

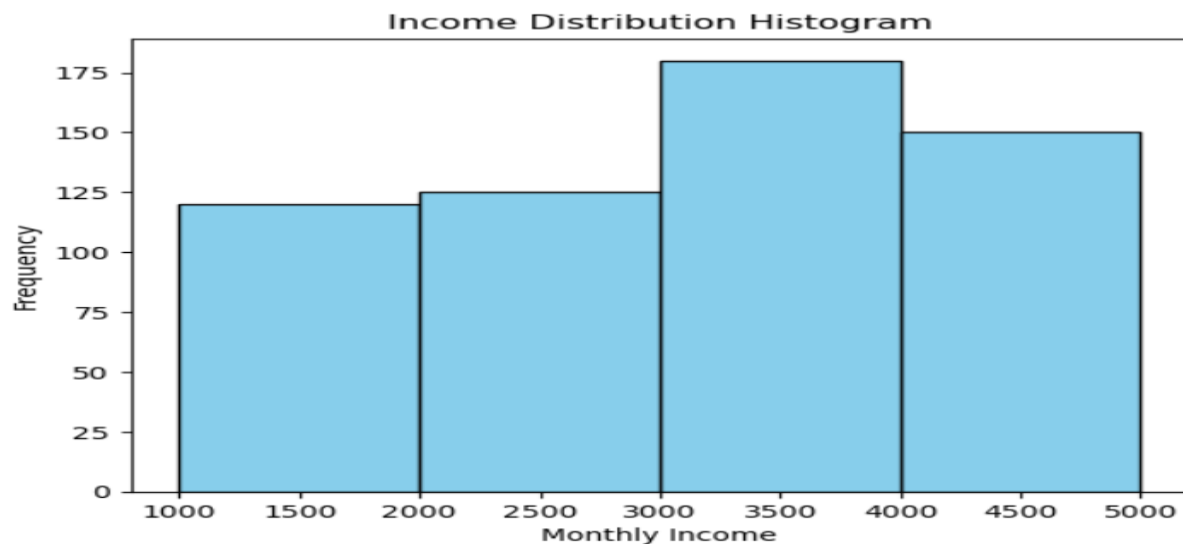
Q.1 Draw a histogram from a following income distribution.

Monthly Income	1000-2000	2000-3000	3000-4000	4000-5000
Frequency	120	125	180	150

Program:

```
import matplotlib.pyplot as plt
income = [1000, 2000, 3000, 4000, 5000]
freq = [120, 125, 180, 150]
data = []
for i in range(len(income)-1):
    data.extend([income[i]] * freq[i])
plt.hist(data, bins=income, color = "skyblue", edgecolor = "black")
plt.xlabel('Monthly Income')
plt.ylabel('Frequency')
plt.title('Income Distribution Histogram')
plt.show()
```

Output:



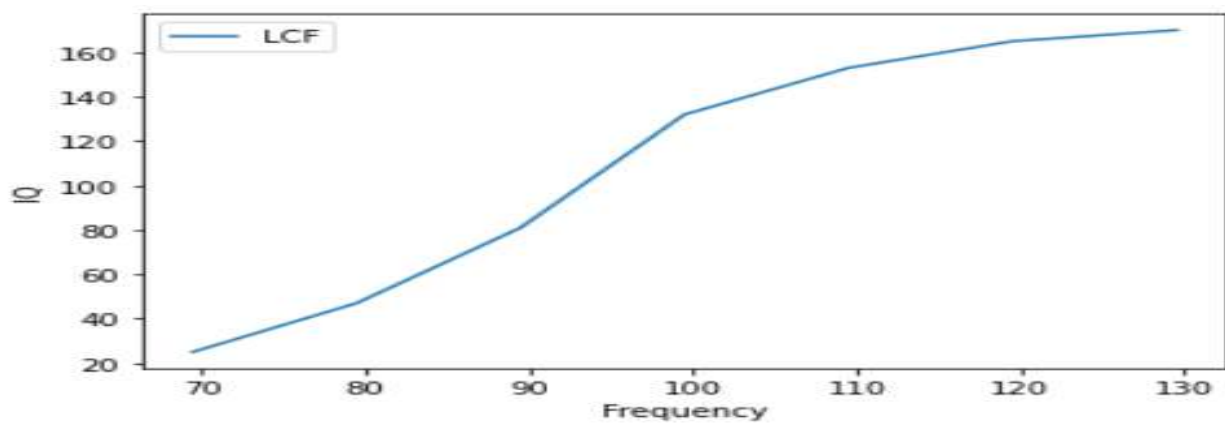
Q.2 Draw the less than cumulative frequency curve from the following frequency distribution.

