CSE 4409: Database Management Systems II

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Chapter Outline

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Pre-requisite: **CSE 4307** (Database Management Systems)

Syllabus: Part I (Revisit Database Basics)

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.

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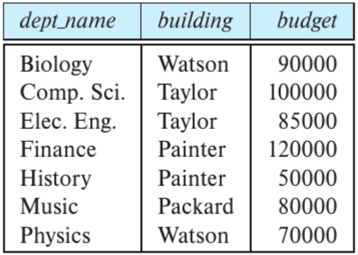

dept_name	*building*	*budget*
Biology	Watson	90000
Comp. Sci.	Taylor	100000
Elec. Eng.	Taylor	85000
Finance	Painter	120000
History	Painter	50000
Music	Packard	80000
Physics	Watson	70000

Figure 1: Table

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- Super Key, Candidate Key, *Primary Key, Foreign Key*

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- **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.

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- A wise **trade-off** is desired.

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- It ensures that a data would come from a **specific source**.

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- Views, in general, do not impact storage (But materialized views do have)

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4. The query does not have a group by or having clause.(i.e. aggregation, falls in condition 2)

Mapping Cardinality

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2 and 3 are similar with the change of entity orientation.

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- Many to Many: A **junction table** is formed by combining 2 foreign keys and additional attributes (if needed)

Joins

- Natural (Inner) Join

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- Outer Join (left, right, full)

SQL Code Demo

```
CREATE OR REPLACE FUNCTION totalteachers()
RETURN number IS
total number(2) := 0;
BEGIN
SELECT count(*) into total
FROM teachers;
RETURN nvl(total,-1);
END;
```