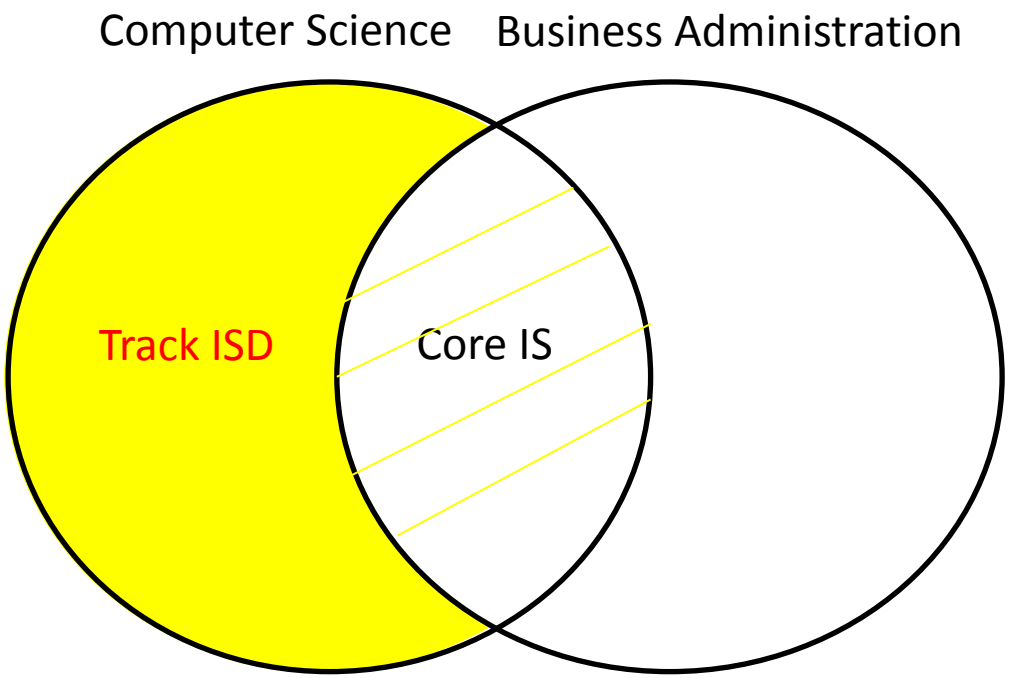
INFORMATION SYSTEMS DEVELOPMENT

TRACK PRESENTATION

JAN ERNSTING

INFORMATION SYSTEMS



Required Skills for ISD: Programming, Software Engineering, Databases, Math

TRACK ISD: COURSES

- Winter Term
  - Logic Specification and Programming (Prof. Kuchen)
    Mon 10:15 h, Fri 08:15 h; Leo 18
  - Data Integration (Prof. Vossen)
    Wed 10:15 h, Thu 16:15 h; Leo 18

- Summer Term
  - Advanced Concepts of Software Engineering (Prof. Kuchen)

LOGIC SPECIFICATION AND PROGRAMMING

MAIN CONTENTS

- Logic Programming (Prolog)
- Constraint Solving
- Artifial Intelligence (selected aspects)
- Deductive Databases (Datalog)
- Business Rules Management Systems (Drools)
- Temporal Logics and Model Checking

STRUCTURE

- Lecture
- Exercises (every 14 days)

LOGIC SPECIFICATION AND PROGRAMMING

GOALS

- Knowing and being able to apply these concepts and formal methods
- Hands-on experience with corresponding tools and languages

ADVANCED CONCEPTS OF SOFTWARE ENGINEERING

MAIN CONTENTS

- Web Applications (using JSF, EJB)
- Enterprise Application Integration
  - Web Services
  - Message-Oriented Middleware
- Model-Driven Software Development
  - Model-to-text Transformation
  - Model-to-model Transformation
  - Domain Specific Languages

STRUCTURE

- Lecture
- 4 Practical Assignments solved in small groups

ADVANCED CONCEPTS OF SOFTWARE ENGINEERING

GOALS

- Knowing and being able to apply these concepts and technologies
- Hands-on experience with corresponding tools and technologies

