Coursera - Information Visualization: Foundations

Assignment on Graph Decoding, Critique and Re-design

Tiago Pereira

Graph Decoding

The data items represent: assorted figures in billions of pounds

The marks used for the data items are: areas

The data attributes are: item name, or label – categorical; amount in billions of pounds – quantitative; item classification – categorical

The visual channels used are: area (2D size) and color hue

Encoding strategy:

- Amount is encoded with area (2D size)
- Classification is encoded with color hue

Graph Critique

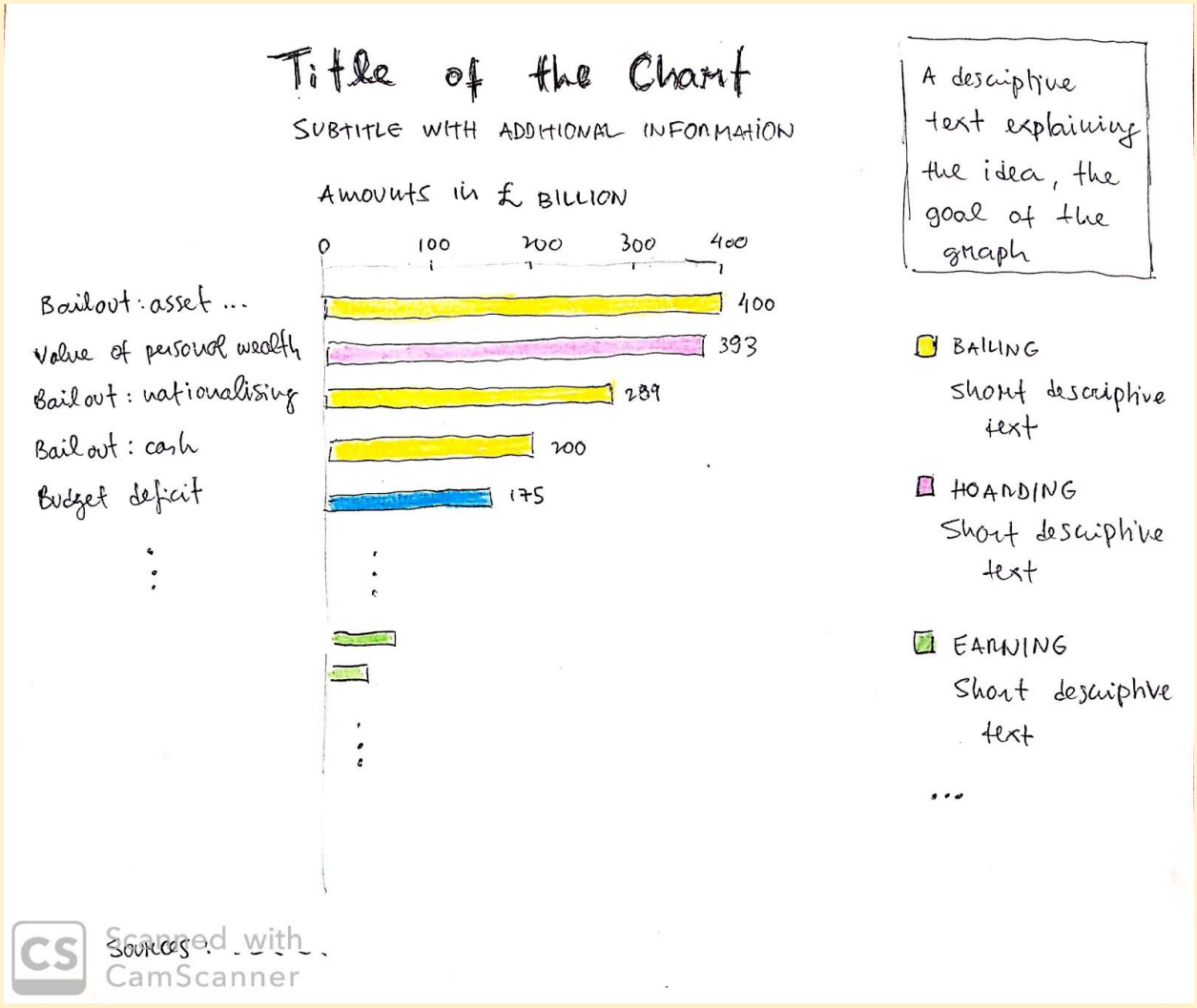
Area size is not the most effective channel to represent a quantitative attribute. Furthermore, the rectangles have different proportions of height/width, making it even harder to compare the areas.

Some colors used in the graph are slightly different from those described in the legend, causing confusion to the reader.

But I think the main issue is that the graph lacks some important and even basic contextual information to allow the reader to even understand what the graph is about. What are all those labels? The data items presented seem somewhat random which may actually be the goal here, but a title / subtitle / small text could clarify what the information presented means. Information that refers to flow amounts (“Amount spent on food yearly”) is presented together with

information that refers to stock amounts (“Africa’s entire debt to Western nations”), therefore making it difficult to assess which values are a flow (and if so, over how much time? when?) and which are stock values.

Graph Redesign



My sketch represents a simple, straightforward bar chart, showing the figures arranged in a descending order by amount.

My design substitutes the rectangles (area marks) of the original chart by simple bars, positioned in a common scale for optimum effectiveness (given that bar charts like that rely on two of the most effective channels, “position on a common scale” and “length (1D size)”. Since the bars are also ordered, the reader can compare any pair of values and instantly assess which one is greater.

I kept the color encoding for the categories, but I provide a space for clarification of the meaning of each category.

Overall, I tried to address the issues I mentioned earlier in this document, adding many contextual components, such as title, subtitle, axes and an improved legend, aiming at achieving a more effective chart. Knowing the original data items, I would probably add even more contextual information, maybe using more descriptive labels (including the information about the amount being a flow or a stock, for example).