Übung zur Vorlesung

Informationsvisualisierung

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Text and Documents

Text and Documents: Basics

Characteristics

- Nominal data
- Interesting properties:
  - Meta data
  - Structure
  - Statistics
  - Semantics…

Goals

- Detecting patterns
- Keyword search
- Cluster maps

Action Science Explorer

The Action Science Explorer [1]

http://www.youtube.com/watch?v=wdp-jZUqgcU

The Action Science Explorer [1]

Goals

- Find key authors and key papers
- Explore similar papers
- Explore historical development
- Summarize research fields

Interaction

- Linking and brushing
- Overview and detail
- Details on demand
- Dynamic queries

Arc Diagrams

Arc Diagrams [4]

- Visualization complex patterns of repetitions

[4]

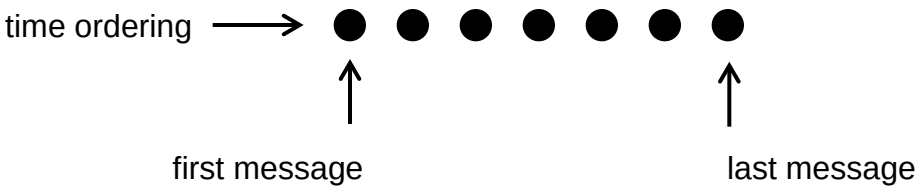
Thread Arcs [2]

- Visualization of e-mail threads
- Design goals:
  - Keep chronology
  - Show relationships
  - Compactness
  - Stability
  - Quick scanning
  - Quick interaction
  - Easy interpretable

© Bernard J. Kerr, IBM Research, 2003

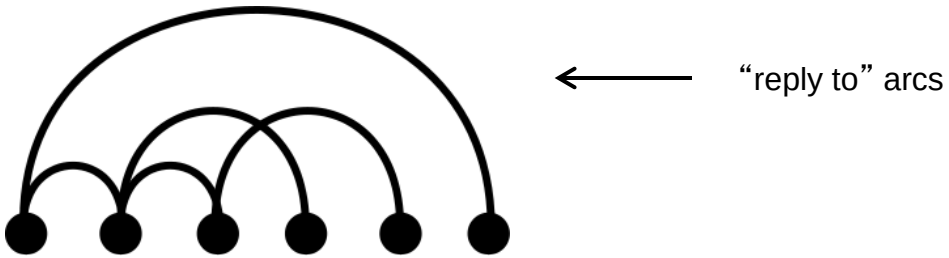
Thread Arcs

- Chronological ordering
  - width = linear function of thread size



[2]

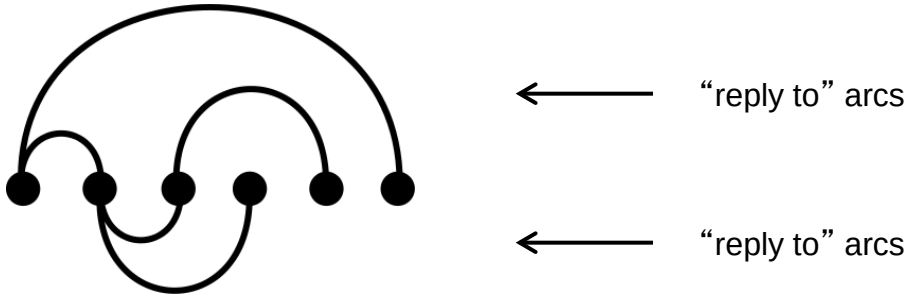
- Relationships



[2]

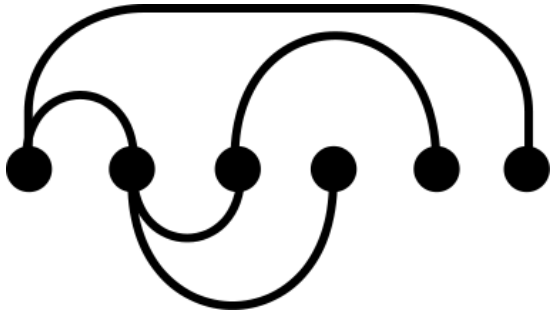
Thread Arcs

- Improvements
  - “The relationships between messages are clearer when arcs are drawn above and below nodes.” [2]

