

Summary
of
The eyes have it:
A Task by Data Type Taxonomy for Information Visualizations

1. The concept

As the Visual Information-Seeking Mantra is the only a starting point for designing advanced graphical user interfaces, this paper offers a new way called “task by data type taxonomy” to understand the rich and varied set of information visualizations better.

2. The Implementation

To achieve the goal the paper offers a task by data taxonomy with seven data types and seven tasks. The seven data types are one-, two-, three-dimensional data, temporal and multi-dimensional data, and tree and network data. The seven tasks are overview, zoom, filter, details-on demand, relate, history and extracts.

3. Related work

This work build upon the previous work of basic principle of Visual Information Seeking Mantra: Overview, first, zoom and filter, then details-on-demand.

4. Data characteristics

- a. spatial dimensionality: 2D
- b. temporal dimensionality: static
- c. resolution: uniform
- d. grid structure: unstructured
- e. data type: multi-variate data

5. Visualization techniques

Dynamic queries, Tree-Maps, fisheye views, parallel coordinates, starfields and perspective walls.

6. Application domain

Visualization of digital libraries for structured databases, textual documents and multimedia.

Summary of The Structure of the Information Visualization Design Space

1. The concept

This paper proposes an organization of the information visualization literature and illustrates it with a series of examples.

2. The Implementation

In this work the visual processing use is mostly concerned. The interactive visual processing depends on a series of visual communication acts by the machine. These communicative acts map data and intent into visualization.

3. Related work

The analysis of this paper builds on recent attempts to understand parts of the design space. The analysis starts from an expanded version of Bertin's and Mackinlay's analysis of the semiotics of graphics and notes groups of techniques based on similarities of their data to visualization mappings.

4. Data characteristics

- a. spatial dimensionality: time-dependent
- b. temporal dimensionality: static
- c. resolution: uniform
- d. grid structure: structured
- e. data type: scalar

5. Visualization techniques

Dynamic queries, Feiner's Worlds-Within-Worlds techniques, Tree-Maps

6. Application domain

Ozone visualization, SDM, Film Finder, World within worlds, Table Lens, New York Stock Exchange, Internet traffic on earth, Hyperbolic browser, Cone tree, SeeSoft, Themescapes.