Structured Query Language

Structured Query Language

- DML
- DDL
- DCL

DDL

- It is used to specify a database conceptual schema using set of definitions

CREATE TABLE

ALTER TABLE

DROP TABLE

TRUNCATE

COMMENT

RENAME

- The SQL DDL allows specification of not only a set of relations, but
- also information about each relation, including:
- ▫ The schema for each relation.
- ▫ The types of values associated with each attribute.
- ▫ The integrity constraints.
- ▫ The set of indices to be maintained for each relation.
- ▫ The security and authorization information for each relation.
- ▫ The physical storage structure of each relation on disk.

Data Manipulation Language (DML)

- It provides a set of operations to support the basic data
- manipulation operations on the data held in the database.
- SELECT
- INSERT
- UPDATE
- DELETE
- Merge

Create Command

- Create schema Library authorization anagha;

- create database cs204dbms;

- CREATE TABLE DEPARTMENT (

```
DNAME                VARCHAR(10)      NOT NULL,
DNUMBER              INTEGER          NOT NULL,
MGRSSN               CHAR(9),
MGRSTARTDATE         CHAR(9)  );
```

example

- Key attributes can be specified via the PRIMARY KEY and UNIQUE phrases

```
CREATE TABLE DEPT (
  DNAME              VARCHAR(10)    NOT NULL,
  DNUMBER            INTEGER        NOT NULL,
  MGRSSN             CHAR(9),
  MGRSTARTDATE       CHAR(9),
  PRIMARY KEY (DNUMBER),
  UNIQUE (DNAME),
  FOREIGN KEY (MGRSSN) REFERENCES EMP  );
```

Data Types in SQL

- Numeric
- Character-String
- Bit String
- Boolean
- Date
- Time
- Timestamp

Numeric

- Integer with varying size (int,integer and Small Int)
- Floating point numbers of various precision-Float, real, double precision
- Formatted numbers can be declared using decimal(i,j) Dec(i , j) or numeric(i , j)
- Where i, the precision is the total number of decimal digit and j the scale is the number of digit after the decimal point.

Character String

- Fixed length- CHAR(n) or CHARACTER(n), where n is the number of characters
- Varying length-VARCHAR(n) OR CHAR VARYING(n), OR character Varying(n) where n is the maximum number of characters.
- Variant- CLOB (Character Large Object)- upto 20Megabytes

Bit String

- Data types are either of fixed length n –BIT(n) or Varying Length-BIT VARYING(n) Where n is the maximum number of bits.
- Eg: Literal String B’10101’
- Variant –BLOB (Binary Large OBJECT) –image(k,M,G) upto 30gigabits

Boolean

- Three value logic
- True, false, null

Date and Time

- Date with 10 positions- yyyy-MM-DD
- Time with 8 positions-HH:MM:SS