

## Lecture 14

### Chapter 14 Information Visualization

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### Advanced filtering and search interfaces (Chap 13.4)

- Visual searches
  - Specialized visual representations of the possible values
  - E.g. dates on a calendar or seats on a plane
  - On a map the location may be more important than the name
  - Implicit initiation and immediate feedback

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### Information visualization (Chapter 14)

- Information visualization Definition
  - Use of interactive visual representations of abstract data to amplify cognition
  - categorical variables and the discovery of patterns, trends, clusters, outliers, and gaps
  - Innovative ways of visualizing the data
- Compare to Scientific visualization
  - continuous variables, volumes and surfaces

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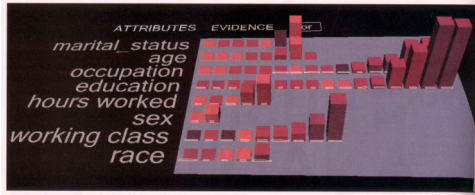
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## 3D Histogram



Who earns > \$50,000?

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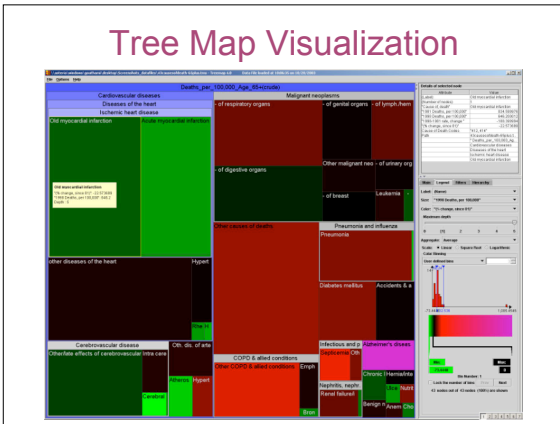
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## Tree Map Visualization



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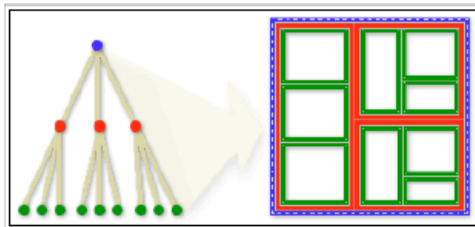
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## How a Tree Map Works



<http://www.hivegroup.com/>

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## Summary

**Problem: Huge volumes of computer-stored data available**

- Databases
  - Structured relational Databases
  - Multimedia document libraries
- Websites
- Websites and Databases: Data mining

**BUT searching and discovering is difficult:**

- Traditional interfaces have been difficult for novice users
  - Command Languages
- Traditional interfaces have been inadequate for expert users
  - Difficulty in repeating searches across multiple databases
  - Weak methods for discovering where to narrow broad searches
  - Poor integration with other tools

**Solution: Developing more powerful search and visualization methods, integration of technology with task**

- Searching in Textual Documents and Database Querying (Chapter 14.2)
- Multimedia Document Searches (Chapter 14.3)
- Advanced Filtering and Search Interfaces (Chapter 14.4)
- Designers are just learning how to present large amounts of data in orderly and user-controlled ways (Chapter 14.5)
  - "Information Visualization"

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