ST. XAVIER’S COLLEGE

**(Affiliated to Tribhuvan University)**

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DATABASE MANAGEMENT SYSYTEM

Lab Assignment #8

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1. **DATA DEFINITION LANGUAGE**

**Data Definition Language** (DDL) is a standard for commands that **define** the different structures in a database. DDL statements create, modify, and remove database objects such as tables, indexes, and users. Common DDL statements are CREATE, ALTER, and DROP.

* 1. **DOMAIN TYPE IN SQL**
* Character (String) -- fixed or variable length character strings. The character set is implementation defined but often defaults to ASCII.
* Numeric -- values representing numeric quantities. Numeric values are divided into these two broad categories:
  + Exact (also known as *fixed-point*) -- Exact numeric values have a fixed number of digits to the left of the decimal point and a fixed number of digits to the right (the scale). The total number of digits on both sides of the decimal are the precision. A special subset of exact numeric types with a scale of 0 is called *integer*.
  + Approximate (also known as *floating-point*) -- Approximate numeric values that have a fixed precision (number of digits) but a *floating* decimal point.

All numeric types are signed.

* Datetime -- Datetime values include calendar and clock values (Date, Time, Timestamp) and intervals. The datetime types are:
  + Date -- calendar date with year, month and day
  + Time -- clock time with hour, minute, second and fraction of second, plus a timezone component (adjustment in hours, minutes)
  + Timestamp -- combination calendar date and clock time with year, month, day, hour, minute, second and fraction of second, plus a timezone component (adjustment in hours, minutes)
  + Interval -- intervals represent time and date intervals. They are signed. An interval value can contain a subset of the interval fields, for example - hour to minute, year, day to second. Interval types are subdivided into:
    - year-month intervals -- may contain years, months or combination years/months value.
    - day-time intervals -- days, hours, minutes, seconds, fractions of second.
  1. **SCHEMA DEFINITION IN SQL**

1. **DATA MANIPULATION LANGUAGE**
   1. **THE SELECT CLAUSE**

The DISTINCT keyword can be used to return only distinct (different) values.

**SQL SELECT DISTINCT Syntax:**

SELECT DISTINCT *column\_name*,*column\_name*  
FROM *table\_name*;

* 1. **THE WHERE CLAUSE**

The WHERE clause is used to extract only those records that fulfill a specified criterion.

**SQL WHERE Syntax:**

SELECT *column\_name*,*column\_name*  
FROM *table\_name*  
WHERE *column\_name operator value*;

**SELECT/FROM/WHERE**

* **SELECT** − This is one of the fundamental query command of SQL. It is similar to the projection operation of relational algebra. It selects the attributes based on the condition described by WHERE clause.
* **FROM** − This clause takes a relation name as an argument from which attributes are to be selected/projected. In case more than one relation names are given, this clause corresponds to Cartesian product.
* **WHERE** − This clause defines predicate or conditions, which must match in order to qualify the attributes to be projected.

**For example** −

Select author\_name

From book\_author

Where age > 50;

This command will yield the names of authors from the relation **book\_author** whose age is greater than 50.

**INSERT INTO/VALUES**

This command is used for inserting values into the rows of a table (relation).

**Syntax**−

INSERT INTO table (column1 [, column2, column3 ... ]) VALUES (value1 [, value2, value3 ... ])

Or

INSERT INTO table VALUES (value1, [value2, ... ])

**For example** −

INSERT INTO tutorialspoint (Author, Subject) VALUES ("anonymous", "computers");

**UPDATE/SET/WHERE**

This command is used for updating or modifying the values of columns in a table (relation).

**Syntax** −

UPDATE table\_name SET column\_name = value [, column\_name = value ...] [WHERE condition]

**For example** −

UPDATE tutorialspoint SET Author="webmaster" WHERE Author="anonymous";

**DELETE/FROM/WHERE**

This command is used for removing one or more rows from a table (relation).

**Syntax** −

DELETE FROM table\_name [WHERE condition];

**For example** −

DELETE FROM tutorialspoints

WHERE Author="unknown";

* 1. **THE RENAME OPERATION**
  2. **TUPLE VARIABLE**
  3. **STRING OPERATIONS**
  4. **ORDERING THE DISPLAY OF TUPLES**
  5. **DUPLICATE TUPLES**