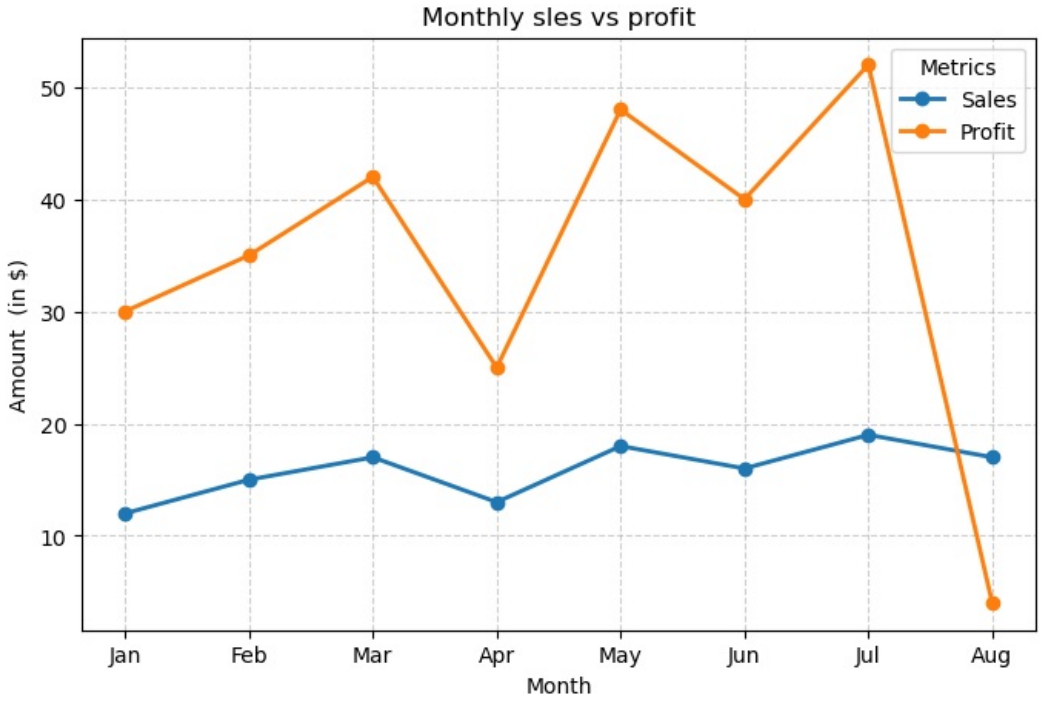
Pandas -- Visualization

1. Assignments Bar Chart:

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

# Sample Data
data = {
    'Month': ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug'],
    'Sales': [12, 15, 17, 13, 18, 16, 19, 17],
    'Profit': [30,  35,  42,  25,  48,  40,  52,  4]

}

df = pd.DataFrame(data)
print(df)



df.set_index('Month', inplace=True)


ax=df.plot(kind='line', marker='o', linewidth=2, figsize=(8,5))

ax.set_title("Monthly sles vs profit")

ax.set_xlabel('Month')

ax.set_ylabel('Amount  (in $)')


ax.grid(True, linestyle='--', alpha=0.6)

ax.legend(title='Metrics')


