FACULTY OF INFORMATION TECHNOLOGY AND ENGINEERING

CSE 251

RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS) I

WITH

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Basic Relational DBMS Concepts

A Relational Database management System(RDBMS) is a database management system based on the relational model introduced by E.F Codd. In relational model, data is stored in relations(tables) and is represented in form of tuples(rows).

RDBMS is used to manage Relational database. Relational database is a collection of organized set of tables related to each other, and from which data can be accessed easily. Relational Database is the most commonly used database these days.

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What is Table ?

In Relational database model, a table is a collection of data elements organized in terms of rows and columns. A table is also considered as a convenient representation of relations.

ID	Name	Age	Salary
1	Adam	34	13000
2	Alex	28	15000
3	Stuart	20	18000
4	Ross	42	19020

What is a Tuple?

A single entry in a table is called a Tuple or Record or Row.

A tuple in a table represents a set of related data. For example, the Employee table in the previous slide has 4 tuples/records/rows.

Following is an example of single record or tuple.

1	Adam	34	13000

What is an Attribute?

A table consists of several records(row), each record can be broken down into several smaller parts of data known as Attributes. The above Employee table consist of four attributes, ID, Name, Age and Salary.

Table Constraints

Constraints are the rules enforced on data columns on a table. These are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the database

Following are some of the most commonly used constraints :−

- NOT NULL Constraint − Ensures that a column cannot have a NULL value.

...Table Constraints

DEFAULT Constraint − Provides a default value for a column when none is specified.

UNIQUE Constraint − Ensures that all the values in a column are different.

PRIMARY Key − Uniquely identifies each row/record in a database table.

FOREIGN Key − Uniquely identifies a row/record in any another database table.

...Table Constraints

CHECK Constraint − The CHECK constraint ensures that all values in a column satisfy certain conditions.