

Unit 3

1. Define a view?

Ans: VIEW is a stored SQL query used as a "Virtual table" that logically represents subsets of data from one or more table. It provides an alternative way of looking at the data in one or more tables. A view is a logical table based on a table or another view. The table on which view is based is called a base table.

Syntax

```
create view view-name as select column-name  
from table-name where condition;
```

2. What is DCL?

Ans: DCL commands are used to enforce database security in a multiple user database environment. Two types of DCL commands are

- 1) GRANT
- 2) REVOKE

only database administrators or owner of the database object can provide / remove privileges on a database object.

3. Write any four aggregate function.

Ans: AVG() - AVG() function returns the average values of a numeric column.

Syntax: select avg(column-name) from table-name;

SUM() - SUM() function returns the total sum of a numeric column.

Syntax: select sum(col-name) from table-name;

MAX() - MAX() function returns the largest value of the selected column.

Syntax: select max(col-name) from table-name;

MIN() - MIN() function returns the smallest value of the selected column.

Syntax: select min(col-name) from table-name;

4. What is the command to alter table in SQL?

Sol:- Alter command is used for modifying or altering an existing table structure.

Eg:-

Syntax(i):

alter table <table-name> modify (col-name datatype
(new-size));

In this syntax size of a particular col-name

Syntax (ii):

alter table <table-name> modify (col-name new data
type (size));

In this syntax we can change the datatype of
existing column.

Syntax (iii):

alter table <table-name> add (new col-name
datatype (size));

In this syntax we can add new column to an existing table.

Syntax (iv):

`alter table <table-name> drop (col-name);`
using this we can delete a particular column of a table.

5. How do you insert data into database?

Sol:- Using insert command we can insert data into database.

Insert Syntax

(1) `insert into table-name values (list of data values);`

(2) `insert into table-name (col-names) values (list of data values);`

(3) `insert into table-name values (col-name1, col-name2, ...);`

6) Explain the use of SELECT operation with an example.

Sol:- Specific columns of the table can be selected by specifying the column name separated by commas in the SELECT statement. The order in which the column names are listed in the query will be the order in which the names will appear in the output.

Syntax: select col-name1, col-name2, ... from table-name;

7. Write a note on join operation.

Sol:- join clause is used to combine records from two or more tables in a database. A join means for combining fields from two tables by using values common to each

Syntax for joining two tables

select col1, col2, col3, ...
from table-name1, table-name2

where table-name1.col2 = table-name2.col2;

Types of joins

- * INNER JOIN
 - * LEFT JOIN
 - * RIGHT JOIN
 - * FULL JOIN
 - * ~~OUTER JOIN~~
 - * SELF JOIN
 - * CARTESIAN JOIN
- } OUTER JOIN

8. What are nested queries?

Ans: A subquery or Inner query or Nested query is a query within another SQL query & embedded within the where clause. A nested query is used to return data that will be used in the main query as a condition to further restrict the data to be retrieved. Subqueries can be used with the SELECT, INSERT, UPDATE, & Delete statements along with the operators like =, <, >, >=, !=, IN, BETWEEN.

9. What is the difference between inner join & outer join?

Inner Join

Outer Join

* Inner join outputs only the matching tuples from both the tables

* Potential size of the database returned by inner join is comparatively smaller than outer join

* No sub category or type

* Outer join displays all the tuples from both the tables

* Outer join comparatively larger database

* Left Outer Join
Right Outer Join
& Full Outer Join

10) Explain Like operator with an example.

Sol:- Like clause is used to compare a value to similar values using wildcard operator. There are two wildcards used in conjunction with the LIKE operator.

- * Percentage sign (%)
- * The underscore sign (-)

The percentage represents zero, one or multiple characters. The underscore represents a single number or character. These symbols can be used in combination.

Eg:- select name from data where name like 'S__';

~~here ~~data~~ names which is begin beg~~

here names which starts with S and contains exactly 4 letters is select

Select name from data where name like '%n';

Here names ended with n is selected.

11. Give SQL statement which creates a student table consisting of following fields Name char(40), class char(6), Marks number(4), rank char(8).

Sol: create table student (name varchar(40), class varchar(6), marks number(4), rank varchar(8));

12. Differentiate between DDL & DML

Sol: Data Definition Language (DDL) & Data Manipulation Language (DML) together forms a Database language. The basic difference between DDL & DML is that DDL is used to specify the database schema, database structure. On the other hand, DML is used to access, modify or retrieve the data from the database.

DDL

DML

* DDL is used to create the database schema & manipulate database.

* It is a Data Definition Language

* DDL is not classified further.

* Commands:

CREATE, ALTER, DROP, TRUNCATE, etc

* Commands:

Select, insert, update, delete, merge, call etc.

* DDL defines additional properties of the data defined in the database

* DML gives the provision to insert, delete, modify, & retrieve the information from the table.

13) Explain ~~any~~ the DDL commands used in SQL.

DDL is a language used to define data structures within a database. It is considered to be the subset of Structured Query Language. A data definition language has a pre-defined syntax for describing data.

Eg:- to create new table using SQL syntax the CREATE command is used, followed by parameters for the table name & column definition. The DDL can also define the name of each column & the associated data type.

Once the table is created, it can be modified using the ALTER command. If the table is no longer needed the DROP command will delete the table.

Various DDL commands are:

* CREATE : to create object in database

* DESC : Describes the structure of database.

* ALTER: alters the structure of the database.

* DROP: removes a table from the database.

* TRUNCATE: removes all records from a table,

including all spaces allocated for the record are removed.

CREATE

Used for creating table

Syntax: create table table-name (col-name datatype(size), col-name2 datatype(size), ...);

DESC

Used for viewing the table structure

Syntax: desc table-name;

ALTER

Used for modifying table structure

Syntax

(i) alter table table-name modify (col-name datatype(new size));

used for modifying size of a selected column

(ii) `alter table table-name modify (col-name new datatype (size));`

used to change the datatype of a selected column

(iii)

`alter table table-name add (new col-name datatype (size));`

used to add new column to the table.

(iv)

`alter table table-name drop (col-name);`

used to delete particular column.

DROP

Used to remove a table from the database.
All the tables rows, indexes & privileges will also be removed. The operation cannot be rolled back.

Syntax

`drop table table-name;`

RENAME

Used to change the name of the table

Syntax

```
rename old-table-name to new-table-name;
```

TRUNCATE

TRUNCATE command removes all rows from a table. The operation cannot be rolled back & no triggers will be fired.
TRUNCATE is faster.

Syntax

```
truncate table table-name;
```