In [14]:
```
import pandas as pd
Employee_details={'Employee':['John','Alice','Bob','Emma'],
                  'Department':['IT','HR','Finance','IT'],
                  'Salary':[60000,55000,70000,72000],
                  'Age':[30,28,35,32]
                 }
df=pd.DataFrame(Employee_details)
print(df)
```

```
  Employee Department  Salary  Age
0     John         IT   60000   30
1    Alice         HR   55000   28
2      Bob    Finance   70000   35
3     Emma         IT   72000   32
```

In [4]:
```
df.head(2)
```

Out[4]:

	Employee	Department	Salary	Age
0	John	IT	60000	30
1	Alice	HR	55000	28

In [13]:
```
df['Experience']=[5,3,7,6]
print(df)
```

```
  Employee Department  Salary  Age  Experience
0     John         IT   60000   30           5
1    Alice         HR   55000   28           3
2      Bob    Finance   70000   35           7
3     Emma         IT   72000   32           6
```

In [16]:
```
print("Average of the mark is:",df['Salary'].mean())
#average_salary = df['Salary'].mean()
print("Average salary of a employee is:",average_salary)
```

```
Average salary of a employee is: 64250.0
Average of the mark is: 64250.0
```

In [57]:
```
import pandas as pd
Student_details={'Student_name':['Diya','Meera','Shama','Sameera','Malini','Naushee
                 'Science':[90,89,78,67,96,99],
                 'English':[45,56,67,78,89,90],
                 'Math':[65,87,98,54,77,100]
                 }
df=pd.DataFrame(Student_details)
print(df)
```

```
  Student_name  Science  English  Math
0         Diya       90       45    65
1        Meera       89       56    87
2        Shama       78       67    98
3      Sameera       67       78    54
4       Malini       96       89    77
5     Nausheen       99       90   100
```

In [58]:
```
print("The student scored more than 80 marks in math are:\n",df[df['Math']>80][['St
#math_high_scorers = df[df['Math'] > 80][['Student_name', 'Math']]
#print(math_high_scorers)
```

```
The student scored more than 80 marks in math are:
   Student_name  Math
1         Meera    87
2         Shama    98
5      Nausheen   100
```

In [59]:
```
print("Science marks in descending order:\n\n",df.sort_values(by='Science',ascendin
#arr2[::-1].sort()
```

```
Science marks in descending order:

   Student_name  Science  English  Math
5      Nausheen       99       90   100
4        Malini       96       89    77
0           Diya       90       45    65
1         Meera       89       56    87
2         Shama       78       67    98
3       Sameera       67       78    54
```

In [66]:
```
print("The student scored highest in English is:\n",df[df['English']==df['English']
```

```
The student scored highest in English is:
   Student_name  English
5      Nausheen       90
```

In [74]:
```
import pandas as pd
categories = ['Groceries', 'Utilities', 'Rent', 'Transportation', 'Entertainment']
expenses = [500, 200, 1200, 300, 150]
expense_data = pd.Series(expenses, index=categories)
print("Monthly Expenses:\n", expense_data)
print("\nTotal Expense:", expense_data.sum())
print("\nHighest Expense:", expense_data.idxmax(),expense_data.max())
print("\nLowest Expense:", expense_data.idxmin(),expense_data.min())
```

```
Monthly Expenses:
 Groceries          500
Utilities           200
Rent               1200
Transportation      300
Entertainment       150
dtype: int64

Total Expense: 2350

Highest Expense: Rent 1200

Lowest Expense: Entertainment 150
```

In [76]:
```
import pandas as pd

monthly_energy_consumption={'months':['January', 'February', 'March', 'April', 'May
                            'electricity_usage' : [350, 320, 310, 330, 340, 370, 380
                             'gas_usage':[20, 18, 16, 15, 12, 10, 8, 9, 12, 15, 17,
```

```
                            }
electricity_series = pd.Series(electricity_usage, index=months)
gas_series = pd.Series(gas_usage, index=months)
print("Monthly Electricity Usage (kWh):\n", electricity_series)
print("\nMonthly Gas Usage (therms):\n", gas_series)
```

```
Monthly Electricity Usage (kWh):
 January      350
February     320
March        310
April        330
May          340
June         370
July         380
August       360
September    350
October      330
November     320
December     330
dtype: int64

Monthly Gas Usage (therms):
 January      20
February     18
March        16
April        15
May          12
June         10
July          8
August        9
September    12
October      15
November     17
December     19
dtype: int64
```

In [82]:

```
import pandas as pd
months = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August',
          'September', 'October', 'November', 'December']
revenue = [5000, 5200, 4800, 5400, 5600, 5800, 6100, 5900, 6200, 6500, 7000, 6900]
revenue_series = pd.Series(revenue, index=months)
print("Monthly Advertising Revenue (USD):\n", revenue_series)
total_revenue = revenue_series.sum()
highest_revenue_month = revenue_series.idxmax()
print("\nTotal Revenue for the Year (USD):", total_revenue)
print("Month with Highest Revenue:", highest_revenue_month)
average_revenue = revenue_series.mean()
print("Average Monthly Revenue (USD):", average_revenue)
lowest_revenue_month = revenue_series.idxmin()
print("Month with Lowest Revenue:", lowest_revenue_month)
```

```
Monthly Advertising Revenue (USD):
 January      5000
February     5200
March        4800
April        5400
May          5600
June         5800
July         6100
August       5900
September    6200
October      6500
November     7000
December     6900
dtype: int64

Total Revenue for the Year (USD): 70400
Month with Highest Revenue: November
Average Monthly Revenue (USD): 5866.666666666667
Month with Lowest Revenue: March
```

In [ ]: