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**Practical No. 01**

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 |

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import matplotlib.pyplot as plt

income=['1000-2000','2000-3000','3000-4000','4000-5000']

frq=[120,125,180,150]

bins=4

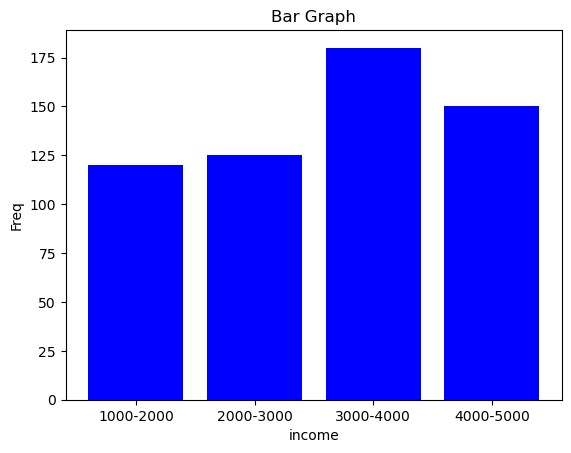
plt.bar(income,frq,color='blue')

plt.xlabel('income')

plt.ylabel('Freq')

plt.title(Bar Graph)

plt.show()



Q2) 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 |

=>

import matplotlib.pyplot as plt

IQ=[69.5,79.5,89.5,99.5,109.5,119.5,129.5]

feq=[25,47,81,132,153,165,170]

plt.plot(IQ,feq,label='LCF')

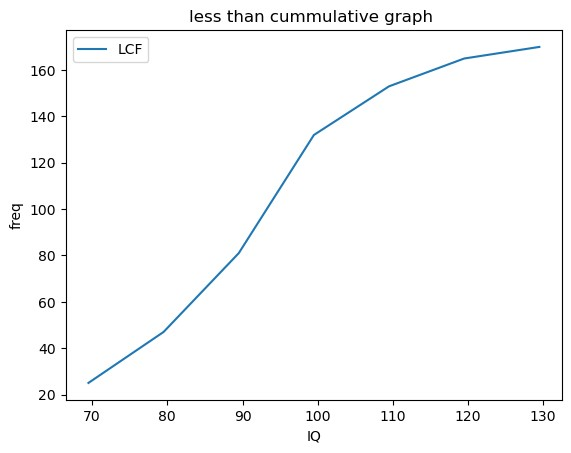
plt.xlabel('IQ')

plt.ylabel('freq')

plt.legend()

plt.title('less than cummulative graph ')

plt.show()



Q3) 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 |

=>

import matplotlib.pyplot as plt

Wages=[249.5,259.5,269.5,279.5,289.5,299.5,309.5]

feq=[65,57,47,31,17,7,2]

plt.plot(Wages,feq,label='MCF')

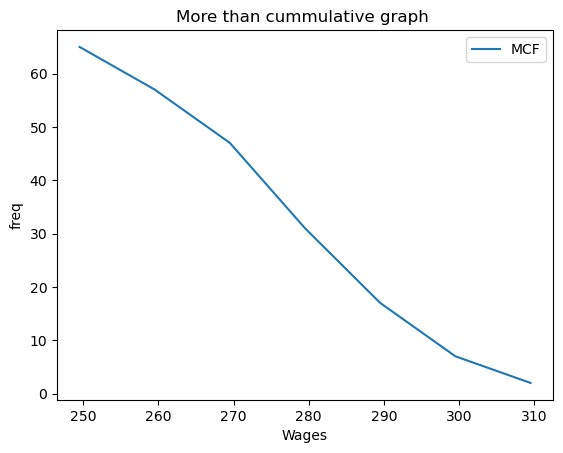
plt.xlabel('Wages')

plt.ylabel('freq')

plt.legend()

plt.title('More than cummulative graph ')

plt.show()



Q4) 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 |

=>

import matplotlib.pyplot as plt

income=['10-20','20-30','30-40','40-50','50-60']

frq=[45,60,48,35,40]

bins=4

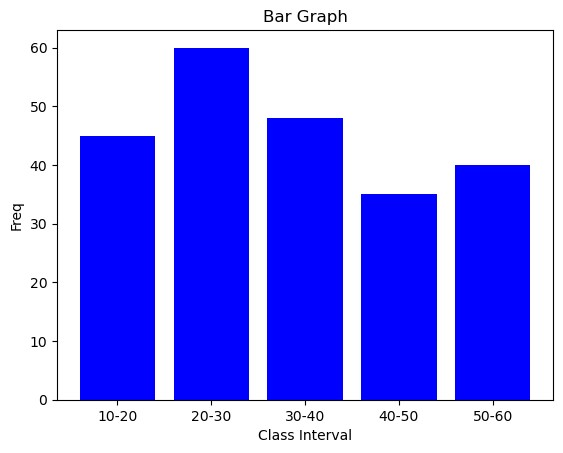
plt.bar(income,frq,color='blue')

plt.xlabel('Class Interval')

plt.ylabel('Freq')

plt.title('Bar Graph')

plt.show()



Q5)Draw a Pie Diagram for the following data.

|  |  |
| --- | --- |
| **Dogs** | **55%** |
| **Cats** | **30%** |
| **Fish** | **6%** |
| **Rabbits** | **5%** |
| **Rodents** | **4%** |

=>

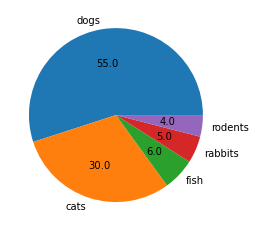
import matplotlib.pyplot as plt

animals=["dogs","cats","fish","rabbits","rodents"]

values=[55,30,6,5,4]

plt.pie(values,labels=animals,autopct='%.1f')

plt.show()



Q6) Draw a pie diagram for the following data.

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

=>

import matplotlib.pyplot as plt

exps=["rent","grocery","transport","current","school\_fees","savings"]

amount=[7000,3000,800,300,2000,1900]

plt.pie(amount,labels=exps,autopct='%.1f')

plt.show()

