```
offic@DESKTOP-MCH5K5E MINGW64 ~/OneDrive/Desktop/AI & ML Data Science/Project/Project 4
$ py functional_treat.py

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program

Enter Your choice:1

create 1D list and 2D list


1.Add 1D list
2.Add 2D list
0.Exit

Enter your choice:1
Enter 1D array (sperated by comma)15,78,34,67,90,23

1D list creat Successfully........


1.Add 1D list
2.Add 2D list
0.Exit
```

```
Enter your choice:2
Enter number of row:3
Enter number of Column:3
Enter element[1][1] : 13
Enter element[1][2] : 56
Enter element[1][3] : 78
Enter element[2][1] : 56
Enter element[2][2] : 78
Enter element[2][3] : 45
Enter element[3][1] : 10
Enter element[3][2] : 45
Enter element[3][3] : 89

2D list creat Successfully........


1.Add 1D list
2.Add 2D list
0.Exit

Enter your choice:0

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program
```

```
7. Exit Program

Enter Your choice:2

Display  Display Data Summary using Built-in Functions


1.Print Data Summary (using built-in function)
2.Print 2D List
0.Exit

Enter your choice(1 and 2):1
Total element : 6
Maximun element : 90
minimum element : 15
Sum of all element: 307
Average value : 51.166666666666664

1.Print Data Summary (using built-in function)
2.Print 2D List
0.Exit

Enter your choice(1 and 2):2

2D list display in Grid structure....
[13, 56, 78]
[56, 78, 45]
[10, 45, 89]
```

```
1.Print Data Summary (using built-in function)
2.Print 2D List
0.Exit

Enter your choice(1 and 2):0

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program

Enter Your choice:3

calculate the factorial of given number using recursion.

Enter number:5
 factorial of 5 is 120

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program
```

```
Enter Your choice:4

Filters elements greather than or equal to n from the data list.

Enter number:45
Filtered Data (value >=45)
[78, 67, 90]

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program

Enter Your choice:5

sort 1D list using sort() and
sort 2D list using sorted()


1.Sort 1D list
2.Sort 2D list
0.Exit

Enter your choice:1
```

```
Enter your choice:1

1.Ascending
2.Descending
0.Exit

Enter your choice1

Sort 1D list in Ascending : [15, 23, 34, 67, 78, 90]

1.Ascending
2.Descending
0.Exit

Enter your choice2

Sort 1D list in Descending : [90, 78, 67, 34, 23, 15]

1.Ascending
2.Descending
0.Exit

Enter your choice0

1.Sort 1D list
2.Sort 2D list
0.Exit
```

```
Enter your choice:2

1.Ascending
2.Descending
0.Exit

Enter your choice1

Ascending order...
[10, 45, 89]
[13, 56, 78]
[56, 78, 45]

1.Ascending
2.Descending
0.Exit

Enter your choice2

Descending Order...
[56, 78, 45]
[13, 56, 78]
[10, 45, 89]

1.Ascending
2.Descending
0.Exit
```

```
Enter your choice0

1.Sort 1D list
2.Sort 2D list
0.Exit

Enter your choice:0

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program

Enter Your choice:6
```

```
Enter Your choice:6

return the multiple values


diplay data using *args

values  ((15, 90, 307, 51.166666666666664),)

Display data using **kwargs

Minimum:15
Maximun:90
Sum:307
Aveage:51.166666666666664

1. Input Data
2. Display Data Summary (Built-in Functions) and 2D List
3. Calculate Factorial (Recursion)
4. Filter Data by Threshold (Lambda Function)
5. Sort Data
6. Display Dataset Statistics (Return Multiple Values)
7. Exit Program

Enter Your choice:7

offic@DESKTOP-MCH5K5E MINGW64 ~/OneDrive/Desktop/AI & ML Data Science/Project/Project 4
$
```