

Chapter-4-Histogram,Frequency Polygon and box plot

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1. What is histogram?
1. What are called bins?
2. Write the similarity and difference between bar graph and histogram.
3. Write the situation where the histogram/ bar graph is to be used.
4. Name the function used to create histogram and explain its arguments.
5. Name the optional arguments of hist() and their default values.
6. What happens when an integer value is given to bin argument of hist()?
7. What happens when the cumulative argument of hist() is given true?
8. Mention the 4 different values that can be given for histtype argument of hist() and explain.

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1. Which among the following value of histtype will do the vertical stack of data?
(i) bar (ii) barstacked (iii) step (iv) stepfilled
2. Differentiate step and stepfilled of histtype in hist().
3. What will happen if orientation of hist() is given as horizontal?
4. Given :

```
import matplotlib.pyplot as plt
import numpy as np
x=np.arange(10,100,2)
y=np.arange(10,55)
```

Write code to create histogram

- (i) With x and no other arguments
- (ii) with x and 40 bins
- (iii) with x with 10 bins
- (iv) with x, 30 bins and cumulative
- (v) with x,20 bins and 'step' type
- (vi) with x,y
- (vii) with x and y as stacked bar type histogram.
- (viii) with x,y, cumulative and stacked bar type histogram.
- (ix) with x, a horizontal histogram.

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1. Define frequency polygon.
2. What is the use of frequency polygon?
3. Is there any function in pyplot to create frequency polygon?
4. Draw and label the anatomy of the frequency polygon.
5. Write the steps to be followed to create a frequency polygon using histogram.

Pg.147

1. Write code to create a frequency polygon using hist().
2. Which graph presents the 5-number summary? What are those 5?

Pg.148

1. Which is a quick way to summarize the distribution of a dataset?
2. What is box plot?
3. Draw and label the anatomy of box plot.
4. What are outlier points in boxplot?When does it shows that?

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1. Name the function of pyplot which is used to create boxplot.
2. Give the syntax of pyplot and explain its arguments.
3. Mention the optional arguments of pyplot and its default value.
4. What happens in boxplot when the notch parameter is true?
5. When will the boxplot() function plots the box horizontally?
6. What happens in boxplot() when the showbox argument is false?
7. What happens with boxplot() when the show means (or) meanline argument is true?

8. Given `a=[10,20,30,40,50,60,70,80]`. Write command to draw boxplot
 - (i) only with `a`
 - (ii) with `notch` as true
 - (iii) with `showmeans` as true
 - (iv) with `showbox` as false
9. Can we use `title()`, `xticks()`, `yticks()`, `xlim()`, `ylim()`, `xlabel()`, `ylabel()` and `legend()` in `hist()`/`boxplot()`?