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

In [2]:
```
pwd
```

Out[2]:
```
'/Users/jatin/Documents/DAV/Practicles'
```

In [3]:
```
ls
```

```
Datasets/           Prac3.ipynb         Prac8 - Sheet1.csv  delete.pdf
PDFS/               Prac4.ipynb         Prac8.ipynb         prac7.csv
PYQ_Q2.csv          Prac5.ipynb         Prac_4_Sheet.csv
PYQ_Q4.csv          Prac6.ipynb         Practicle_1.ipynb
Prac2.ipynb         Prac7.ipynb         delete.ipynb
```

In [4]:
```
df=pd.read_csv("Prac8 - Sheet1.csv")
```

In [5]:
```
df
```

Out[5]:

	Name	Gender	Monthly Income (Rs.)
0	Shah	Male	114,000.00
1	Vats	Male	65,000.00
2	Vats	Female	43,150.00
3	Kumar	Female	69,500.00
4	Vats	Female	155,000.00
5	Kumar	Male	103,000.00
6	Shah	Male	55,000.00
7	Shah	Female	112,400.00
8	Kumar	Female	81,030.00
9	Vats	Male	71,900.00

Write a program in Python using Pandas to perform the following:

a. Calculate and display familywise gross monthly income.
b. Calculate and display the member with the highest monthly income in a family.
c. Calculate and display monthly income of all members with income greater than Rs. 60000.00.
d. Calculate and display the average monthly income of the female members in the Shah family.

In [6]:
```
df.describe()
```

Out[6]:

	Name	Gender	Monthly Income (Rs.)
count	10	10	10
unique	3	2	10
top	Vats	Male	114,000.00
freq	4	5	1

In [7]:
```
df['Monthly Income (Rs.)']=df['Monthly Income (Rs.)'].apply(lambda x:x.r
```

In [8]:
```
df
```

Out[8]:

	Name	Gender	Monthly Income (Rs.)
0	Shah	Male	114000.00
1	Vats	Male	65000.00
2	Vats	Female	43150.00
3	Kumar	Female	69500.00
4	Vats	Female	155000.00
5	Kumar	Male	103000.00
6	Shah	Male	55000.00
7	Shah	Female	112400.00
8	Kumar	Female	81030.00
9	Vats	Male	71900.00

In [9]:
```
df['Monthly Income (Rs.)']=df['Monthly Income (Rs.)'].apply(pd.to_numeri
```

In [10]:
```
df
```

Out[10]:

	Name	Gender	Monthly Income (Rs.)
0	Shah	Male	114000.0
1	Vats	Male	65000.0
2	Vats	Female	43150.0
3	Kumar	Female	69500.0
4	Vats	Female	155000.0
5	Kumar	Male	103000.0
6	Shah	Male	55000.0
7	Shah	Female	112400.0
8	Kumar	Female	81030.0
9	Vats	Male	71900.0

In [11]:
```
df.describe()
```

Out[11]:

	Monthly Income (Rs.)
count	10.000000
mean	86998.000000
std	33755.465994
min	43150.000000
25%	66125.000000
50%	76465.000000
75%	110050.000000
max	155000.000000

a. Calculate and display familywise gross monthly income.

In [12]:
```
df.groupby(by="Name").sum(numeric_only=1)
```

Out[12]:

	Monthly Income (Rs.)
Name	
Kumar	253530.0
Shah	281400.0
Vats	335050.0

b. Calculate and display the member with the highest monthly income in a family.

In [13]:
```
df.groupby(by="Name").max()
```

Out[13]:

	Gender	Monthly Income (Rs.)
Name		
Kumar	Male	103000.0
Shah	Male	114000.0
Vats	Male	155000.0

c. Calculate and display monthly income of all members with income greater than Rs. 60000.00.

In [14]:
```
df.groupby(by="Name").apply(lambda x:x[x['Monthly Income (Rs.)']>60000.0
```

Out[14]:

		Name	Gender	Monthly Income (Rs.)
Name				
Kumar	**3**	Kumar	Female	69500.0
	5	Kumar	Male	103000.0
	8	Kumar	Female	81030.0
Shah	**0**	Shah	Male	114000.0
	7	Shah	Female	112400.0
Vats	**1**	Vats	Male	65000.0
	4	Vats	Female	155000.0
	9	Vats	Male	71900.0

d. Calculate and display the average monthly income of the female members in the Shah family.

In [15]:
```
df.groupby(by="Name").apply(lambda x:x[x['Gender']=='Female'])
```

Out[15]:

		Name	Gender	Monthly Income (Rs.)
Name				
Kumar	**3**	Kumar	Female	69500.0
	8	Kumar	Female	81030.0
Shah	**7**	Shah	Female	112400.0
Vats	**2**	Vats	Female	43150.0
	4	Vats	Female	155000.0

In [16]:
```
df.groupby(by="Name").apply(lambda x:x[x['Gender']=='Female'].mean(numer
```

Out[16]:

	Monthly Income (Rs.)
Name	
Kumar	75265.0
Shah	112400.0
Vats	99075.0

In [ ]:
```

```