

PRACTICAL - 08

8. Consider the following data frame containing a family name, gender of the family member and her/his monthly income in each record. Name Gender MonthlyIncome (Rs.)

Name	Gender	MonthlyIncome (Rs.)
Shah	Male	114000.00
Vats	Male	65000.00
Vats	Female	43150.00
Kumar	Female	69500.00
Vats	Female	155000.00
Kumar	Male	103000.00
Shah	Male	55000.00
Shah	Female	112400.00
Kumar	Female	81030.00
Vats	Male	71900.00

CODE :

```
[1] import numpy as np
import pandas as pd
✓ 3.3s
```

```
[2] data={'Name':['Shah','Vats','Vats','Kumar','Vats','Kumar','Shah','Shah','Kumar','Vats'],
      'Gender':['Male','Male','Female','Female','Female','Male','Male','Female','Female','Male'],
      'MonthlyIncome (Rs.)':[114000.00,65000.00,43150.00,69500.00,155000.00,
                             103000.00,55000.00,112400.00,81030.00,71900.00]}
df=pd.DataFrame(data)
df
[2] ✓ 0.0s
```

```
...
   Name  Gender  MonthlyIncome (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
```

- a. Calculate and display familywise gross monthly income.

```
familywise_income=df.groupby('Name')['MonthlyIncome (Rs.)'].sum()
print("Familywise Gross Monthly Income:")
print(familywise_income)
```

[3] ✓ 0.0s

```
... Familywise Gross Monthly Income:
Name
Kumar    253530.0
Shah     281400.0
Vats     335050.0
Name: MonthlyIncome (Rs.), dtype: float64
```

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

```
max_income=df.groupby('Name')['MonthlyIncome (Rs.)'].idxmax()
highest_income=df.loc[max_income]
print("Member with Highest Monthly Income in each Family:")
print(highest_income)
```

[5] ✓ 0.0s

```
... Member with Highest Monthly Income in each Family:
   Name  Gender  MonthlyIncome (Rs.)
5  Kumar   Male    103000.0
0  Shah   Male    114000.0
4  Vats  Female    155000.0
```

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

```
high_income_members=df[df['MonthlyIncome (Rs.)']>60000.00]
print("Monthly Income of members with Income > Rs. 60000.00:")
print(high_income_members[['Name','MonthlyIncome (Rs.)']])
```

[6] ✓ 0.0s

```
... Monthly Income of members with Income > Rs. 60000.00:
   Name  MonthlyIncome (Rs.)
0  Shah    114000.0
1  Vats     65000.0
3  Kumar    69500.0
4  Vats    155000.0
5  Kumar    103000.0
7  Shah    112400.0
8  Kumar     81030.0
9  Vats     71900.0
```

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

```
shah_fam_avg_income=df[(df['Name']=='Shah')&(df['Gender']=='Female')][['MonthlyIncome (Rs.)']].mean()  
print("Average Monthly Income of Female Members in Shsh Family:",shah_fam_avg_income)
```

[7] ✓ 0.0s

... Average Monthly Income of Female Members in Shsh Family: 112400.0