1. Import Necessary Packages

In [11]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as  plt
```

2. Load the File

In [9]:
```
income_df=pd.read_csv(r"C:\Users\admin\Desktop\Data Science 7pm/12th Sep-Inc_Exp_Da
```

In [12]:
```
income_df.head()
```

Out[12]:

	Mthly_HH_Income	Mthly_HH_Expense	No_of_Fly_Members	Emi_or_Rent_Amt	Annual_HH
0	5000	8000	3	2000	
1	6000	7000	2	3000	
2	10000	4500	2	0	
3	10000	2000	1	0	
4	12500	12000	2	3000	

3. Analyze the Data

In [10]:
```
income_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 50 entries, 0 to 49
Data columns (total 7 columns):
 #   Column                  Non-Null Count  Dtype 
---  ------                  --------------  ----- 
 0   Mthly_HH_Income         50 non-null     int64 
 1   Mthly_HH_Expense        50 non-null     int64 
 2   No_of_Fly_Members       50 non-null     int64 
 3   Emi_or_Rent_Amt         50 non-null     int64 
 4   Annual_HH_Income        50 non-null     int64 
 5   Highest_Qualified_Member  50 non-null     object
 6   No_of_Earning_Members   50 non-null     int64 
dtypes: int64(6), object(1)
memory usage: 2.9+ KB
```

In [13]:
```
income_df.shape
```

Out[13]: (50, 7)

In [14]:
```
income_df.describe().T
```

Out[14]:

	count	mean	std	min	25%	50%	
Mthly_HH_Income	50.0	41558.00	26097.908979	5000.0	23550.0	35000.0	50
Mthly_HH_Expense	50.0	18818.00	12090.216824	2000.0	10000.0	15500.0	25
No_of_Fly_Members	50.0	4.06	1.517382	1.0	3.0	4.0	
Emi_or_Rent_Amt	50.0	3060.00	6241.434948	0.0	0.0	0.0	3
Annual_HH_Income	50.0	490019.04	320135.792123	64200.0	258750.0	447420.0	594
No_of_Earning_Members	50.0	1.46	0.734291	1.0	1.0	1.0	

In [15]:
```
income_df.isna().any()
```

Out[15]:
```
Mthly_HH_Income             False
Mthly_HH_Expense            False
No_of_Fly_Members           False
Emi_or_Rent_Amt             False
Annual_HH_Income            False
Highest_Qualified_Member    False
No_of_Earning_Members       False
dtype: bool
```

4. What is the Mean Expense of a Household?

In [18]:
```
income_df["Mthly_HH_Expense"].mean()
```

Out[18]:
```
np.float64(18818.0)
```

5. What is the Median Household Expense?

In [20]:
```
income_df["Mthly_HH_Expense"].median()
```

Out[20]:
```
15500.0
```