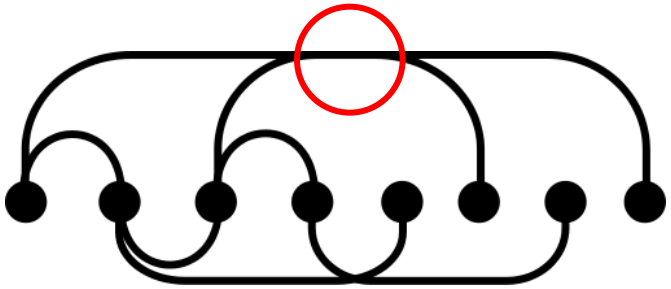


Thread Arcs

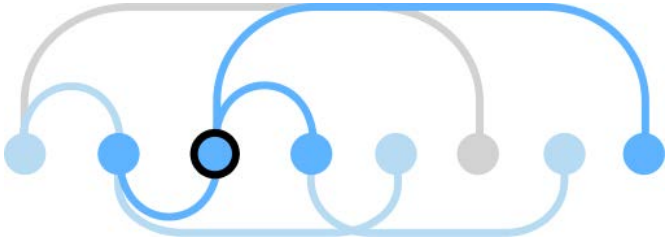
- Improvements
  - “Constraining the maximum height of the arcs makes the visualization more compact.” [2]



  - Problem: Overlap

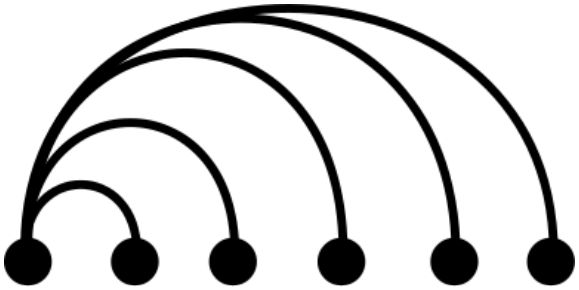


Solution: selection highlighting



Thread Arcs

- Conversation types:
  - Advantages: makes different conversations easily comparable



bushy

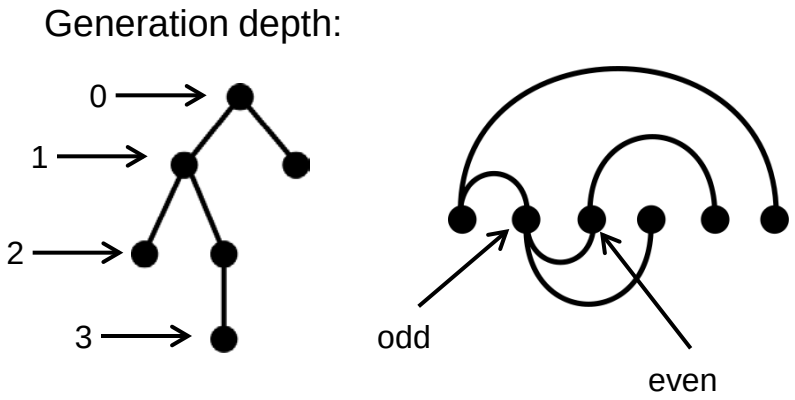
Several answers per message
=> Could be a group conversation

narrow

[2]

