University of Central Florida
CGS 2545
Database Concepts

DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE
COMPUTER SCIENCE DIVISION

Constraints

- Constraints are the rules enforced on the data columns of 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.

Constraints

- Constraints could be either on a column level or a table level.
- The column level constraints are applied only to one column.
- The table level constraints are applied to the whole table.
- Constraints can be specified when a table is created with the CREATE TABLE statement
- can use the ALTER TABLE statement to create constraints even after the table is created.

Constraints

- Following are some of the most commonly used constraints available in SQL
  - NOT NULL: Ensures that a column cannot have NULL value.
  - DEFAULT: Provides a default value for a column when none is specified.
  - UNIQUE: Ensures that all values in a column are different.
  - PRIMARY KEY: Uniquely identifies each row/record in a database table.

Constraints

- Following are some of the most commonly used constraints available in SQL
  - FOREIGN KEY: Uniquely identifies a row/record in any of the given database table.
  - CHECK: The CHECK constraint ensures that all the values in a column satisfies certain conditions
  - INDEX: Used to create and retrieve data from the database very quickly.

Constraints

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  - FOREIGN KEY: Uniquely identifies a row/record in any of the given database table.
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Constraints

- Dropping Constraints
  - Any constraint that has been defined can be dropped using the ALTER TABLE command with the DROP CONSTRAINT option.
  - For example, to drop the primary key constraint in the EMPLOYEES table

```
ALTER TABLE EMPLOYEES DROP CONSTRAINT EMPLOYEES_PK;
```

Constraints

- Dropping Constraints
  - Some implementations may provide shortcuts for dropping certain constraints.
  - For example, to drop the primary key constraint for a table in Oracle, you can use the following command.

```
ALTER TABLE EMPLOYEES DROP PRIMARY KEY;
```

Constraints

- Dropping Constraints
  - Some implementations allow you to disable constraints.
  - Instead of permanently dropping a constraint from the database, may want to temporarily disable the constraint and then enable it later.

Constraints

- Integrity Constraints
  - Integrity constraints are used to ensure accuracy and consistency of the data in a relational database.
  - Data integrity is handled in a relational database through the concept of referential integrity.

Constraints

- Integrity Constraints
  - There are many types of integrity constraints that play a role in **Referential Integrity (RI)**.
  - These constraints include
    - Primary Key
    - Foreign Key
    - Unique Constraints
    - other constraints which are mentioned above.