DATA INTEGRATION

Data Integration

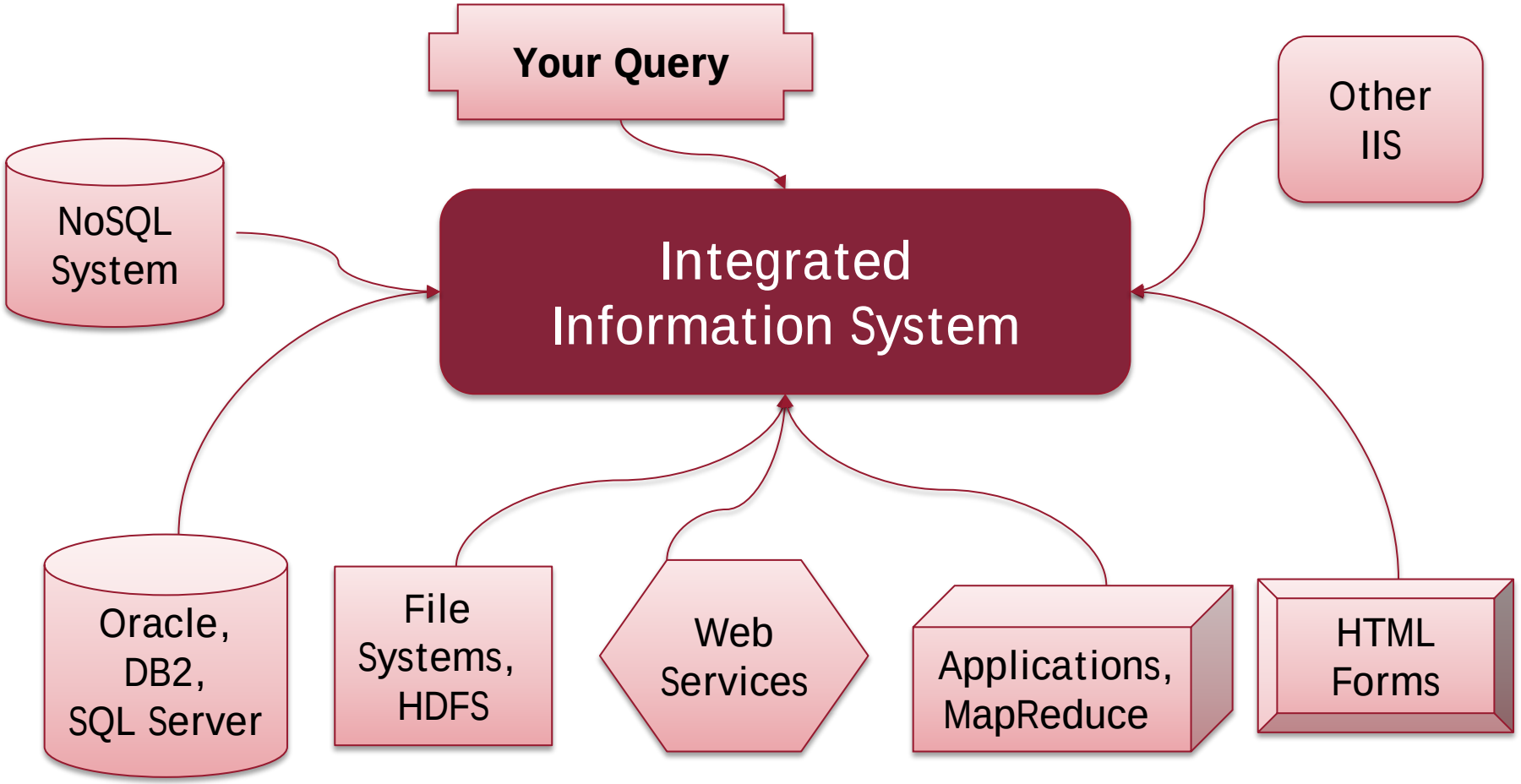
Lecture:
Data Integration

Projects:
Data Integration

GOALS

- To familiarize the audience with the problems, issues, solutions, techniques, and tools relating to data integration
- To recognize the importance of the field and its positioning
- To make the audience aware of the relevant sources and research
- To get some initial hands-on experience in data integration

THE DATA INTEGRATION SCENARIO



DATA INTEGRATION: USE CASES

- Two or more databases should be joined
  - the underlying sources are multiple and heterogeneous
  - e.g., companies join their databases after a merger
- Data is put in a data warehouse
- Data is collected for commercial purposes and needs various forms of processing for that
- Search engines collect data from the Web in order to be able to answer search queries in a uniform and comprehensive way