One answer per message
=> Could be a private conversation

Thread Arcs

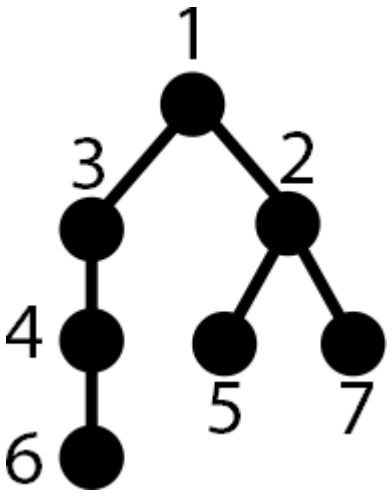


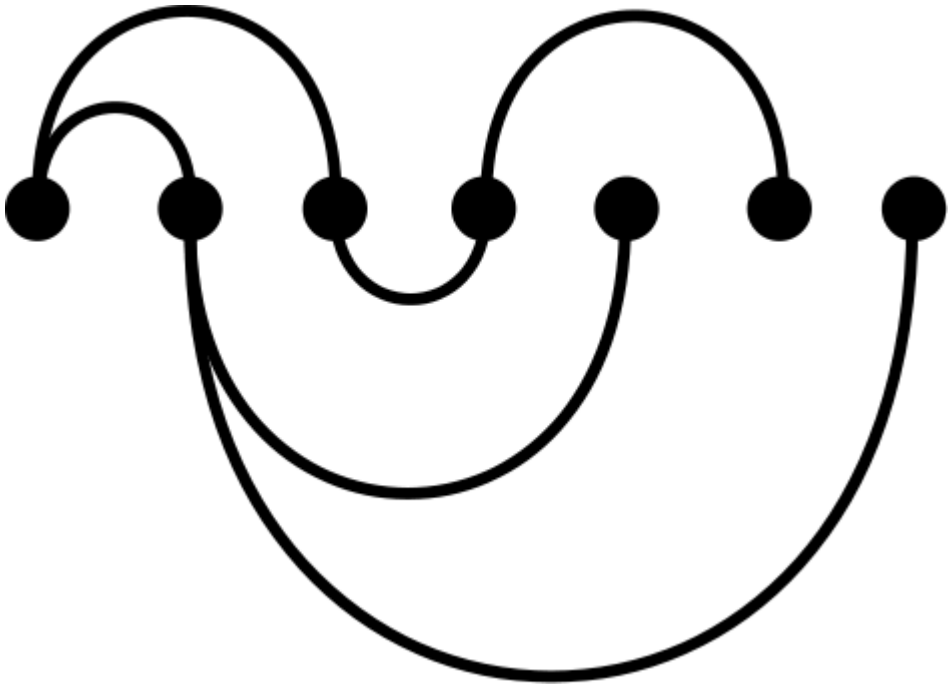
- Pseudo-code [2]:

```
sort all messages chronologically
find the generation depth of each message
for each message
    if the message is the root then
        place the node at the starting position and don't draw an arc
    else
        place the message to the right of the last message
        if the message generation depth is odd then
            draw an arc above the line to the message's parent
        else
            draw an arc below the line to the message's parent
next message
```

Create a thread arc for the following message structure (represented as a tree diagram).

