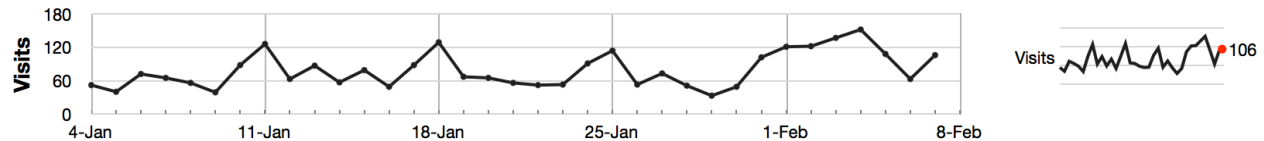


Data Science, 2022

Tut 8: Information Visualization

Question 1

The data shown here are the number of visits to a university website for a particular statistics course. There are 90 students in the class.



1. What are the names (type) of the 2 plots shown?
2. List any 2 interesting features in these data.

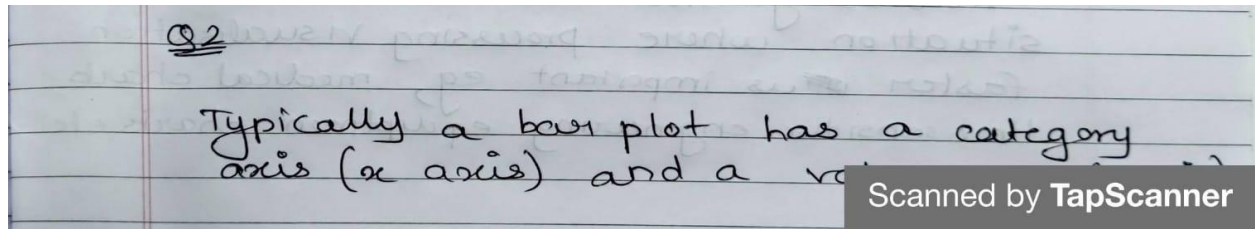
Tutorial 8

Q1.

1. The two plots are time series plot and sparkline plot.
(sparkline is a more compact version of time series plot)
2. Interesting Features of data:
 - * We see a weekly pattern of the data. We see a spike after exactly 7 days.
 - * We know there are a total of 90 students but on spike days the visits are more than ~~the~~ number of students.
 - * We can also see that the pattern is broken in week of 1st February. Some abnormal ~~some~~ circumstance seems to have happened.

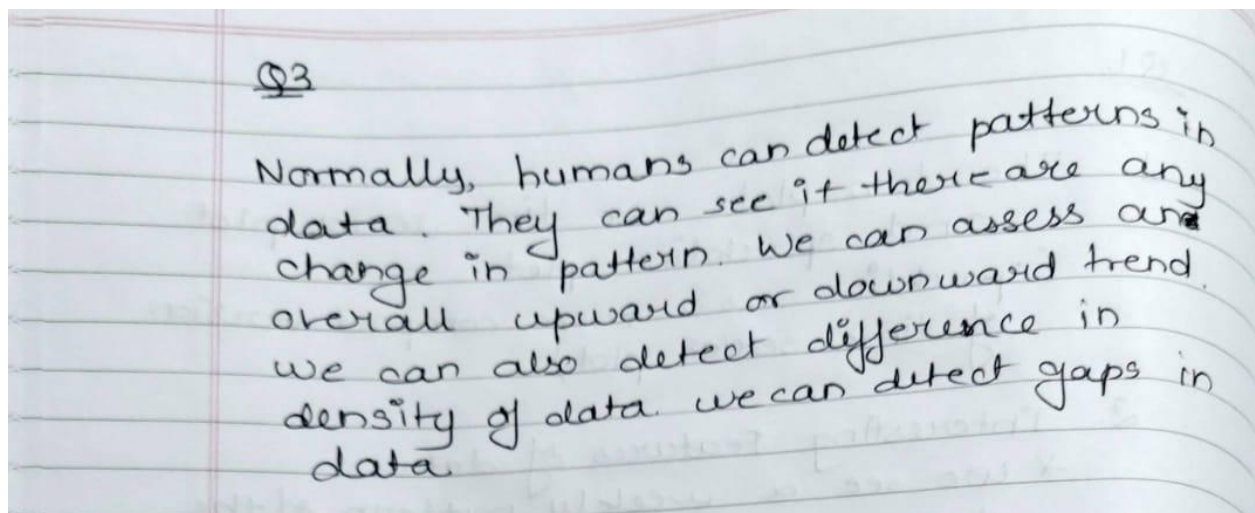
Question 2

What are the names of the axes on a bar plot?



