The Islamia University Bahawalpur

Faculty of Engineering & Technology

Department Of Computer Systems Engineering



**Assignment # 1**

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**Submitted To**:

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**Subject:**

**Data Mining**

**Session:**

20CSE-31

**Write the code that can draw best :**

1)-line-plot

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| Code: | Output: |
| **Plot #1**  plt.figure(figsize=(12,8))  x= [5,10,15,20,25,30,35]  y=np.array([1,4,3,2,5,7,6])  plt.plot(x,y,c='green', marker='\*', ms=20,mec='r',linewidth=5,mfc='y')  plt.legend('Values')  plt.grid(color='b', linestyle='--', linewidth=2,  axis=('both'),which='major',dash\_capstyle='round')  **Plot #2**  plt.figure(figsize=(12,8))  x= ['Mon','Tues','wed','Thur','Fri','Sat']  y=pd.array([2,-4,5,-2,3,-5])  plt.subplot(221)  plt.plot(x,y,c='red',marker='\*',mfc='blue')  plt.grid()  **Plot #3**  plt.figure(figsize=(12,8))  x= ['Mon','Tues','wed','Thur','Fri','Sat']  y=pd.array([2,-4,5,-2,3,-5])  plt.subplot(222)  plt.plot(x,y,'yo:')  plt.grid()  **Plot #4**  plt.figure(figsize=(12,8))  x= ['Mon','Tues','wed','Thur','Fri','Sat']  y=pd.array([2,-4,5,-2,3,-5])  plt.subplot(224)  plt.plot(x,y,'g\*:')  plt.grid()  **Plot #5**  plt.figure(figsize=(12,8))  x= ['Mon','Tues','wed','Thur','Fri','Sat']  y=pd.array([2,-4,5,-2,3,-5])  plt.subplot(223)  plt.plot(x,y ,'b+--')  plt.grid()  # create data  x = [1,2,3,4,5]  y = [3,3,3,3,3]    # plot lines  plt.plot(x, y, label = "line 1",marker='o',linestyle='--',mfc='red')  plt.plot(y, x, label = "line 2",marker='+')  plt.plot(x, np.sin(x), label = "curve 1",marker='\*',mfc='orange',linestyle='-')  plt.plot(x, np.cos(x), label = "curve 2",marker='s',linestyle=':',mfc='b',mec='black')  plt.legend()  plt.grid()  plt.show() |  |

2)-boxplot

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| Code: | Output: |
| **Plot #1**  data = [530,370,410,460,390,300,350,500,250,.2, 1000,1100,1300]  plt.boxplot(data)  **Plot #2**  data =[5300,3700,4100,4600,3900,3000,3500,5000,2500  ,2,3,4,5,6,4400]  plt.boxplot(data,notch=True)  # The notches represent the confidence interval (CI) around the median.  **Plot #3**  data = [5300,3700,4100,4600,3900,3000,3500,5000,  2500,2,3,4,5,6,4400]  plt.boxplot(data,patch\_artist=True, labels=['DataSet'])  #If `False` produces boxes with the Line2D artist. Otherwise,  boxes and drawn with Patch artists.  #label gives name to the graph on x-axis  **Plot #4**  data = [5300,3700,4100,4600,3900,3000,3500,5000,2500,2,3,4,5,6,  4400]  plt.boxplot(data,vert=False,widths=0.3,whis=(2,35))  #vert is used to change the direction of boxplot if it is  ture then  plot will be vertical else horizontal  #whis is used to control whiskers by default whis=1.5    **Plot #5**  data = [5300,3700,4100,4600,3900,3000,3500,5000,2500,2,3,4,5  ,6,4400]  plt.boxplot(data,notch=True,patch\_artist=True,labels=  ['DataSet'  ],vert=True,  widths=0.3,whis=(2,35),autorange=True,meanline=True,  positions=[1])  plt.title('Boxplot (Muhammad Saqlain 20CSE-31)')  #The notches represent the confidence interval (CI) around  the median.  data1 = [200,3500,110,360,290,500,250,4000,150,.2, 2000,  2100,1500]  plt.boxplot(data1,notch=True,positions=[2],widths=0.5,  labels=['DataSet1'],)  data2=[4500,200,3400,1300,4600,1000,4000,2000,0.4,900  ,2300]  plt.boxplot(data2,positions=[3],labels=['DataSet2'],widths  =0.4,  patch\_artist=True,)  **Plot #6**  data = [30,15,40,39,3,35,50,25,100,3,4,5,60,  44,20,70]  plt.boxplot(data) |  |

3)-histogram

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| Code: | Output: |
| **1-**  m =np.random.normal(50, 10, 100)  plt.hist(m,bins=25, density=True, alpha=0.6, color='b',edgecolor='red',linewidth=4, rwidth=0.8)  plt.title('Hist plot of some rndm Ages by(Muhammad Saqlain)')  plt.xlabel('Values')  plt.legend(['age'])  plt.grid()  plt.show(  **#bins** *int**default 10***(**Number of histogram bins to be used.)  # rwidth is used to adjust spacing between |  |

4)-bar-plot:

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| code | output |
| Code#1  ages=[20,30,15,35,45,10,45]  pos=[1,2,3,5,4,6,7]  plt.bar(pos,ages,color=['blue'],rwidth=0.7)  ages=[20,30,15,35,45,10,45]  pos=[1,2,3,5,4,6,7]  plt.barh(pos,ages,color=['blue']) |  |

5)-scatter-plot

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| Code | Output: |
| x= [1,2,3,4,5,6]  y=pd.array([10,20,30,40,50,60])  plt.scatter(x,y)  x= [1,2,3,4,5,6]  y=np.array([1,4,8,36,72,95])  plt.scatter(x,y,color='red',marker='s')  plt.title("This is Scatter Graph")  plt.legend(title='graph')  plt.show() |  |