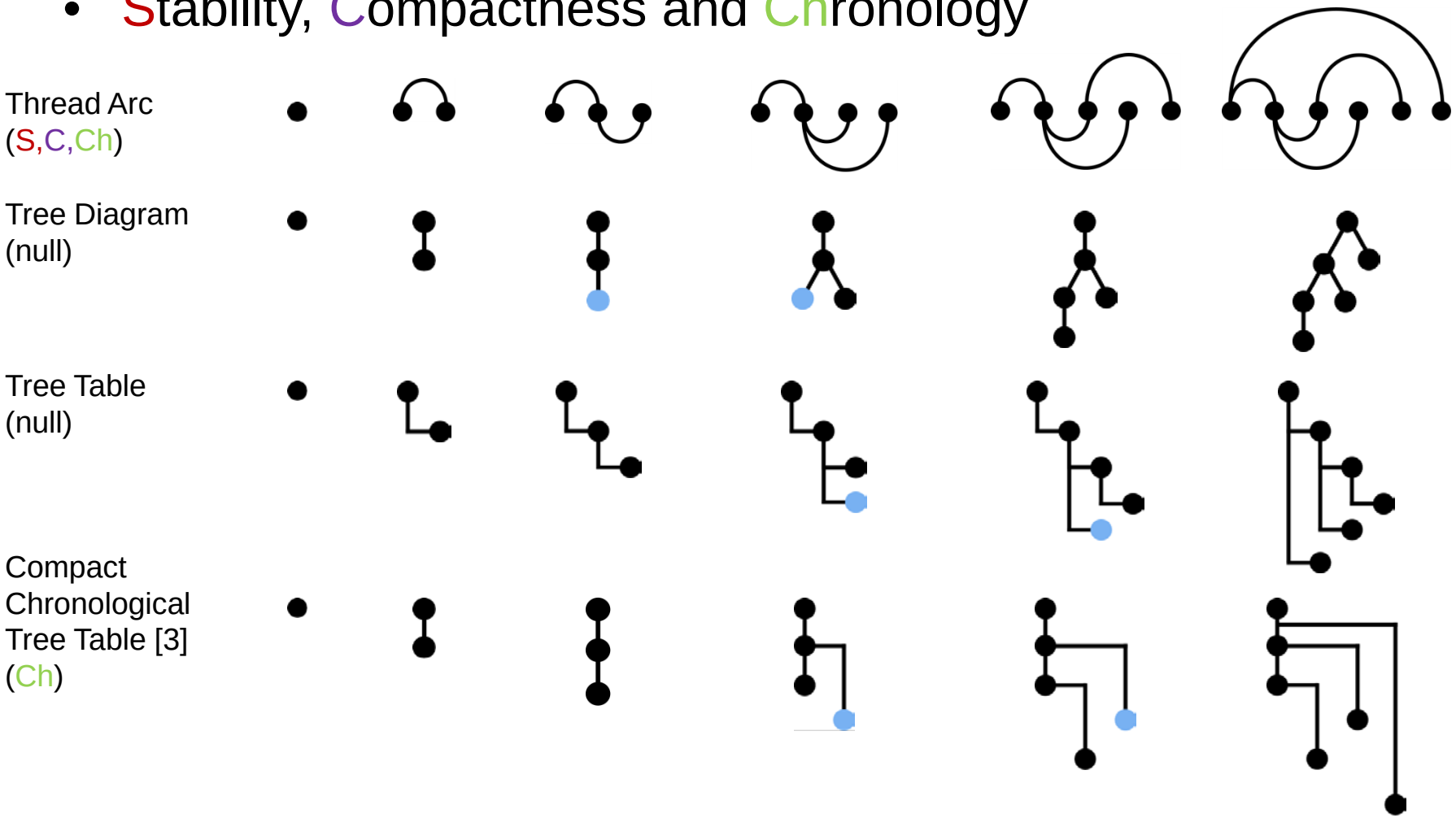
The number represent the chronological order.





Thread Arcs

- Stability, Compactness and Chronology

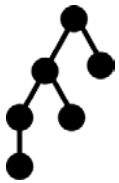


[2]

