CSE 4409: Database Management Systems II

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Course Outline

Pre-requisite: CSE 4307 (Database Management Systems)

Syllabus: Part I (Revisit Database Basics)

(Total Credit: 2.0)

I. Relational Database Programming: Introduction, its role in S/Wdevelopment; Relational Database Basic Constructs: Table, Keys, Views, Cardinality; Introduction to SQL, Relational query and sub- query, joins.

Tables (relation schema) and Keys

- It is a data-structure for storing records (in the secondary storage)
- It is user-defined
- It has a name and defined by a number of attributes and other constraints

dept_name	building	budget
Biology	Watson	90000
Comp. Sci.	Taylor	100000
Elec. Eng.	Taylor	85000
Finance	Painter	120000
History	Painter	50000
Music	Packard	80000
Physics	Watson	70000

Figure: Table

Keys

- We must have a way to specify how tuples (records) within a given relation (table) are **distinguished**.
- The attribute values of a tuple must be such that they can **uniquely identify the tuple**. Otherwise record duplication will occur.
- Super Key, Candidate Key, *Primary Key, Foreign Key*

Keys (Cont.1)

- A **superkey** is a set of one or more attributes that, taken collectively, allow us to identify uniquely a tuple in the relation. A superkey may contain **extraneous attributes**.
- **Minimal superkeys** are called **candidate keys**.
- We shall use the term **primary key** to denote a candidate key that is **chosen by the database designer** as the principal means of identifying tuples within a relation.

How to choose Primary Key)

- It should be **informative** to the end user.
- It should be designed in a way that is not changeable in any case.
- A wise **trade-off** is desired.