

# Data Warehousing

## 資料倉儲

### Data Warehousing, Data Mining, and Business Intelligence

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Tue. 8,9 (15:10-17:00) L413

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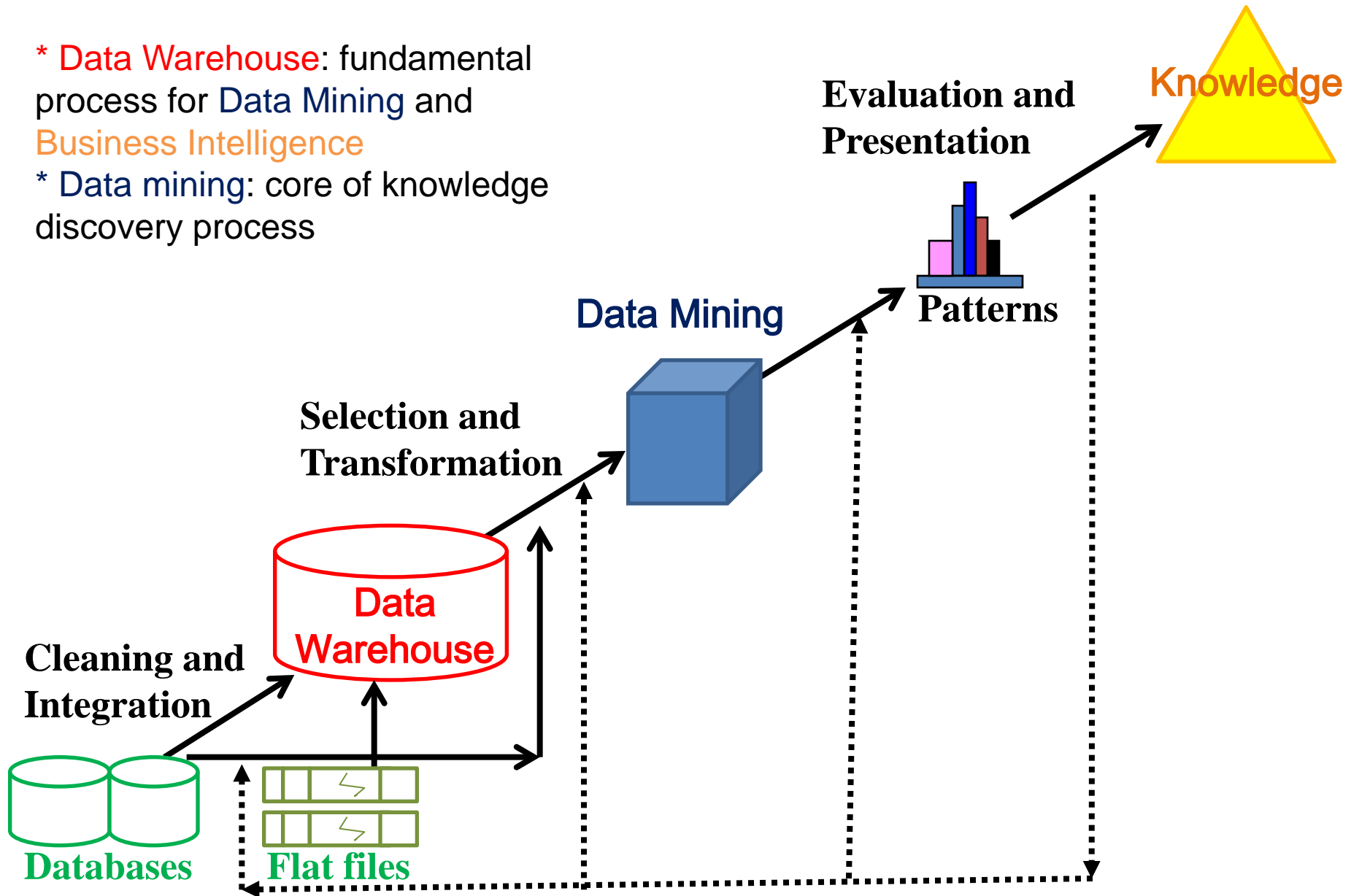
2011-02-22

# Syllabus

- 1 100/02/15 Introduction to Data Warehousing
- 2 100/02/22 Data Warehousing, Data Mining, and Business Intelligence
- 3 100/03/01 Data Preprocessing: Integration and the ETL process
- 4 100/03/08 Data Warehouse and OLAP Technology
- 5 100/03/15 Data Cube Computation and Data Generation
- 6 100/03/22 Association Analysis
- 7 100/03/29 Classification and Prediction
- 8 100/04/05 (放假一天) (民族掃墓節)
- 9 100/04/12 Cluster Analysis
- 10 100/04/19 Mid Term Exam (期中考試週)
- 11 100/04/26 Sequence Data Mining
- 12 100/05/03 Social Network Analysis and Link Mining
- 13 100/05/10 Text Mining and Web Mining
- 14 100/05/17 Project Presentation
- 15 100/05/24 Final Exam (畢業班考試)

