In [3]: pip install matplotlib Requirement already satisfied: matplotlib in c:\users\user\anaconda3\lib\site-packages (3.4.3) Requirement already satisfied: pillow>=6.2.0 in c:\users\user\anaconda3\lib\site-packages (from matplotlib) (8.4.0) Requirement already satisfied: python-dateutil>=2.7 in c:\users\user\anaconda3\lib\site-packages (from matplotlib) (2.8.2) Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\user\anaconda3\lib\site-packages (from matplotlib) (1.3.1) Requirement already satisfied: numpy>=1.16 in c:\users\user\anaconda3\lib\site-packages (from matplotlib) (1.20.3) Requirement already satisfied: pyparsing>=2.2.1 in c:\users\user\anaconda3\lib\site-packages (from matplotlib) (3.0.4) Requirement already satisfied: cycler>=0.10 in c:\users\user\anaconda3\lib\site-packages (from matplotlib) (0.10.0) Requirement already satisfied: six in c:\users\user\anaconda3\lib\site-packages (from cycler>=0.10->matplotlib) (1.16.0) Note: you may need to restart the kernel to use updated packages. In [4]: from matplotlib import pyplot as plt In [5]: import numpy as np In [16]: dn=['Satara','Pune','Mumbai','Nashik'] pop=[60,150,200,70] plt.plot(dn,pop,color="Yellow",) plt.xlabel("Districts") plt.ylabel("Population") plt.show() 200 180 160 Population 120 100 80 Satara Pune Mumbai Districts In [22]: dn=['Satara','Pune','Mumbai','Nashik'] pop=[60,150,200,70] plt.plot(dn, pop, "y*--", markeredgecolor='red') plt.xlabel("Districts") plt.ylabel("Population") plt.show() 200 180 160 Nobrilation 120 100 80 60 Pune Mumbai Nashik Satara Districts In [29]: cn=['Satara','Pune','Mumbai','Nashik'] temp=[23,36,34,43] plt.plot(cn, temp, "g*--", markeredgecolor='red') plt.xlabel("Cities") plt.ylabel("Temperature") plt.show() 42.5 40.0 37.5 35.0 32.5 30.0 27.5 25.0 22.5 Satara Pune Mumbai Nashik Cities In [30]: cn=['Satara','Pune','Mumbai','Nashik','Nagpur'] temp=[4.5, 2.6, 3.2, 4.2, 2.2] plt.plot(cn, temp, "g*--", markeredgecolor='red') plt.xlabel("Cities") plt.ylabel("Temperature") plt.show() 4.5 4.0 Emperature 3.0 2.5 Satara Pune Mumbai Nashik Nagpur Cities In [51]: dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60, 150, 200, 70] pofW=[34,54,37,45] pofN=[65,76,87,67] pofS=[37,87,56,45] plt.plot(dn, pofE, "g*-", markeredgecolor='pink', label="East") plt.plot(dn, pofW, "y*--", markeredgecolor='purple', label='West') plt.plot(dn, pofN, "r*-", markeredgecolor='red', label='North') plt.plot(dn, pofS, "b*-", markeredgecolor='yellow', label='South') plt.xlabel("Districts") plt.ylabel("Population") plt.title('Population of Districts') # plt.legend() # plt.legend(loc="upper left") plt.legend(bbox_to_anchor=(0.72,1.3),ncol=2) plt.show() —⋆— East Population of Districts 200 175 150 Population 100 75 50 Satara Pune Mumbai Nashik Districts In [61]: # bar plot dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60, 150, 200, 70] pofW=[34,54,37,45] pofN=[65,76,87,67] pofS=[37,87,56,45] plt.xlabel("Districts") plt.ylabel("Population") plt.title('Population of Districts') # plt.legend(bbox_to_anchor=(0.72,1.3), ncol=2) # plt.bar(dn,pofE) # plt.bar(dn, pofE, align='edge') plt.bar(dn,pofE,width=0.4) plt.show() Population of Districts 200 175 150 Population 100 75 75 50 25 Satara Pune Mumbai Nashik Districts In [80]: dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60, 150, 200, 70] pofW=[34,54,37,45] pofN=[65,76,87,67] pofS=[37,87,56,45] plt.xlabel("Districts") plt.ylabel("Population") plt.title('Population of