IQ	Frequency
60-69	25
70-79	22
80-89	34
90-99	51
100-109	21
110-119	12
120-129	5

Program:

```
#LCF
import matplotlib.pyplot as plt
freq = [25, 47, 81, 132, 153, 165, 170]
iq = [69.5, 79.5, 89.5, 99.5, 109.5, 119.5, 129.5]
plt.plot(iq, freq, label = "LCF")
plt.xlabel("Frequency")
plt.ylabel("IQ")
plt.legend()
plt.show()
```

Output:



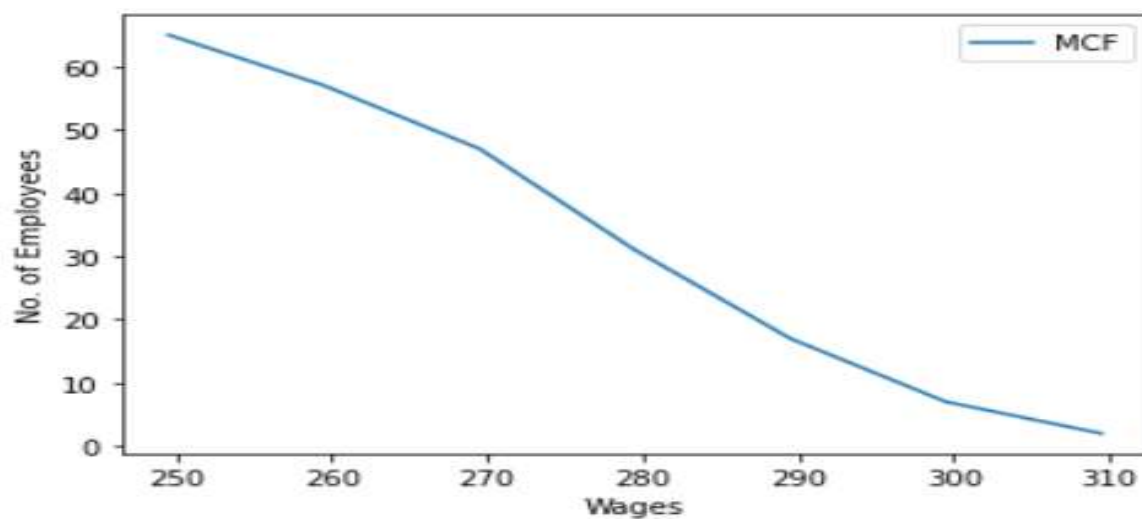
Q.3 The following table gives the frequency distribution of weekly wages of 65 employees of a company. Draw more than frequency curve.

Wages (Rs)	250-259	260-269	270-279	280-289	290-299	300-309	310-319
No of Employees	8	10	16	14	10	5	2

Program:

```
#MCF
import matplotlib.pyplot as plt
emp = [65, 57, 47, 31, 17, 7, 2]
wages = [249.5, 259.5, 269.5, 279.5, 289.5, 299.5, 309.5]
plt.plot(wages,emp, label = "MCF")
plt.xlabel("Wages")
plt.ylabel("No. of Employees")
plt.legend()
plt.show()
```

Output:



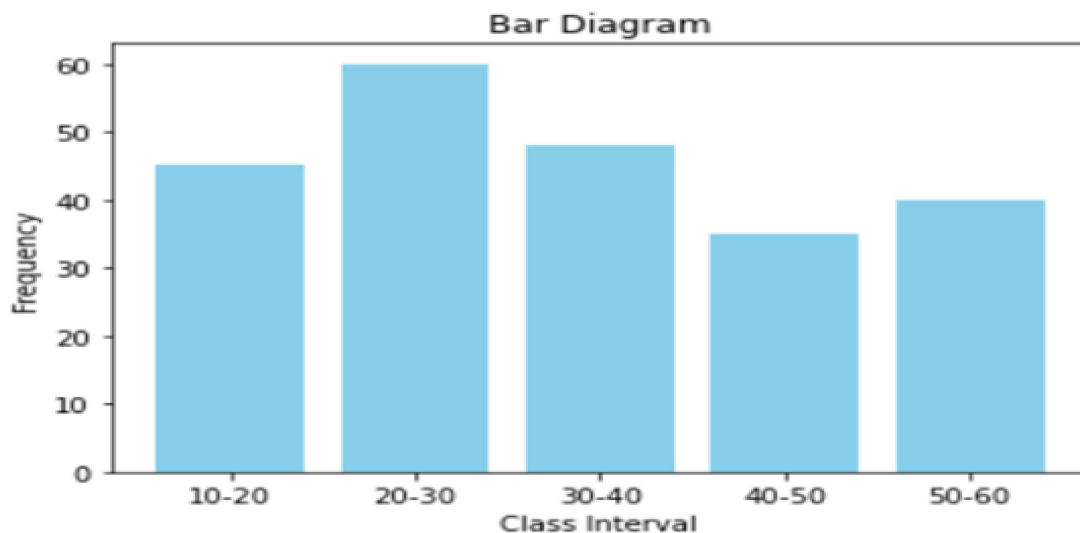
Q.4 Represent the following data using simple bar diagram.