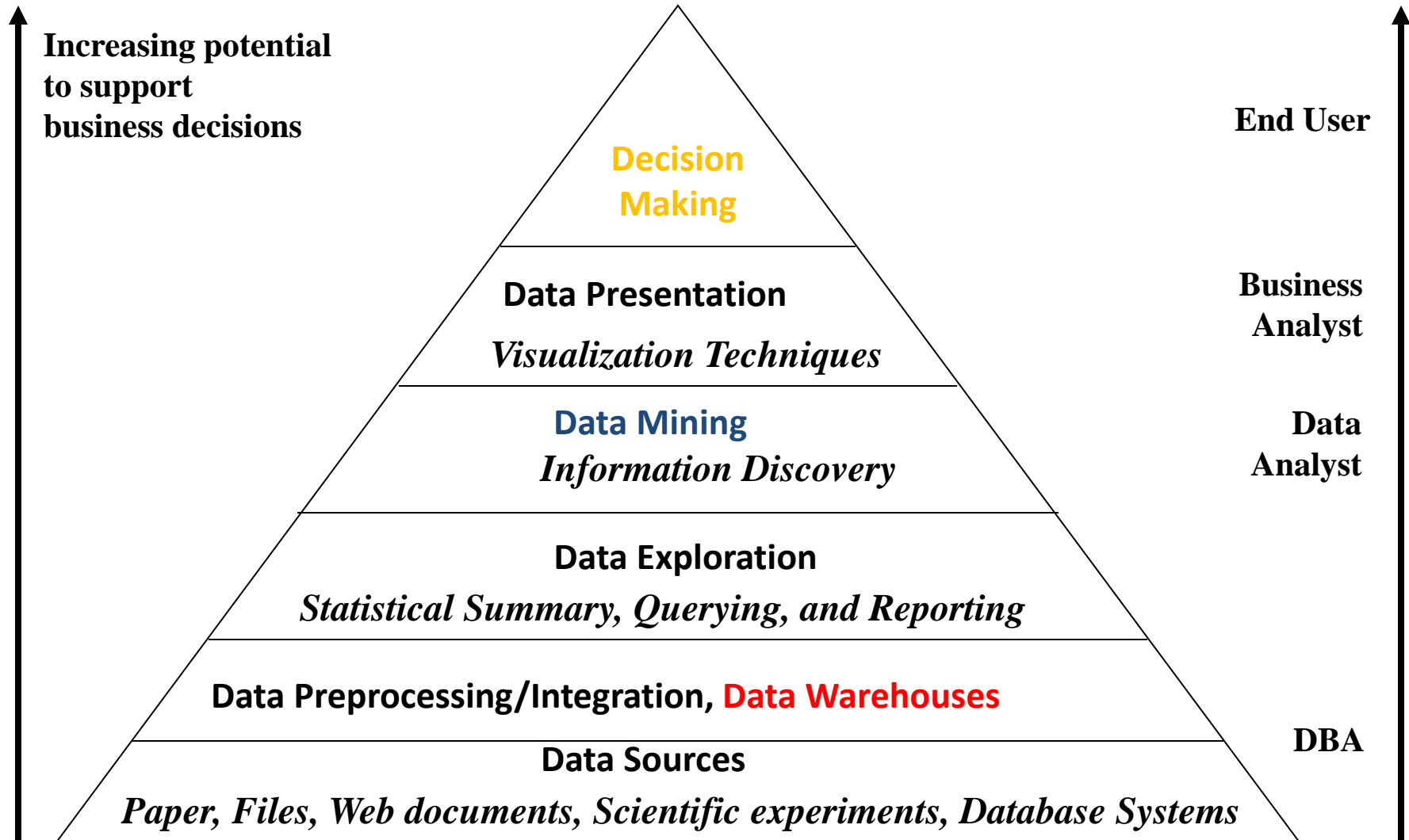
# Knowledge Discovery (KDD) Process

- \* **Data Warehouse**: fundamental process for **Data Mining** and **Business Intelligence**
- \* **Data mining**: core of knowledge discovery process

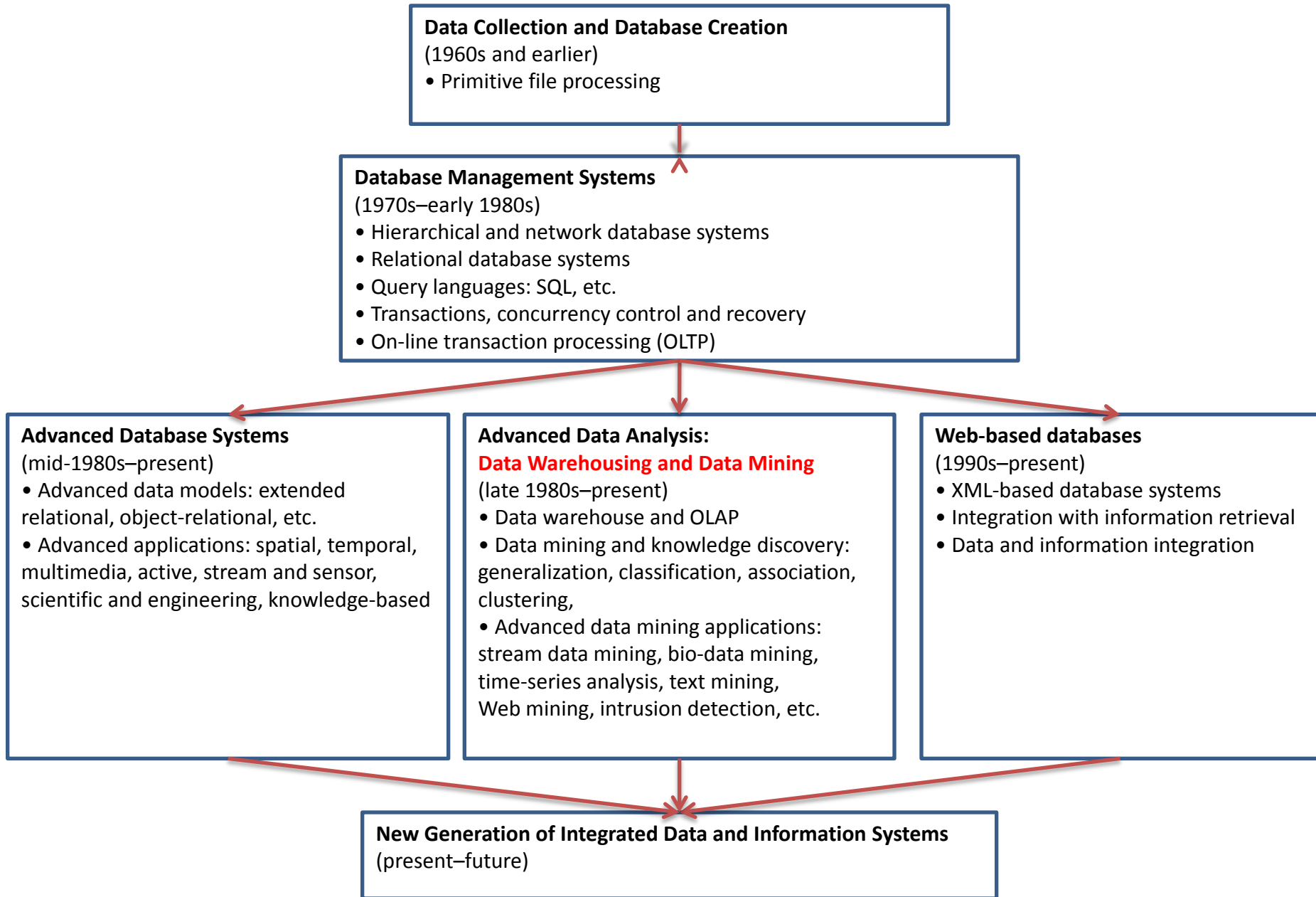


# Data Warehouse

## Data Mining and Business Intelligence



# Evolution of Database Technology



# Evolution of Database Technology

- 1960s:
  - Data collection, database creation, IMS and network DBMS
- 1970s:
  - Relational data model, relational DBMS implementation
- 1980s:
  - RDBMS, advanced data models (extended-relational, OO, deductive, etc.)
  - Application-oriented DBMS (spatial, scientific, engineering, etc.)
- 1990s:
  - Data mining, data warehousing, multimedia databases, and Web databases
- 2000s
  - Stream data management and mining
  - Data mining and its applications
  - Web technology (XML, data integration) and global information systems

# IBM Watson: Smartest Machine On Earth (2011)

- IBM Watson: Final Jeopardy! and the Future of Watson,  
[http://www.youtube.com/watch?v=II-M7O\\_bRNng](http://www.youtube.com/watch?v=II-M7O_bRNng)
- Smartest Machine On Earth (2011) 1/4,  
<http://www.youtube.com/watch?v=qIDLd1HUjxY>
- Smartest Machine On Earth (2011) 2/4,  
<http://www.youtube.com/watch?v=gg656SKnVQM>
- Smartest Machine On Earth (2011) 3/4 ,  
[http://www.youtube.com/watch?v=hZ7Hsob-h\\_Q](http://www.youtube.com/watch?v=hZ7Hsob-h_Q)
- Smartest Machine On Earth (2011) 4/4,  
[http://www.youtube.com/watch?v=ozQG\\_jIB8SE](http://www.youtube.com/watch?v=ozQG_jIB8SE)

# References

- Jiawei Han and Micheline Kamber, Data Mining: Concepts and Techniques, Second Edition, 2006, Elsevier
- Lucene, <http://en.wikipedia.org/wiki/Lucene>
- Machine Learning, [http://en.wikipedia.org/wiki/Machine\\_learning](http://en.wikipedia.org/wiki/Machine_learning)