

# Patrician College of Arts and Science

Department of Computer Science

DATABASE MANAGEMENT SYSTEMS

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Presented By FRIZILIN.R



# Structured Query Language

**SQL:**

**SQL - Structured Query Language.**

**It is a non-procedural language**

- **3 major categories of language consists of:**
- **DDL(Data Definition Language)**
- **DML(Data Manipulation Language)**
- **DCL(Data Control Language)**

## **DDL(Data Definition Language):**

DDL consists of **CREATE , ALTER AND DROP** commands

### **CREATE:**

The syntax for create command is

**Sql>Create table<tablename>(columnname datatype(size),columnname datatype(size),.....);**

Eg:

Sql>Create table t1(empno number(6),empname varchar2(10),age number(2),salary number(5,2));

## **b.ALTER:**

Alter command-has two options **ADD, MODIFY**.

**ADD** option-adds any new column to the table

**MODIFY** option-changes the size of the datatype.

The syntax for alter command is

**Sql>Alter table<tablename> add(columnname datatype(size));**

Eg. sql>Alter table t1 add(commission number(5,2));

The syntax of modify option is

**Sql>Alter table<tablename>modify(columnname datatype(size));**

Eg. sql>Alter table t1 modify(empno number(10));

## **DROP:**

Drop command-delete the entire table(both data and structure).

The syntax of Drop command is

**Sql>Drop table<tablename>;**

Eg. sql>Drop table t1;

- **DML(Data Manipulation Language):**

DML consists of **SELECT, UPDATE,INSERT** and **DELETE** commands.

- **SELECT**

Select command is used to select a particular record or a group of records from a table.

The syntax is

- **Sql>Select “Expression List” from <tablename>;**

- Eg. sql>Select \* from t1;

## **INSERT:**

The INSERT command inserts new rows into the table.

**Sql>Insert into <tablename> values(expression1,expression2,.....)**

**Eg. sql>insert into t1 values(&101,'Kumar',&25,&20000);**

[**note:** datatype of number should precede by ampersand & and varchar datatype should hold single quotes]

## **c. DELETE:**

Delete command deletes only the data, but the structure remains.

**Sql>Delete from <tablename> where <condition>**

**Eg. sql>Delete from t1 where empno=101;**

## **UPDATE:**

Update command -make changes in the existing rows of a table.

**Sql> Update<tablename>set<columnname>=value where <condition>**

**Eg. sql>update t1 set empname='hariharan' where empno=103;**

To change all the row values of a particular column, the command used is

**Sql>update t1 set salary=50000;**

## **DATA CONTROL LANGUAGE(DCL):**

The DCL commands consists of **Grant, Revoke, Commit** and **RollBack**.

**Grant-** Granting some privileges or permission .

**Sql> Grant privileges on <objectname> to <username>**

Eg: sql>Grant select, insert, delete, update on emp to scott;

**Revoke-** Removing the privileges.

**Sql> Revoke privileges on <objectname> from <username>**

Eg: sql>Revoke select, insert, delete, update on emp from scott;

**Commit-** Write to the database permanently.

**Sql>Commit;**

**RollBack** – removing back the commit option. It will rollback the transaction and will not commit the change to the database.

**Sql> RollBack;**

In after inserting, updating or deleting the transactions the user does not want to commit the changes, then the user can rollback the transaction using the **RollBack** command.

# DATA TYPES(DOMAINS):

## Char(Character):

The char data type consists of **255** characters long. These are **fixed** length character strings. It holds **upto 2000** bytes. If any small length of character values are given, it leaves blank space.

## Varchar2:

The varchar2 data type is a variable length character strings. It holds upto **4000 bytes**. If any less than value given, the remaining space is utilized for other storage values. There is no wastage of space.

## Number:

The number data type stores zero or a positive no or a negative no or any floating point no. they are able to store **38 digits of precision**. The syntax is

**Number(precision, scale)**

Where precision holds the total no. of digits and scale contains the no. of digits right to the decimal point. Eg: number(5,2) means, the total no. of digits is 5 and among that, it can hold 2 decimal values.(ie, only 3 precision values and 1 decimal value along with decimal point)

## Date and Time:

Date and Time datatype stores date and time. the date format is **“DD-MM-YY”** which denotes date, month and year.(ie, 25-jun-09) and the time format is **“HH-MI-SS”** which denotes hours, minutes and seconds

## Long:

The Long data type are variable length character strings. It holds upto **2GB** of information and accepts upto **65,535** characters.

## Raw and Long Raw:

This type of data type is intended for binary data storage. It is mainly used for storing graphics and sounds. It holds upto **2GB** of capacity and file access can be made only **sequentially**.

## LOB:

**LOB** data type stands for **Large Object**. It mainly stores unstructured data such as Video files, sound clips etc. the capacity of this type of data type is upto **4 GB** and file access is **random**. The values stored in this attribute are named as locators and these locators may be a data that is present within the table or an external file.



# Thank you

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