Question 3

Which types of features can the human eye easily pick out of a time series plot?



Question 4

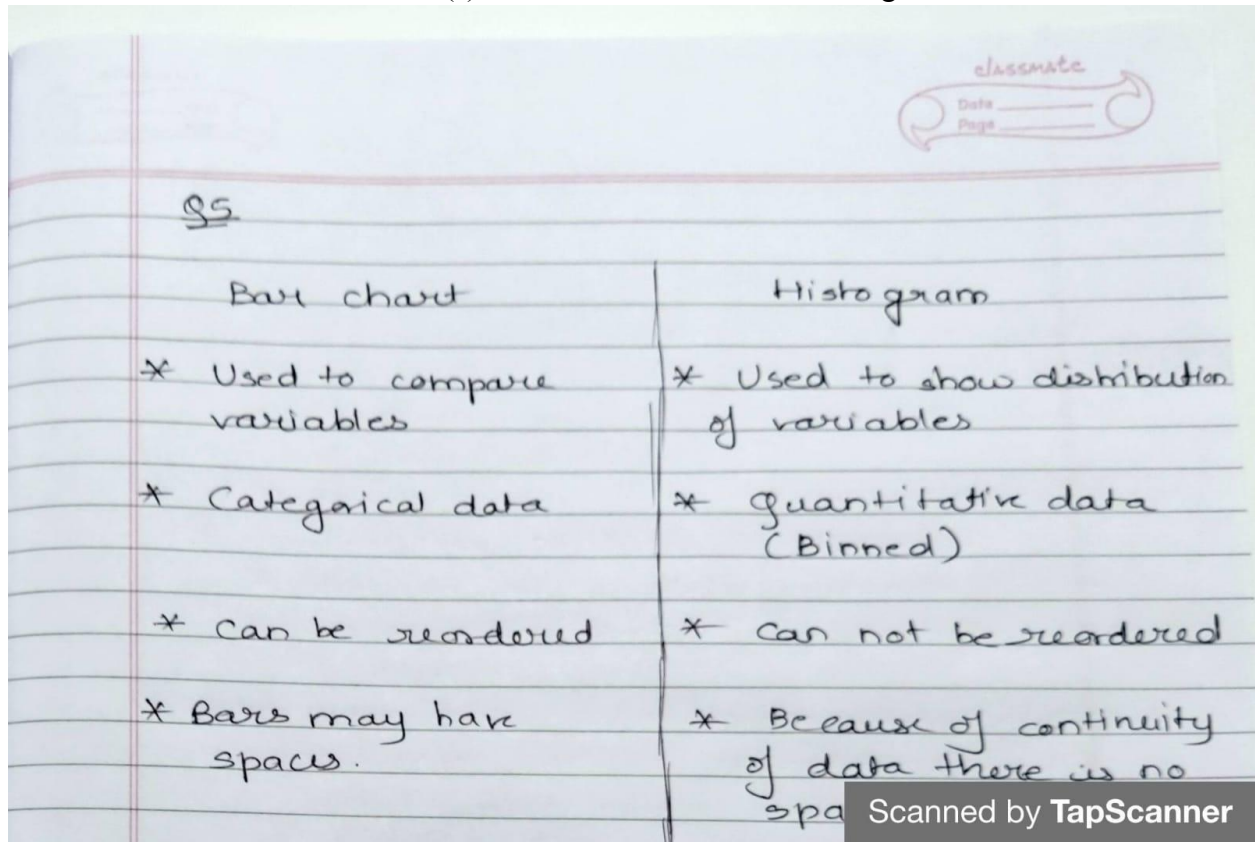
Why is the principle of minimizing “data ink” so important in an effective visualization? Give an scientific or engineering example of why this important.

Q4

'Data Ink' ratio is the ratio of pixels used to represent the data to the total number of pixels in the entire display. Minimizing data ink would reduce number of pixels used for representing. We can say that lesser pixels means lesser information to process while visualising. This can be critical in situation where processing visualisation faster ~~is~~ is important. eg, medical charts, time sensitive engineering equipment charts etc.

Question 5

Describe what the main difference(s) between a bar chart and a histogram are.



| Bar chart | Histogram |
|-----------------------------|---|
| * Used to compare variables | * Used to show distribution of variables |
| * Categorical data | * Quantitative data (Binned) |
| * Can be reordered | * Can not be reordered |
| * Bars may have spaces. | * Because of continuity of data there is no space |