plt.show()
```

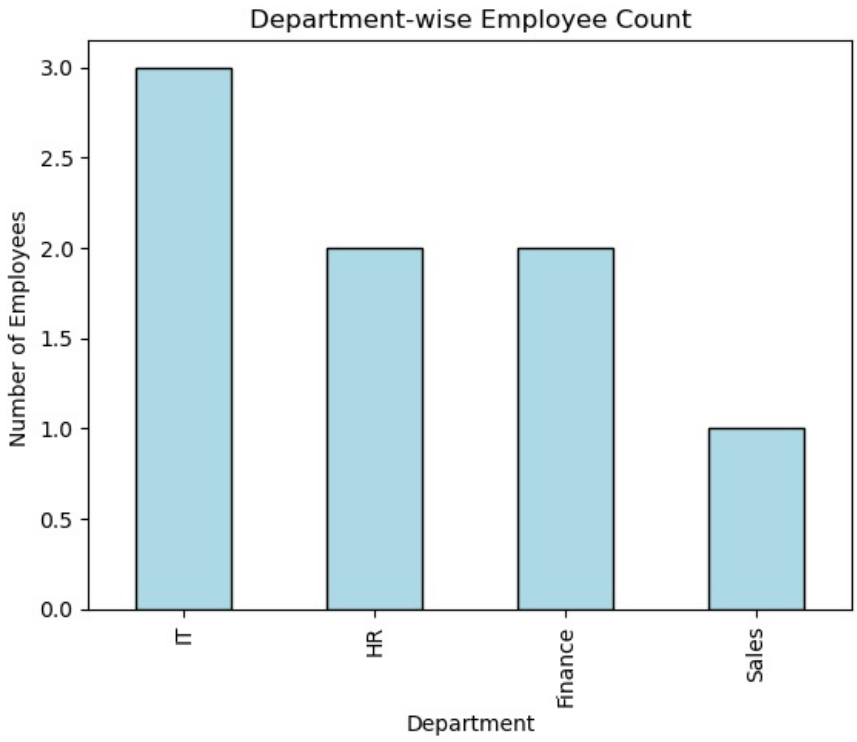
```
  Month  Sales  Profit
0   Jan     12      30
1   Feb     15      35
2   Mar     17      42
3   Apr     13      25
4   May     18      48
5   Jun     16      40
6   Jul     19      52
7   Aug     17       4
```



2. Assignment Histogram Chart Department - wise count :

In [2]:
```
import pandas as pd

import matplotlib.pyplot as plt

data = {


       'Employee_ID': [101, 102, 103, 104, 105, 106, 107, 108],
        'Department': ["HR", 'IT', 'Finance', 'IT', 'Sales', 'Finance', 'HR', 'IT']

}

df =pd.DataFrame(data)

print(df)

dept_count =df['Department'].value_counts()

print(dept_count)


dept_count.plot(

      kind='bar',
      color='lightblue',
       edgecolor ='black'
)

plt.title("Department-wise Employee Count")

plt.xlabel('Department')

plt.ylabel('Number of Employees ')

plt.show()
```

```
   Employee_ID Department
0          101         HR
1          102         IT
2          103    Finance
3          104         IT
4          105      Sales
5          106    Finance
6          107         HR
7          108         IT
Department
IT         3
HR         2
Finance    2
Sales      1
Name: count, dtype: int64
```



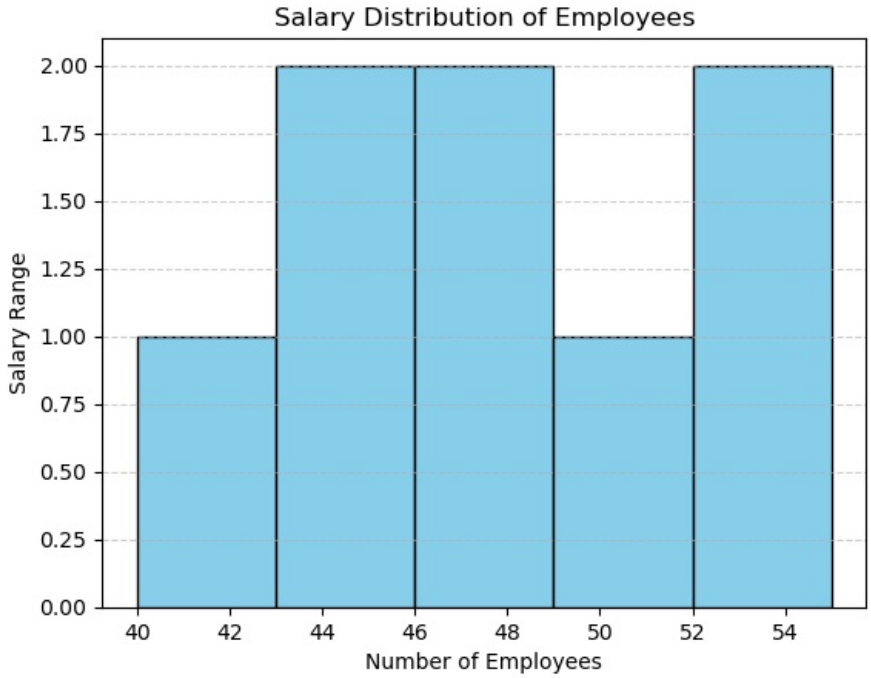
3.Assignment Histrogram -Salary Distribution :

In [7]:

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


data = {
    'Employee_ID': [1, 2, 3, 4, 5, 6, 7, 8],
    'Name': ['Ramiz', 'Aman', 'Neha', 'Zara', 'Rohan', 'Isha', 'Aditya', 'Kiran'],
    'Salary': [40, 55, 48, 50, 45, 47, 43,52]
}

df =pd.DataFrame(data)


print(df)


plt.hist(df['Salary'], bins=5, color='skyblue', edgecolor='black')

plt.title("Salary Distribution of Employees")
plt.xlabel("Number of Employees")
plt.ylabel("Salary Range")
plt.grid(axis='y', linestyle='--', alpha=0.6)
```

```
plt.show()
```

