

Normalizing Data

Normalizing Data (History)

- **Every textbook & class on relational databases focuses on Normalizing Data**
- **Normalizing is the theoretical super structure of the relational model**
- **In the beginning (1970) this theory revolutionized the way computer scientist thought about information storage and retrieval**

Normalizing Data (Today)

- **Large Enterprise RDBMS require efficient data structures and the theory of Normalization shapes the design of these systems**
- **Personal and small business RDBMS can literally ignore the Normal forms and still be productive database tools for individuals and small groups**

Access & Normalization

- **Access permits data to be stored and retrieved without regard to most Normalization rules.**
- **Access's lack of concern for Normalization makes creation of a database easier but two of the major RDBMS benefits – reliability and flexibility are diminished or lost**

Normalization (lite 1)

- **Normalization is always recommended because of the improved performance, reliability and flexibility achieved.**
- **Complete Normalization rarely occurs but the Third Normal Form is recommended for all databases.**
- **Very large enterprise databases may require additional normal forms to achieve performance requirements.**

Normalization (lite 2)

- **Lab_01 will explore the practice use of Normalization in an Access database**
- **The next slide list 7 practical rules for constructing relations (tables) for small and mid-size RDBMS**
- **Use of the 7 rules should satisfy all but the most complex small database design issues**
- **These 7 rules will promote data integrity, reliability and flexibility**

CISA 320 RDBMS 7 Rules

- 1. Single Subject for each relation (Table)**
- 2. Sequence of rows is insignificant.**
- 3. Each row is unique.**
- 4. Sequence of columns is insignificant.**
- 5. Each column has a unique name.**
- 6. Entries in columns are single-valued**
- 7. Entries in columns are of the same kind.**

Normalization

Web Links



This is the same information at various levels of detail from several authors

**Design Access databases
with normal forms and
Excel (Microsoft)**

<http://office.microsoft.com/en-us/assistance/HA010563211033.aspx>

**Access Database Design
and Normalization**

<http://www.informit.com/articles/article.asp?p=27226&rl=1>

**Webopedia What is
Normalization**

<http://www.webopedia.com/TERM/N/normalization.html>

**Mike Hillyer An
Introduction to Database
Normalization**

<http://dev.mysql.com/tech-resources/articles/intro-to-normalization.html>

**Steve Litt The first three
forms**

<http://www.troubleshooters.com/littstip/lnorm.html#normforms>

**[Ian Gilfillan](#) Database
Normalization**

<http://www.databasejournal.com/sqletc/article.php/1428511>

**Introduction to Data
Modeling**

<http://www.utexas.edu/its/windows/database/datamodeling/rm/rm7.html>