9. Using Business Normalization for Future Business Needs

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Introduction to Normalization

- Business Normalization
- ✓ First Normal Form (1NF)
- ✓ First Business Normal Form (1BNF)
- ✓ Second Normal Form (2NF) Second Business Normal Form (2BNF)
- ✓ Third Normal Form (3NF) Third Business Normal Form (3BNF)
- ✓ Fourth Normal Form (4NF) Fourth Business Normal Form (4BNF)
- ✓ Fifth Normal Form (5NF) Fifth Business Normal Form (5BNF)

Benefits of Business Normalization

- ✓ It is based on formal rules designed to be used by business experts and also by computer experts, working together in a design partnership.
- ✓ It consolidates the redundant data versions that exist in an organization into shared, integrated data resources that are readily available for use by all staff who are authorized to access that data.
- ✓ Because they exist in only one place, whenever data are updated, those integrated data are immediately available in the latest up-to-date version. Information derived from that data version is thus accurate throughout the organization.

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- When applied by business experts, business normalization results in the design of databases that can accommodate the business needs of users of the data throughout the enterprise.
- Business experts use business normalization to identify potential future business changes. Databases are designed to enable those changes to be easily applied.
- This results in develop men to figher quality data bases and systems to support current business needs; and to support future business needs as they arise.

Business normalization helps us in this instance:

- We must first identify all of the attributes of SKILL: SKILL (skill number#, [skill name], ((employee number#, employee name, skill level))
- In 1BNF, we move the repeating group to a new entity: EMPLOYEE SKILL (skill number#, employee number#, employee name, employee skill level
- This leaves behind the attributes of SKILL: SKILL (skill number#, [skill name
- The data map of these two entities, SKILL and EMPLOYEE SKILL

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- We identify attributes in the compound key entity EMPLOYEE SKILL that depend on only part of the compound key (Step 2 of 2BNF): EMPLOYEE SKILL (skill number#, employee number#, employee name, employee skill level)
- For example, employee name depends only on employee number#; it is not at all dependent on the other part of the primary key, skill number#. We therefore will move it to a new entity, called EMPLOYEE:
- This leaves behind the remaining attributes of EMPLOYEE SKILL: EMPLOYEE SKILL (skill number#, employee number#, employee skill level)
- We add this entity EMPLOYEE also to the data

Identification of Homonyms and Synonyms

- Homonym: The same name used to refer to different data;
- Synonyms: Different names used to refer to the same data.

What does salary in EMPLOYEE represent

- If it is employee salary, it belongs in EMPLOYEE
- But if it is job salary, it belongs in a new entity, JOB,
- If it is employee job salary, it be longs in an other new entity, EMPLOYEE JOB,
- If it is employee skill salary or even employee skill level salary, both of these belong in EMPLOYEE SKILL,