Class Interval	010-20	20-30	30-40	40-50	50-60
Frequency	45	60	48	35	40

Program:

```
#Bar Plot
import matplotlib.pyplot as plt
x_ranges = ['10-20', '20-30', '30-40', '40-50', '50-60']
y_frequency = [45, 60, 48, 35, 40]
plt.bar(x_ranges, y_frequency, color='skyblue')
plt.xlabel('Class Interval')
plt.ylabel('Frequency')
plt.title('Bar Diagram')
plt.show()
```

Output:



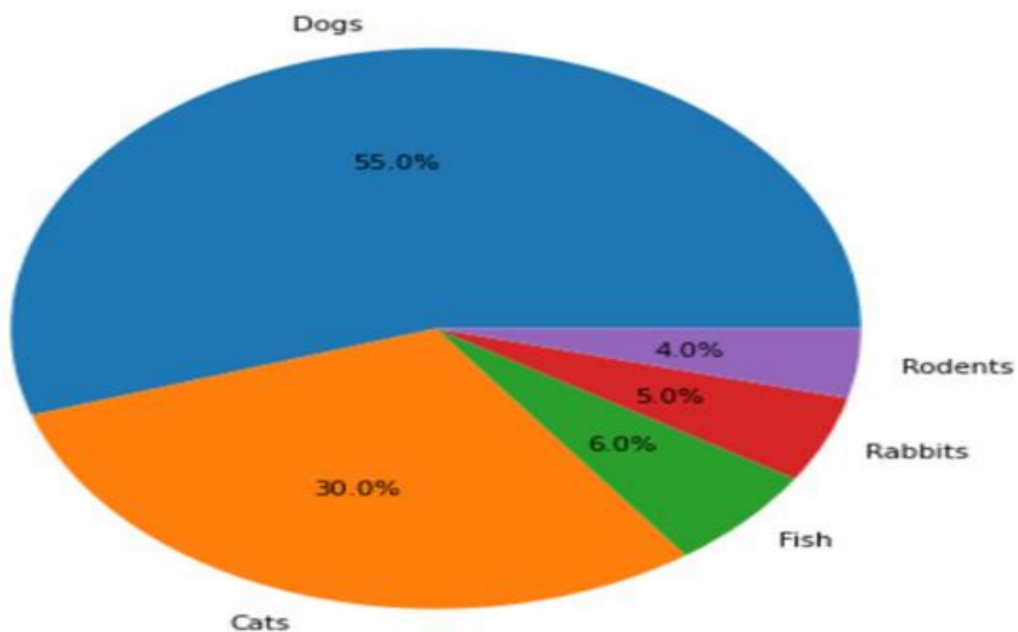
Q.5 Draw a Pie Diagram for the following data.

Dogs	55%
Cats	30%
Fish	6%
Rabbits	5%
Rodents	4%

Program:

```
#Pie Chart 1  
from matplotlib import pyplot as plt  
animals = ["Dogs", "Cats", "Fish", "Rabbits", "Rodents"]  
data = [55, 30, 6, 5, 4]  
fig = plt.figure(figsize =(10, 7))  
plt.pie(data, labels = animals, autopct = '%1.1f%%')  
plt.show()
```

Output:



Q.6 Draw a pie diagram for the following data.

Expenses	Rent	Grocery	Transport	Current	School Fee	Savings
Amount	7000	3000	800	300	2000	1900

Program:

```
#Pie Chart 2
import matplotlib.pyplot as plt
expenses = ["Rent", "Grocery", "Transport", "Current", "School Fee", "Savings"]
amount = [7000, 3000, 800, 300, 2000, 1900]
fig = plt.figure(figsize=(10, 7))
plt.pie(amount, labels = expenses, autopct = '%1.1f%%')
plt.show()
```

Output:

