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Organization of data and knowledge bases

Lecture 2. Data Base Architecture

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CONTENTS

- ANSI/SPARC architecture
- Conceptual level
- External level
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- Mappings
- Data base management system

Different Meaning of «architecture»

- Functional architecture
- Software architecture
- Hardware architecture
- Network architecture
- Implementation architecture
- **Information architecture**

Architecture ANSI/X3/SPARC

- ANSI/X3/SPARC – Study Group on Data Base Management Systems
- Areas of DB technology standardization
- Only DB interfaces may be standardized
- Interfaces □DB architecture

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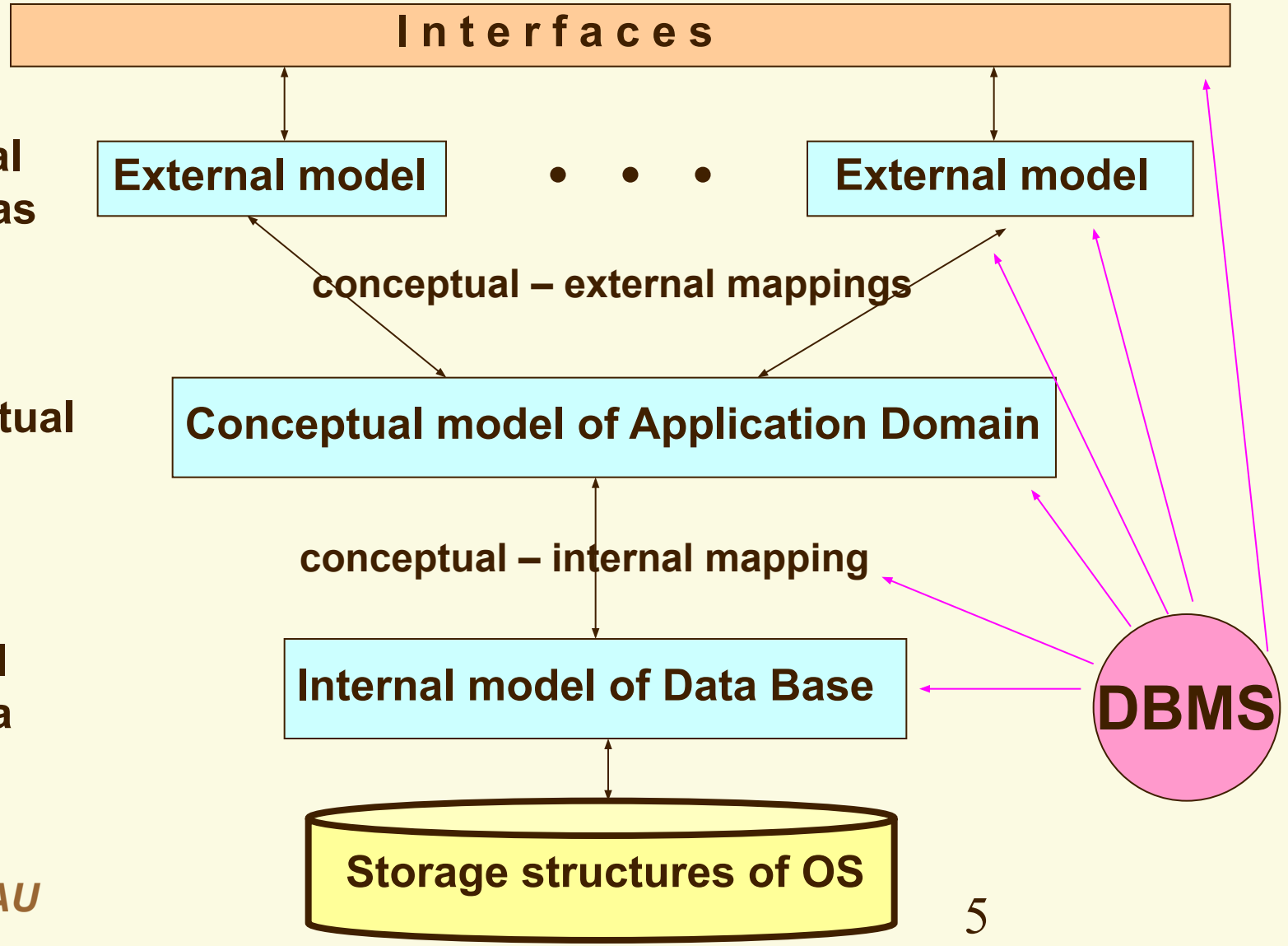

Conceptual Level

- A ***uniform basis*** of understanding of AD
- Includes only ***conceptually relevant*** aspects
- Feature of ***allowed evolution*** of DB
- ***Basis of mappings*** external-intenral levels
- Supports the ***data independance***
- Supports ***centralized administration***
- Stability

External Level

- Convinient data representation
- Promotes logical independance
- Promotes data safety problem
- Supports different external interfaces

Internal Level

- Provides DB adjustments
- Supports data storage structures and access methods
- DB efficiency, prformance, redundancy
- Physical data independance
- Promotes data safety problem
- Mapping internal schema to the OS data structures

Mappings

- External-conceptual
- Conceptual-internal
- and vise-versa

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