6. What is the Monthly Expense for Most of the Households?

In [24]:
```
mth_exp_tmp = pd.crosstab(index=income_df["Mthly_HH_Expense"], columns="count")
mth_exp_tmp.reset_index(inplace=True)

mth_exp_tmp[mth_exp_tmp['count'] == income_df["Mthly_HH_Expense"].value_counts().ma
```

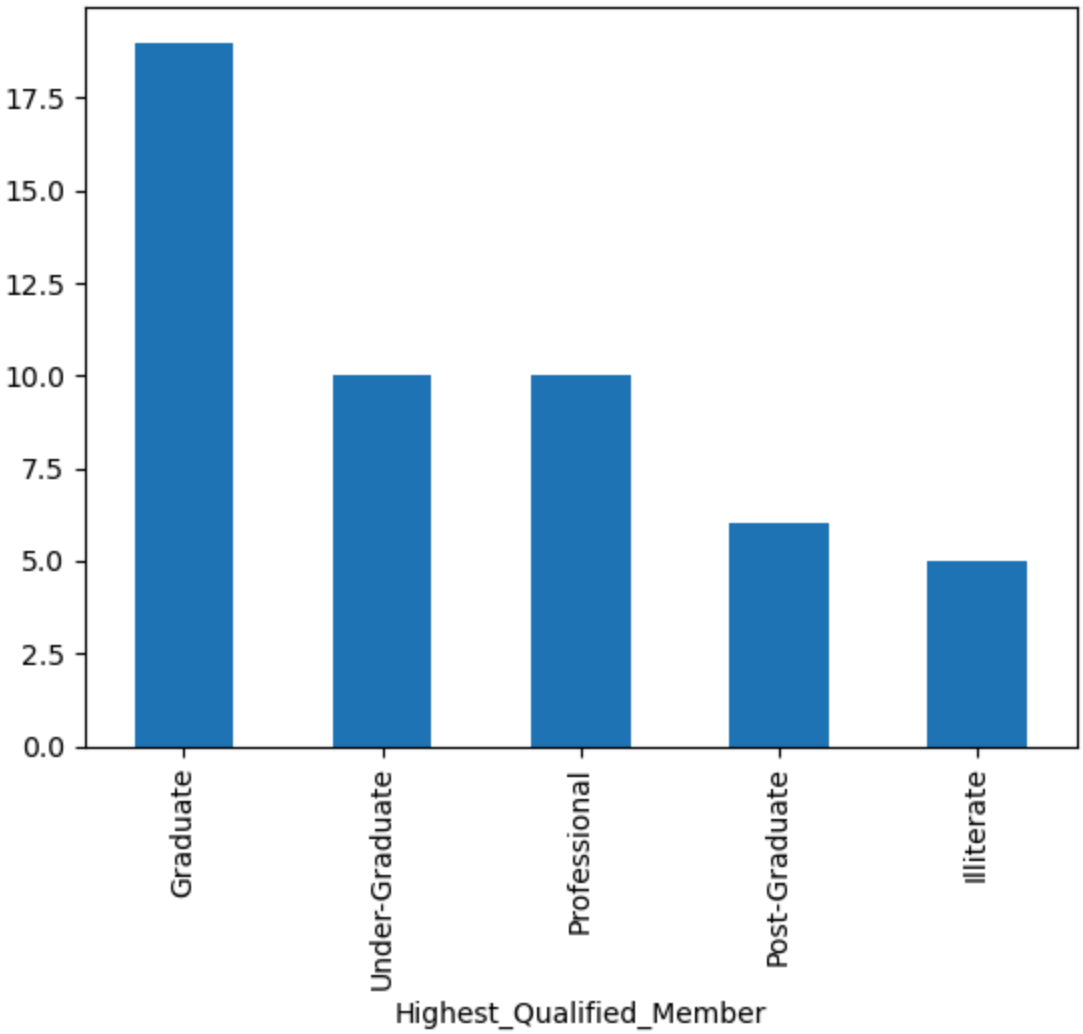
Out[24]:

col_0	Mthly_HH_Expense	count
18	25000	8

7. Plot the Histogram to count the Highest Qualified Member

In [25]:
```
income_df["Highest_Qualified_Member"].value_counts().plot(kind="bar")
```

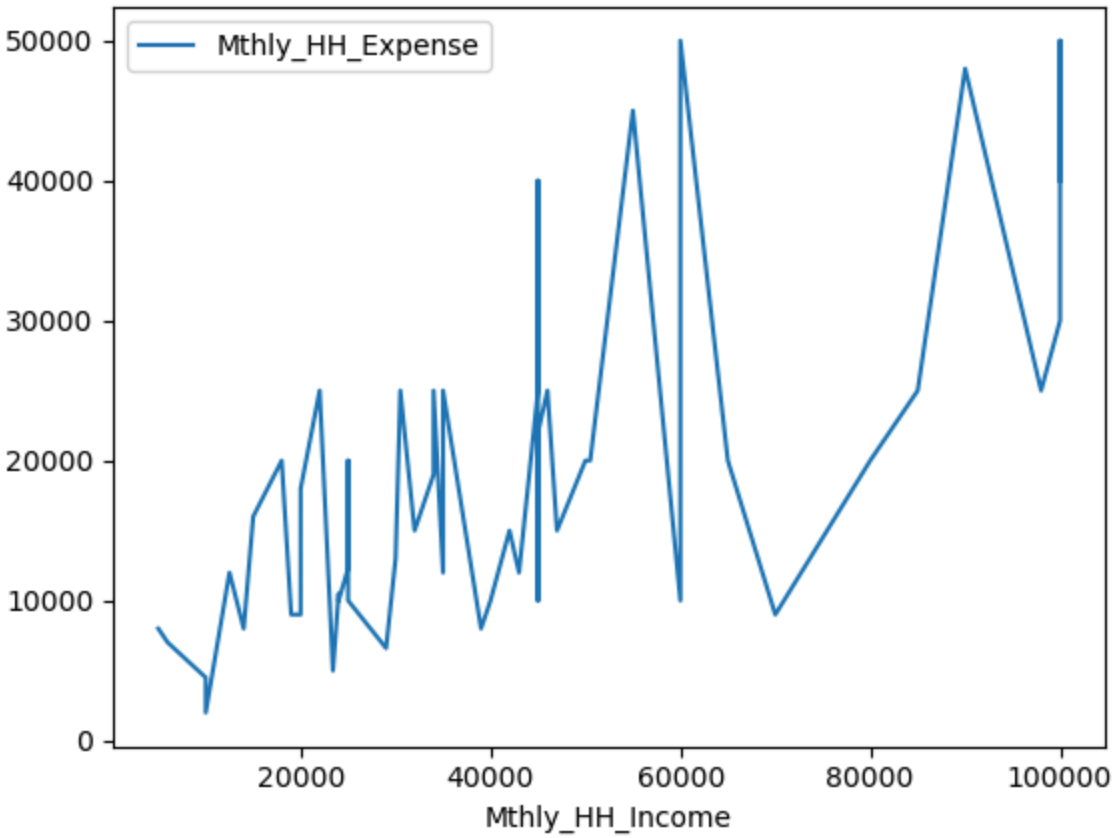
Out[25]: <Axes: xlabel='Highest_Qualified_Member'>



8. Calculate Iqr (different between

In [32]:
```
income_df.plot(x="Mthly_HH_Income",y="Mthly_HH_Expense")
IQR=income_df["Mthly_HH_Expense"].quantile(0.75)-income_df["Mthly_HH_Expense"].quan
IQR
```

Out[32]: np.float64(15000.0)



9.Calculate Varience for first 3 Columns.

In [33]:
```
pd.DataFrame(income_df.iloc[:,0:5].std().to_frame()).T
```

Out[33]:

	Mthly_HH_Income	Mthly_HH_Expense	No_of_Fly_Members	Emi_or_Rent_Amt	Annual_HH
0	26097.908979	12090.216824	1.517382	6241.434948	3201

10. Calculate Variance for first 3 columns.

In [35]:
```
pd.DataFrame(income_df.iloc[:,0:4].var().to_frame()).T
```

Out[35]:

	Mthly_HH_Income	Mthly_HH_Expense	No_of_Fly_Members	Emi_or_Rent_Amt
0	6.811009e+08	1.461733e+08	2.302449	3.895551e+07

11. Calculate the count of Hightest Qualified Member.

In [36]:
```
income_df["Highest_Qualified_Member"].value_counts().to_frame().T
```

Out[36]:

Highest_Qualified_Member	Graduate	Under-Graduate	Professional	Post-Graduate	Illiterate
count	19	10	10	6	5

In [ ]:
```
## 12. Plot the Histogram to Count t
```

In [ ]:
```
income_df["No_of_Earning_Members"].value_counts().plot(kind='bar")
```