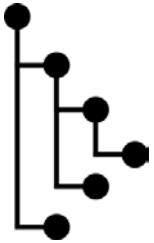
Thread Arcs

- Chronology

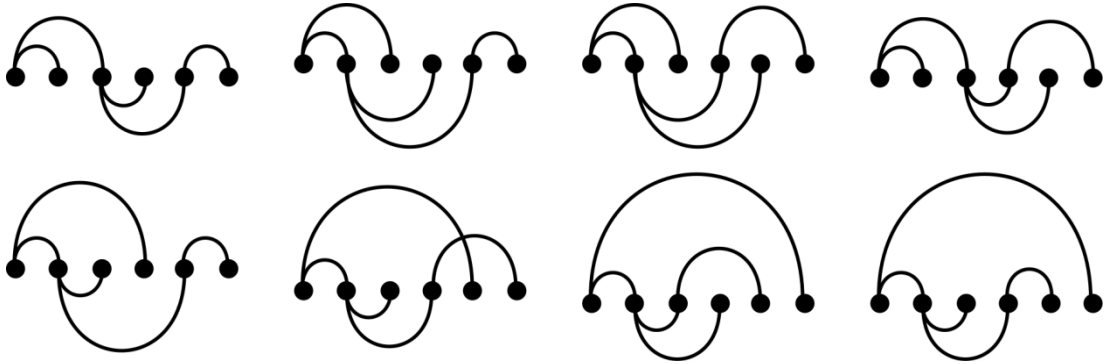
Tree Diagram



Tree Table



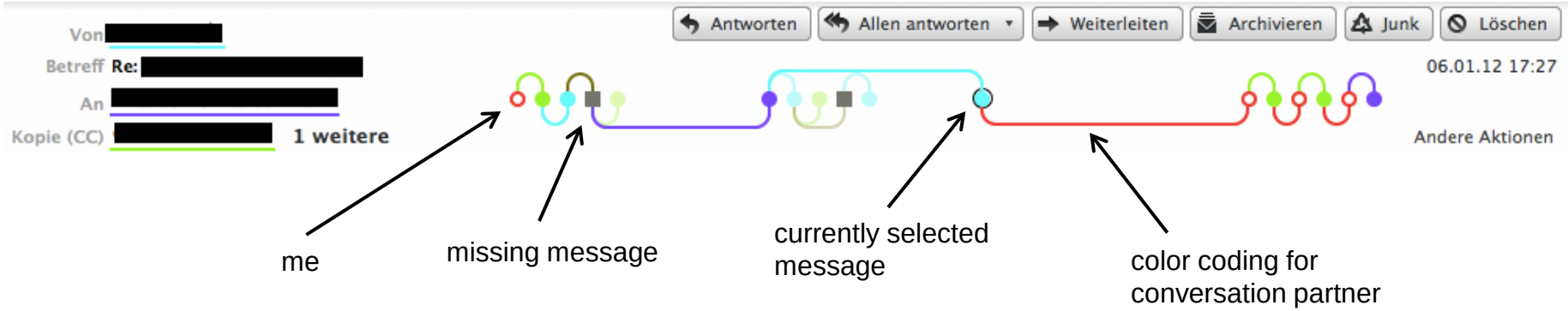
Thread Arc

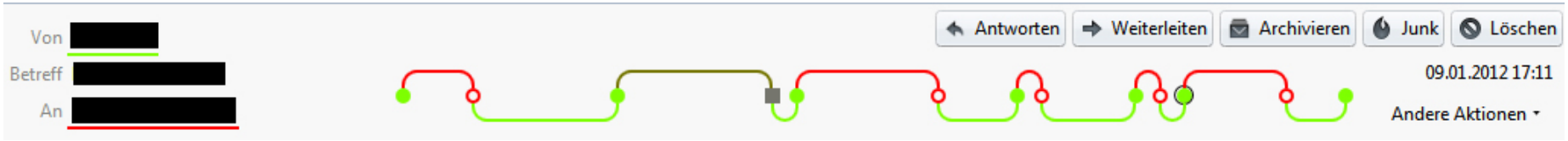


[2]

Thread Arcs

- Example: ThreadVis (Thunderbird)





Project: Barkeeper

Barkeeper: Endpräsentation

Demo

- Lauffähig?
- Wer hat was gemacht?
- Dynamisch?, Interaktiv?, Skalierbar? …
- Welche Paradigmen wurden umgesetzt?

Ergebnis

- Welche Fragen können beantwortet werden?
- Was wurde herausgefunden?

Future Work

- Was fehlt? Was funktioniert noch nicht?
- Wie könnte das System erweitert werden?

Klausur

- **12. Februar: 10:00-12:00 Uhr**
- **Anmeldung ab sofort möglich**
- **Abmeldung bis 10. Februar 23:59**
- **Closed Book**

- **Klausurvorbereitungen in den Übungen**

References

1. Gove, R.; Dunne, C.; Shneiderman, B.; Klavans, J.; Dorr, B.; , "Evaluating visual and statistical exploration of scientific literature networks," *Visual Languages and Human-Centric Computing (VL/HCC), 2011 IEEE Symposium on* , vol., no., pp.217-224, 18-22 Sept. 2011
2. Kerr, B. THREAD ARCS: An Email Thread Visualization. In Proceedings of the IEEE Symposium on Information Visualization, Seattle, WA, October 19-21, 2003.
3. Rohall, S.L., Gruen D., Moody P., and Kellerman S. Email Visualizations to Aid Communications. Late Breaking, Hot Topic Proceedings of the IEEE Symposium on Information Visualization, San Diego, CA, October 22-23, 2001, pp. 12-15.
4. Wattenberg, M. Arc Diagrams: Visualizing Structure in Strings. Proceedings of the IEEE Symposium on Information Visualization, Boston, MA, October 28-29, 2002 pp. 110-116.