Districts') bar1=[2,4,6,8] plt.bar(bar1, pofE, width=0.4, label='EastRegion') #for i in bar1: # bar2.append(i+0.4) bar2=[i+0.4 **for** i **in** bar1] plt.bar(bar2,pofW,width=0.4,label='WestRegion') bar3=[i+0.4 **for** i **in** bar2] plt.bar(bar3,pofN,width=0.4,label='NorthRegion') bar4=[i+0.4 **for** i **in** bar3] plt.bar(bar4, pofS, width=0.4, label='SouthRegion') plt.legend(bbox_to_anchor=(0.99,1.3),ncol=3) plt.xticks(bar2,dn) plt.show() EastRegion SouthRegion NorthRegion WestRegion Population of Districts 175 150 Population 100 75 50 25 Mumbai Districts In [90]: cn=['Satara','Pune','Mumbai','Nashik'] day1=[23, 36, 17, 43] day2=[54, 34, 43, 34] day3=[27, 36, 27, 43] day4=[45, 47, 54, 54] plt.xlabel("Cities") plt.ylabel("Temperature") plt.title('Population of Districts') bar1=[2,4,6,8] plt.bar(bar1, day1, width=0.3, label='day1Region') bar2=[i+0.4 **for** i **in** bar1] plt.bar(bar2, day2, width=0.3, label='Day2Region') bar3=[i+0.4 **for** i **in** bar2] plt.bar(bar3,day3,width=0.3,label='Day3Region') bar4=[i+0.4 **for** i **in** bar3] plt.bar(bar4, day4, width=0.3, label='Day4Region') plt.legend(bbox_to_anchor=(0.99,1.3),ncol=3) plt.xticks(bar2,cn) plt.show() day1Region Day3Region Day4Region Day2Region Population of Districts 50 40 30 10 Satara Pune Mumbai Cities In [98]: # Stacked bar plot dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60,150,200,70] pofW=[34,54,37,45] pofN=[65,76,87,67] plt.bar(dn,pofE,color='yellow',width=0.4,label='EastRegion') plt.bar(dn,pofW,bottom=pofE,color='green',width=0.4,label='WestRegion') bot3=[i+j for i, j in zip(pofE, pofW)] plt.bar(dn,pofN,bottom=bot3,color='magenta',width=0.4,label='NorthRegion') plt.show() 300 200 150 100 50 Pune Mumbai Nashik Satara In [6]: cn=['Satara','Pune','Mumbai','Nashik'] day1=[23,36,17,43] day2=[54,34,43,34] day3=[27,36,27,43] plt.xlabel("Cities") plt.ylabel("Temperature") plt.title('Population of Districts') plt.bar(cn, day1, color='yellow', width=0.4, label='Day1Region') plt.bar(cn, day2, bottom=day1, color='green', width=0.4, label='Day2Region') bot3=[i+j for i, j in zip(day1, day2)] plt.bar(cn, day3, bottom=bot3, color='magenta', width=0.4, label='Day3Region') plt.legend(bbox_to_anchor=(0.98,1.2),ncol=3) plt.show() Day1Region Day2Region Day3Region Population of Districts 120 100 60 40 20 Mumbai Satara Pune Nashik Cities In [12]: dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60, 150, 200, 70] figure, ((a1, a2))=plt.subplots(1,2) a1.plot(dn, pofE) a2.bar(dn, pofE) plt.show() 200 200 175 180 150 160 125 140 100 120 75 100 50 80 25 60 Pune Mumbai Nashik Satara Pune MumbaiNashik In [14]: # Scatter plot dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60, 150, 200, 70] # plt.figure(figsize=(6,8)) figure, ((a1, a2), (a3, a4))=plt.subplots(2, 2) a1.plot(dn,pofE) a2.bar(dn, pofE) a3.scatter(dn,pofE) a4.plot(dn,pofE) plt.show() 200 150 100 100 Satara Pune MumbaiNashik Satara Pune Mumbai Nashik 200 200 150 150 100 100 Pune Mumbai Nashik Satara Pune Mumbai Nashik In [25]: # Box plot values=[50,60,10,25,45,80,7,200] plt.boxplot(values) plt.show() 0 200 175 150 125 100 75 50 25 In [36]: # Mode # Histogram values=[65,60,56,56,56,40,48,45,60,80,60,110,110,45,45,45,45] plt.hist(values, ec='yellow', bins=[40,61,81,101,121,141,161]) plt.show() 12 10 8 6 100 120 160 140 In [40]: # piechart/ peiplot dn=['Satara','Pune','Mumbai','Nashik'] pofE=[60, 150, 200, 70] plt.pie(pofE, labels=dn, autopct="%f%%") plt.show() Pune 31.250000% Satara .5833339 41.666666% Nashik Mumbai In []: