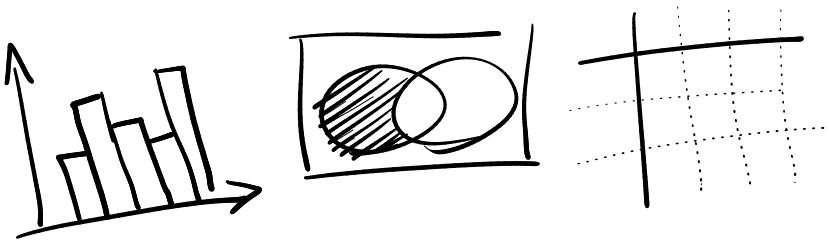
Writing About Charts, Diagrams, and Tables



As an engineer or scientist, you may be required to analyse a given graph or report your own numerical results. Altough you will probably be biased to the terminology in your field of expertise, practicing this skill, in advance, gives you the confidence to dive into expressing yourself and convincing your audience. Here we practice some useful language for that purpose. For now, the bar chart in figure 1 is our reference for providing examples. (That's the default, unless otherwise specified.)

- *...across a range of ...*

  You can use this to talk about what is usually in the horizontal axis of a bar chart or line graph:

  The bar chart shows the distribution of different age groups using social networks across a range of websites in 2016.

- *(one, two, ..., x) of the (three, four, ..., y) [some plural]*

  When talking about a group of things that are members of a larger whole, it is not a bad idea to express their fractions:

  In two of the three websites, the contribution of the age groups was not equal.

The examples are typeset with this typeface, so that you understand how important it is to write legibly.

⚠ The tense of the verbs is usually determined based on the date that the statistics belong to. Don't get in too much trouble to maintain a consistent tense through out your writing though.

- `'outnumber'`
  - *Xs outnumberd Ys*
  - *Ys were outnumberd by Xs*

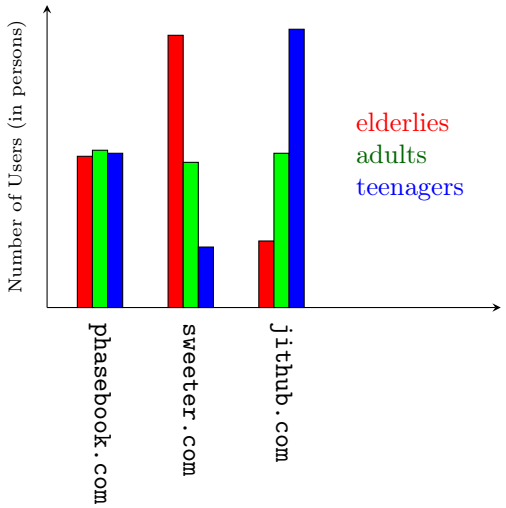


Figure 1: The distribution of three age groups in three social networking platforms in 2016

Adults were outnumbered by the two extreme age groups in two of the three websites.

⚠ Be careful to use this when the provided statistics are in numbers, not percentages. In the case of ratios, you may say ... "The portion of Xs was larger than Ys" for example; or "a higher percentage of *something* were Xs (rather than Ys)".

- *to make up a [large, small] portion of*

  Teenagers made up a large portion of JITHUB users.

- *The X gap*
  - the age gap
  - the salary gap

  There was not a significant age gap between the users of PHASEBOOK.com

- *X times as many .....s as .....s*

  There were nearly three times as many teenager JITHUB users as elderlies.

- *as many .....s as .....s*

  There were approximately as many elderly JITHUB users as teenager SWEETER users.

- *Xs [are, were] equally [distributed, represented] in ....*

  Adult users were equally distributed in the three social networking platforms. or *Adults had a* ***uniform distribution*** *across the three platforms.*

- `'dominate'`
  - X-dominated
  - dominated by Xs

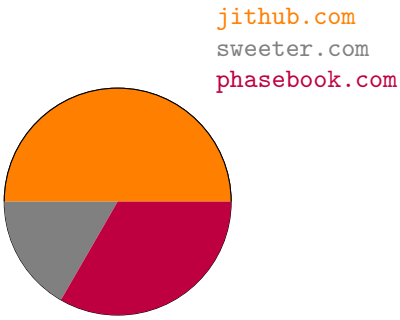


Figure 2: The ratio of teenagers' social networking activities in three platforms

  - Xs dominate Y

    The users community of JITHUB.com is dominated by teenagers.

- `'devote'`

  Half of the teenagers' social networking activity is devoted to JITHUB.com `(data from figure 2)`

> EXERCISE: Considering the "teenagers' " in the above example, what is the correct dictation of `'elderlies'` plus an apostrophe 's' ?
>
> - *teenager* $\xrightarrow{\text{plural}}$ *teenagers* $\xrightarrow{\text{possessive}}$ *teenagers'* (e.g. *teenagers' interest*)
> - *elderly* $\xrightarrow{\text{plural}}$ *elderlies* $\xrightarrow{\text{possessive}}$?

- *the pattern of ..... was [the same, the reverse]*

  For SWEETER, the pattern of users' aging was the reverse to that of the JITHUB.com.

Line graphs and talking about trends

How something's changed over time can be effectively shown with a line graph (figure 3). Here is some useful languge:

- There was a[sharp, gradual, moderate, slight, steep] [rise, fall, ...] in ...
- Y [sharply, gradually, dramatically, ...] [rose, fell, dropped, ...]
- between ... and ...

  The academic interest in AI research decreased between 1974 and 1980.
- over the following [X years, X days, ...]

  There was a significant rise in AI studies over the following seven years.

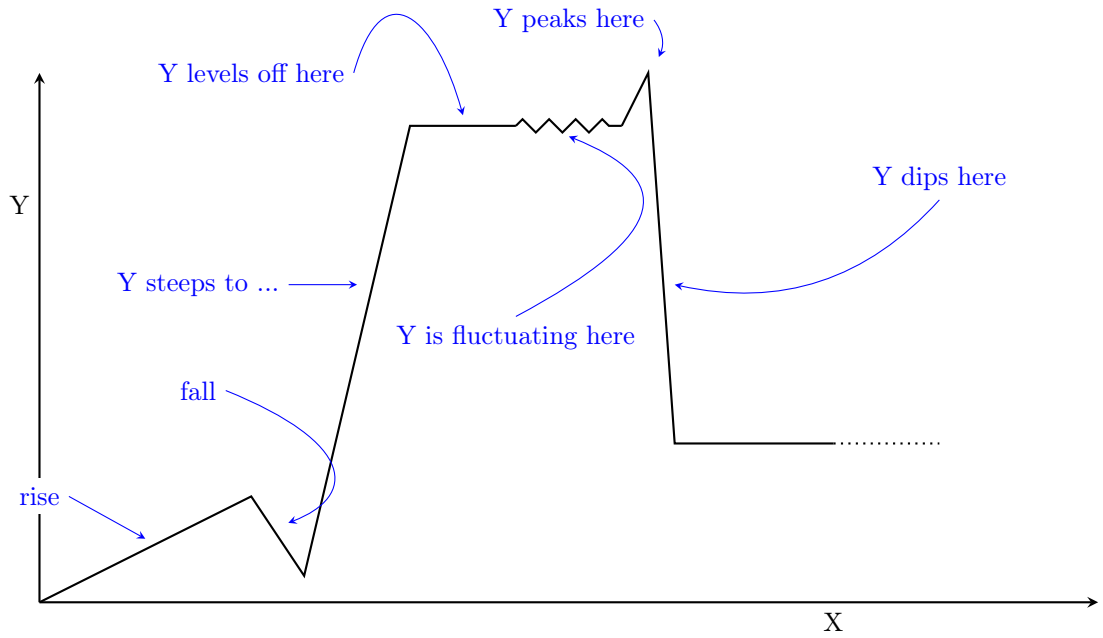


Figure 3: A sample line graph

EXERCISE: Before reading the caption and the text explanations for FIGURE 1.15 in the 4th edition of your textbook for **computer architecture** [Patterson and Hennessy, 2009], take a look at the figure only.

⚠ Only the figure, not the texts!

It plots the clock rate (in MHz) and power (in Watts) for a handful of Intel microprocessors. For each model, you see the two mentioned characteristics and the year the model was introduced. Paraphrase my explanation for the figure and write a couple of paragraphs about it. Do not include your opinions for why the data is this way, just be a passive narrator of the information given by the graph. Then compare what you have written with the explanations in the text. Send me your description and the text's analysis for the reason behind the statistics (in your own language of course, not copied!).

EXERCISE: Repeat the previous exercise for FIGURE 1.1 of [Patterson and Hennessy, 2009]. It shows how many TVs, personal comptuers, and cellphones were manufactured each year in the U.S. over a priod of eleven years; from 1997 to 2007. TV data were availabe only from 2004.

References

[Patterson and Hennessy, 2009] Patterson, D. A. and Hennessy, J. L. (2009). *Computer organization and design: the hardware software interface*. Morgan kaufmann, 4th edition.