Temporal Information Retrieval

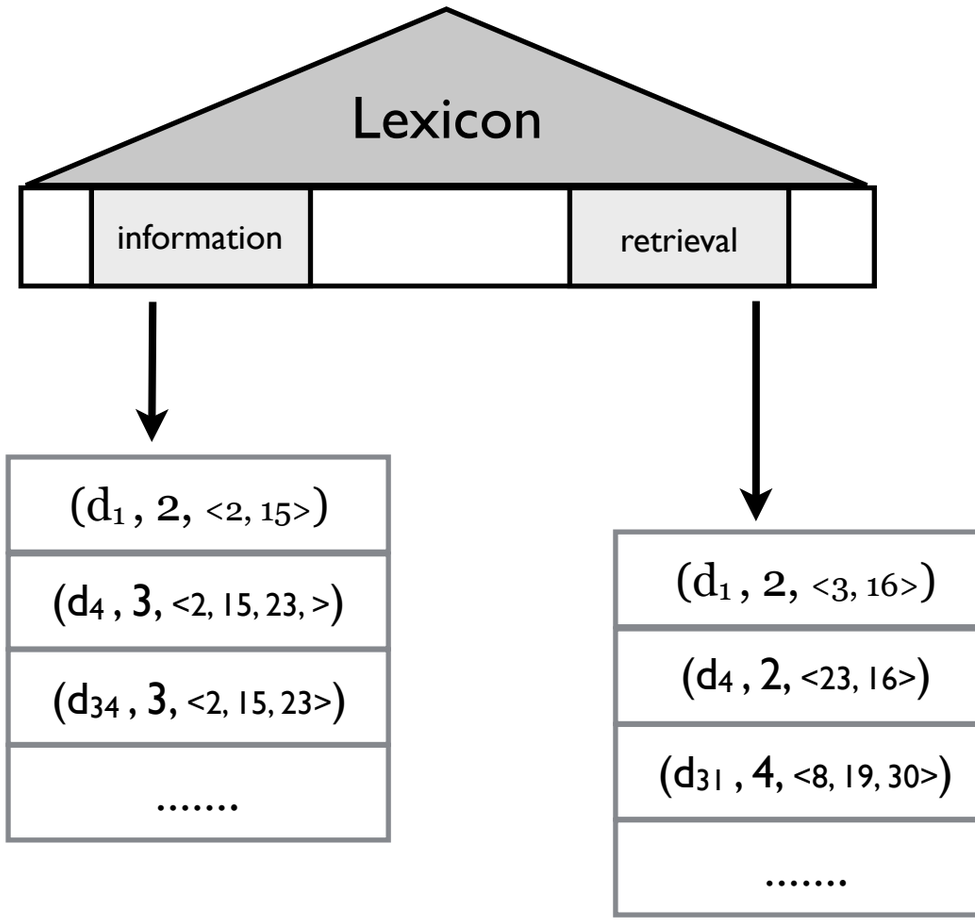
Wintersemester 2015/16

Course Wrap Up

Course Outline

- **Indexing: Indexing for Temporal Retrieval**
- **Indexing: Query Processing and Compression**
- **Queries: Foundations of Temporal Analysis, Embeddings**
- **Queries: Query Modelling**
- **Ranking - Language Models**
- **Ranking - Learning to Rank and Evaluation**

Indexing



- Indexing Basics
- Index Construction
- Temporal Indexing basics and challenges
- Index Partitioning for Temporal queries
- Vertical and Horizontal Partitioning, Index maintenance

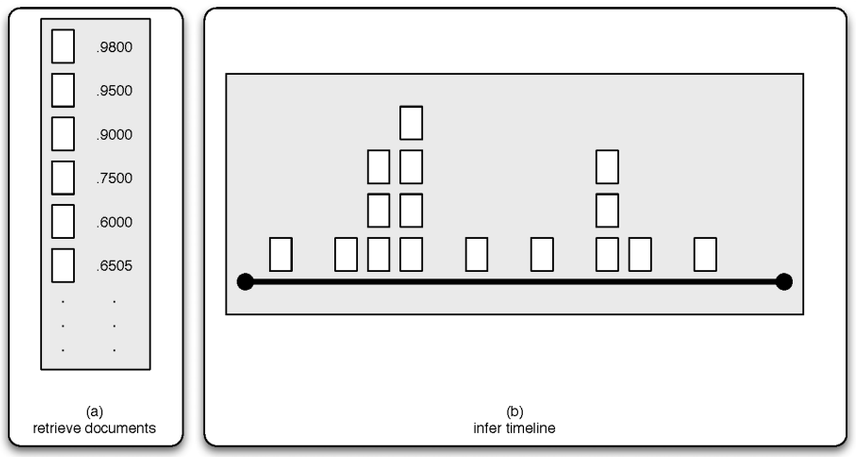
Query Processing and Compression

- Compression Basics in Inverted Indexes
- Compression Algorithms
- Temporal Coalescing
- Query Processing — DAAT vs TAAT

Time-series Analysis

- Time-series Forecasting
- Smoothing Techniques
- Periodicity Detection
- Matching Time-Series

Query Modelling



- Query Modelling using pseudo-relevance
- Autocompletions, Suggestions, Expansions
- Temporal Profiling using Language Models
- Word Embeddings

Ranking

- Probabilistic Foundations
- Language Modelling for Ranking
- Smoothing using Collection
- Evaluation Measures

Learning to Rank

- Usage of multiple features
- SVM for classification and ranking
- Pointwise Learning to rank
- Pairwise Learning to rank
- Listwise Learning to rank

Oral Exam

- Schedule is up on the website with show timings 1st week of February
- Each 25 minute slot
- Choose 2 favourite topics - Indexing, Queries, Ranking
- Practice a bit of Math, only 1 problem

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Thesis Possibility

- Get in touch with me for thesis topics/ research projects
- Re-using infrastructure for projects
- Better performance in projects + exams = more chances
- Build cool stuff which you can show off

Thesis Style

- Work on Cutting edge research problems
  - Big Datasets, real-life problems,
    - make yourself market worthy or research worthy
- 40% Theoretical foundations + 40% Experimental Evaluation + 20% writing = 100% fun
- We adapt depending on the strong points and style
- Possibility for a publication or Demo or both


The End?