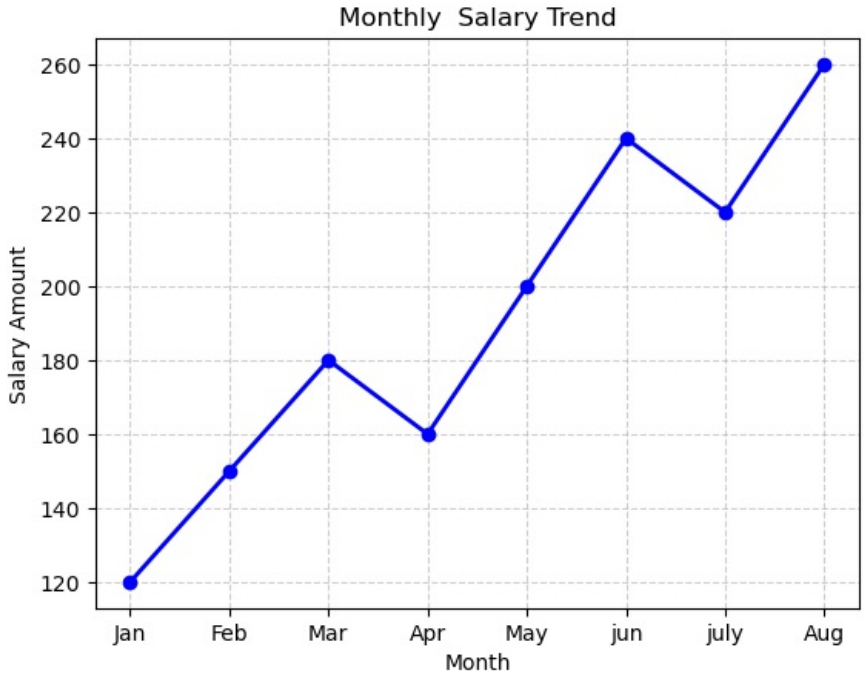
```
   Employee_ID    Name  Salary
0            1   Ramiz      40
1            2    Aman      55
2            3    Neha      48
3            4    Zara      50
4            5   Rohan      45
5            6    Isha      47
6            7  Aditya      43
7            8   Kiran      52
```



4. Assignment Line Chart -Monthly Sales Trend:

In [23]:
```
import pandas as  pd
import matplotlib.pyplot as plt

data = {
  'Month': ['Jan', 'Feb', 'Mar', 'Apr', 'May','jun', 'july', 'Aug'],

   'Salary': [120, 150, 180, 160, 200, 240, 220,260 ]


}

df =pd.DataFrame(data)

print(df)

plt.plot(df['Month'], df['Salary'],
           marker='o',
           linestyle='-',
           color ='blue',
           linewidth=2 )
plt.title("Montly Sales Trend")



plt.title("Monthly  Salary Trend")

plt.xlabel("Month")

plt.ylabel("Salary Amount")
plt.grid(True,  linestyle='--', alpha=0.6)
plt.show()
```

```
  Month  Salary
0   Jan     120
1   Feb     150
2   Mar     180
3   Apr     160
4   May     200
5   jun     240
6  july     220
7   Aug     260
```


Monthly Salary Trend
Salary Amount
260
240
220
200
180
160
140
120
Jan
Feb
Mar
Apr
May
jun
july
Aug
Month

In [ ]: