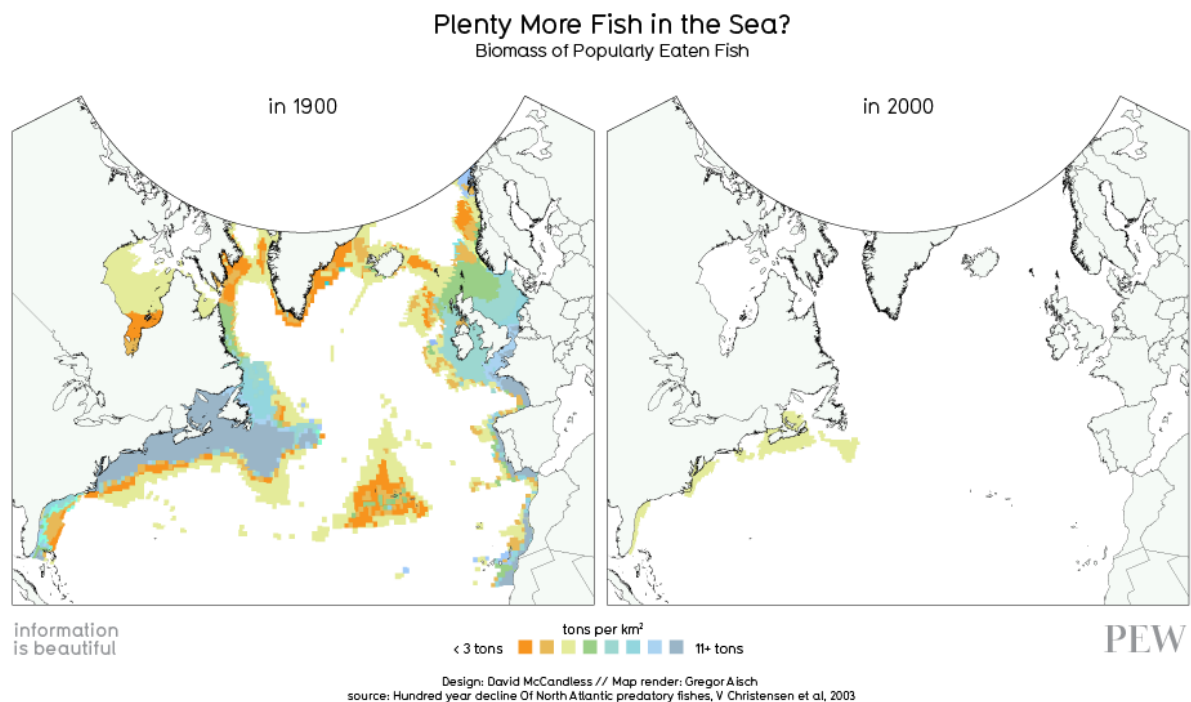**Assignment 9:   Data visualization**

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In this report, four data visualization examples will be discussed. The first three are good illustrations of data, and the last one shows a bad data visualization.

1. Biomass of Popularity Eaten Fish

<http://blog.hubspot.com/marketing/great-visualization-examples>
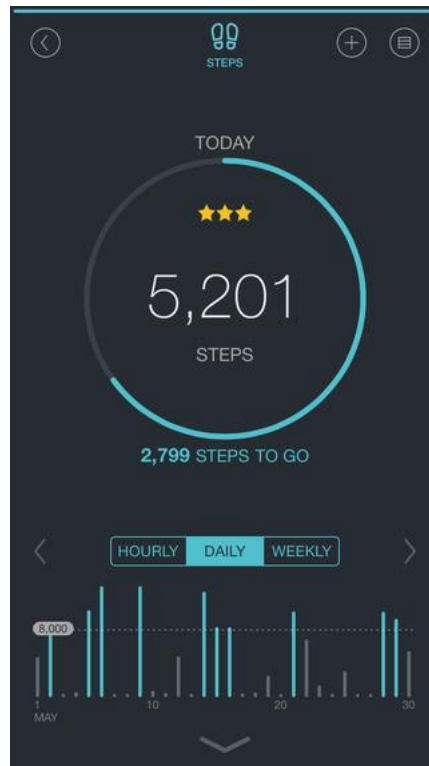
The images above used different colors to clearly show the loss tons of eaten fish per km². By comparison, it can be easily to find that a significant change has occurred in this area. The gradient color bar can present many numbers in a small space, and can greatly encourage the eye to compare different pieces of data.
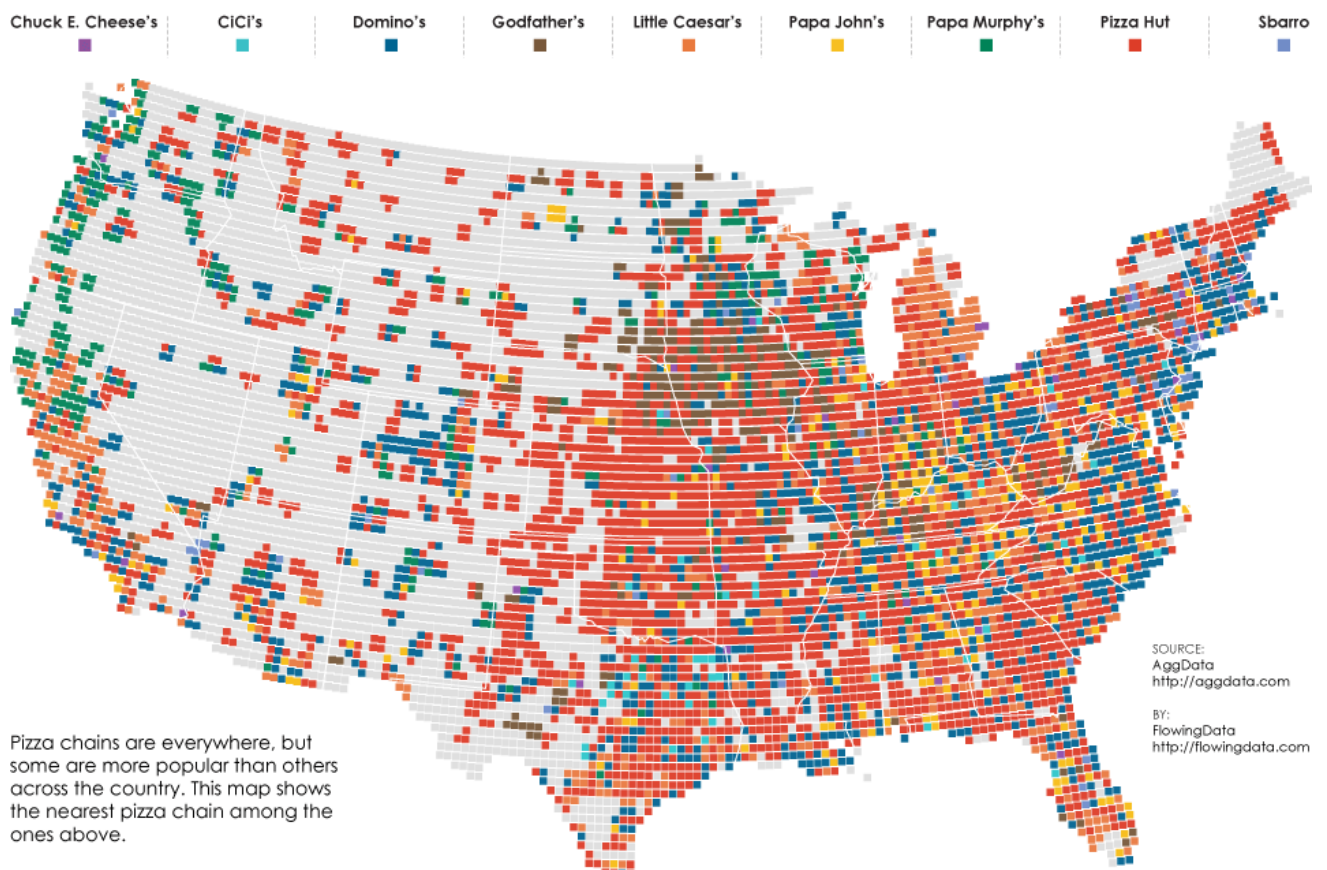
2. FitPort App

The screenshot below is an iOS app called FitPort, which acts as a fitness dashboard for the user. The top of the screen shows clearly which category of the data is showing - steps. Under the title, it uses a circle to show the current steps and the difference with the desired target. In the bottom, bar charts are used to clearly show the comparison of steps through the hours or days. In this data visualization example, numbers and charts are combined smoothly to make the presentation in a very clear manner, and the statistical description of a data set can be integrated properly with charts.

<https://itunes.apple.com/us/app/fitport-your-fitness-dashboard/id914413310?mt=8>

3. Pizza Place Geography

Pizza chains are everywhere, but some are more popular than others across the country. This map shows the nearest pizza chain among the ones above.

SOURCE:
AggData
http://aggdata.com

BY:
FlowingData
http://flowingdata.com

<http://flowingdata.com/2013/10/14/pizza-place-geography/>

The data visualization graph uses the map of United States as a base, with clear and nice data spots to show the nearest pizza place within a 10-mile radius. The data are divided into 8 categories, each represents a pizza company. The graph can directly illustrate the number and distribution of each pizza company. This visualization can leave the reader a direct impression on the datasets, and can present much information on a small space.

4. Comparison of Ratios
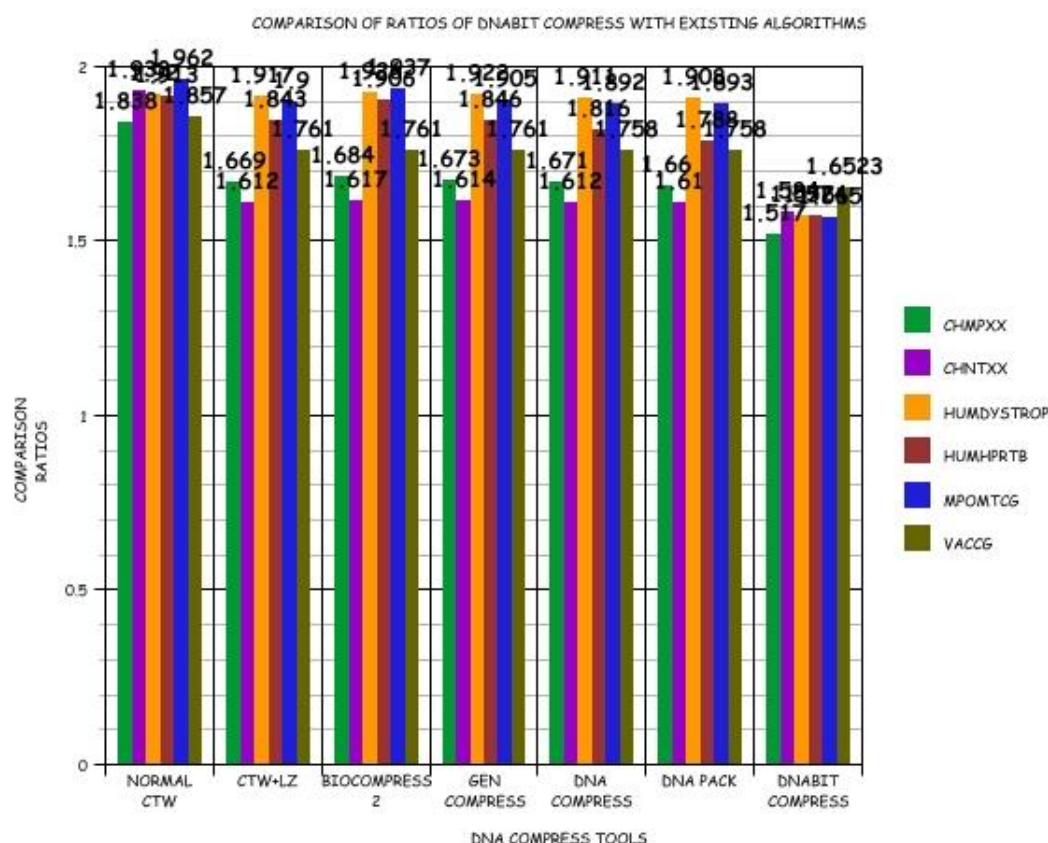
The above bar chart graph is a bad example of data visualization. The idea is good, which is to divide the datasets to 7 categories, and in each categories, 6 kinds of algorithms are compared. However, the visualization result is not clear or not readable. The value of each bar shows overlapped together, and though the color of each algorithm is different, when they combined together, the visual effect is not satisfying. To improve, one method is to divide this on graph to 7 sub-graphs, each category has one graph. This way can help the graph to show more clearly, and meanwhile can be easily compare to other categories. Another method is to combine the 6 algorithms in each category to be one bar. This way can maintain the information can be shown in one graph, and can be clearly illustrate the performance of each algorithm in each category.