

## BarGraph and Scatter plots

1. What is 'big data'?

1. What is data visualization?
2. What is matplotlib?
3. What is pyplot?
4. In which of the following the matplotlib is preinstalled?  
(a)Anaconda            (b)Python 3.7            (c)Python 2.7
5. Give commands to install matplotlib in Python.

1. Which statement is essential before invoking pyplot's methods?
2. Write the 2 different ways of giving import statement to import pyplot.
3. Name the different ways in which the data can be plot using Pyplot interface.

1. Define (i) Line chart (ii)Bar chart (iii) scatter plot
2. Which two types of graphs can be plot using the same function and how will you show the difference of two while using that function.

1. Name the function used to create both line chart and scatter plot.
2. Name the 2 functions used to create scatter graph.
3. Given a=[1,2,3,4], b=[10,20,30,40], write command to draw a line graph with the values of a and b.
4. What are called markers?
5. In plt.plot(a,b), which value will be plotted along x axis and which will be along y axis?
6. Name the functions used to set the x-axis and y-axis labels. Also give syntax and example.

1. What happens when we give the 3 statements xlabel() ,ylabel() and plot() on python prompt?
2. How can you apply multiple statements on a single plot?
3. How can we group multiple statements in Ipython console/Interactive mode?

1. Where should we give the show() of pyplot in script?
2. Is it necessary to give show() in interactive mode?
3. Mention the possible settings that can be given with plot() function?
4. Give example of plot() by specifying the color code.
5. Will the color of lines be same or different if we plot multiple lines in the same graph without specifying the color code?
6. Mention the 3 different ways of specifying colors in plot().
7. How can we change the style of line in plot()?
8. Mention the different line styles possible with plot().
9. Give example to plot 2 different lines with different styles.
10. What is the use of marker parameter in plot()?What will happen if we don't specify marker?
11. Write the use of markersize and markeredgecolor parameter in plot().
12. Give example of plot() by specifying marker,markersize and markeredgecolor.
13. What will happen if we don't specify marker but specify the markersize and markeredgecolor?

1. List few marker types with its description that can be given with plot().
2. Can we combine the markertype with color code. If yes, give example.

1. What will be the color of the markers when we don't specify the markeredgecolor in plot()?
2. What argument is must to draw a line graph using plot() while combining the color code and marker type?
3. What will happen if we skip the linestyle argument when combining color code and marker type in plot()?

4. What will happen if we skip the line color,linewidth and linestyle argument but give the marker type in plot()?
1. Mention the arguments of plot() related to the line and also the arguments related to marker.
  2. In Jupyter Notebook the plots will appear in the pop up window. What should we do to make it appear inline?
  3. Write program to use 3 set of points to plot line graph with 2 different coloured, different styled and different thickness lines, one with first and second set of data and the another with first and third set of data.
  4. Repeat the above program again to plot a different scatter plots by giving different markercolor, markerstyle, markersize and markeredgecolor using plot().
1. Which is the powerful function to create scatter graph?
  2. Give example program using scatter ().
1. Write the use of the arguments 'c','s',edgecolor and marker in scatter?
  2. Is it must to give 'c', 's', edgecolor and marker argument in scatter().
  3. What is the default value of 'c' and marker argument in scatter?
  4. What is the primary difference in creating scatter graph using plot() and scatter()?
1. Is it possible to give different colors and different sizes to each dot in a scatter graph? If yes, give example.
  2. While giving array of colors and sizes as arguments to c and s, care should be taken in the shape of array. Why?
1. Name the function used to create the bar graph.
  2. Write a program to create 2 lists and plot a bar graph with them. Also give the label for both the axes.
1. Can we give the list of string as any one of axis value in bar graph.
  2. Say T/F: The order of bars plotted may be different from the order in the actual data sequence in bar().If true in which order it is plotted?
  3. Does the bar graph draws bar with equal widths by default? If yes, what is the default width size?
  4. Can we change the default width of bars in bar graph? If yes, what is the data type of width value?
  5. Is it possible to give different width for different bars in bar graph?
1. Write program to draw 2 bar graphs while the first graph should have all the bars with 0.5 widths and the second graph with different width for different bars.
  2. Find the error: plt.bar([1,2,3],[10,20,30],width=[0.5,0.6])
1. What is the default color of bars in bar graph?
  2. Can we change the default color of bars in bar graph? If yes give example.
  3. Can we give different color for different bars of bar graph?If yes, give example.
1. Find the error: plt.bar([1,2,3],[10,20,30],color=['r','g'])
  2. Name 2 optional argument of bar().
  3. Is there any specific function to draw multiple bar graphs?If no ,then how will you draw multiple bar graphs?
1. Write program to draw multiple bar graphs using 2 bar() functions.
1. Is it possible to create horizontal bar chart? If yes, what function is used for that?
  2. What is the difference in giving argument to bar() and barh() function?

1. What are the possible details that we can give in a graph for easy understanding?/ Mention the anatomy of a plot.
2. What is figure related to plot?
  1. What are axes related to plot? Explain the 3 properties of axes.
  2. What is title related to plot?
  3. What are legends related to plot?
  4. What function is used to give title to a chart? Give example.
1. Pyplot automatically fixes the ranges for x and y axis depending on data. Can we change the ranges? If yes, name the functions used for that. Also give example.
2. What are the 2 arguments given for xlim()/ylim() function?
3. When the data to be plotted on x-axis falls out of range of xlim() parameters, will it report any error?
  1. Is there any way to flip the graph? If yes, give example.
  2. What is the use of xticks() and yticks() function? What will happen if we didn't use these functions while drawing graph?
1. Write program to create a bar graph by specifying xticks().
  1. When there is a possibility to give strings in x-axis to each bar through the first argument of bar(), what is the need for xticks()?
  2. What is the use of giving rotation argument in xticks()?
  1. Which function uses the label argument of bar() function?
  2. In which situation the legend() function is useful while drawing graph?
  3. Write program to draw multiple bar charts. Also use legend.
  4. What is the parameter of legend()?Mention the possible values that can be given for that.
  5. What is the default value of 'loc' argument of legend()?
  6. Can we use label argument and legend() function in plot()? If yes,When is it necessary?
1. Write program to plot 3 different lines with different colors. Also give the legend, xlabel,ylabel and title for the graph and save the figure.
2. Name the function used to save the figure of a graph. Mention the different formats in which it can be saved.
3. Why should we use double slash while specifying the path?