Explode to Explain - Illustrative Information Visualization

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Motivation

- Observation: Access to successful Information Visualization techniques is often difficult for new users at a first glance, due to complexity (arrangement, abstraction, functionality...)

- Also: Scope of some techniques may be extended by using additional visual elements e.g. by labeling
• Arrangement drawing originating from technical drawing

• Classification:
  – Geometrical
  – Semantical
  – Hybrid
General Approach

1. Select a region of interest (ROI) as key element for explanation.
2. Generate an explosion based on ROI and underlying technique.
3. Explode comprehensible.
4. Superimpose explanatory elements.
Pixel-oriented Visualization: How are those pixels arranged?
climat dataset: daily data of 100 years ≈ 36500 data items, each with 10 attributes
Explaining techniques

- Implicit Hierarchy Visualizations: Where is the underlying hierarchy?
Explaining techniques

[file system \(\approx 250\) nodes]
Explaining data

- Accentuating and labeling several pixels:
Explaining data

- Accentuating and labeling hierarchy nodes:

[phylogenetic dataset ≈ 36000 nodes]
Summary & Outlook

• Exploded Views in information visualization are...
  ... a very first attempt to ease the access to complex information visualization.
  ... able to support the explanation of data.
  ... an interactive tool.
  ... no new visualization technique (original views are kept), but an enhancement to existing techniques.

• Further investigations on automated ROI selection
• Comparative user study in autumn 2007
Thank you for your attention.