.62	3.67	3.74	3.15	2.24	3.84	4.16	1.36
13	2003	2.19	1.99	4.35	4.59	4.53	3.47	2.04	4.11	4.70	1.59
14	2004	2.72	2.37	4.99	5.24	5.29	3.93	2.03	4.51	5.56	1.88
15	2005	3.23	2.89	5.46	5.66	5.74	4.28	2.22	5.28	5.97	2.30
16	2006	3.54	3.26	5.88	6.03	6.10	4.47	2.31	5.92	6.36	2.59
17	2007	3.85	3.59	6.60	6.88	6.73	4.49	2.40	6.21	7.13	2.80
18	2008	4.45	4.08	7.51	7.75	7.63	5.74	2.45	5.83	7.42	3.27

In [45]:
```
df.Year[::3]
```

Out[45]:
```
0     1990
3     1993
6     1996
9     1999
12    2002
15    2005
18    2008
Name: Year, dtype: int64
```

In [ ]:
```

```