Data Base Management System Lab

UCS310

Thapar Institute of Engineering and Technology

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Data Query Language Commands
(SELECT)

SELECT Command

The SELECT statement is used to select data from a database.

- The data returned is stored in a result table, called the result-set.

Syntax

- SELECT *column1*, *column2*, ...
  FROM *table_name*;

- Here, column1, column2, ... are the field names of the table you want to select data from. If you want to select all the fields available in the table, use the following syntax:

- SELECT * FROM *table_name*

SELECT using Arithmetic Operators

SELECT ENAME, SAL, SAL + 300 FROM EMP;

ENAME	SAL	SAL+300
SMITH	800	1100
ALLEN	1600	1900

- Multiplication and division take priority over addition and subtraction.
- Operators of the same priority are evaluated from left to right.
- Parentheses are used to force prioritized evaluation and to clarify statements
- The data returned is stored in a result table, called the result-set.

SELECT ENAME, SAL, 12*SAL+100 FROM EMP;

ENAME	SAL	12*SAL+100
SMITH	800	9700
ALLEN	1600	19300

OR

SELECT ENAME, SAL, 12*(SAL+100) FROM EMP;

ENAME	12*SAL*COMM
SMITH	-
ALLEN	5760000

- Arithmetic expressions containing a null value evaluate to null.
  SELECT ENAME, 12*SAL*COMM FROM EMP;

SELECT Column Aliases

SELECT ENAME AS name, comm commission_pct FROM EMP;

NAME	COMMISSION_PCT
SMITH	-
ALLEN	300
WARD	500
JONES	-

SELECT ENAME "Name", SAL*12 "Annual Salary" FROM EMP;

Name	Annual Salary
SMITH	9600
ALLEN	19200
WARD	15000
JONES	35700

Concatenation Operator

A concatenation operator:
• Concatenates columns or character strings to other columns
• Is represented by two vertical bars (||)
• Creates a resultant column that is a character expression

SELECT ENAME ||JOB AS "Employee Details" FROM EMP;

Employee Details
SMITHCLERK
ALLENSALESMAN
WARDSALESMAN
JONESMANAGER

Literal Character Strings

- A literal is a character, a number, or a date included in the SELECT list.
- Date and character literal values must be enclosed within single quotation marks.
- Each character string is output once for each row returned.

SELECT ENAME ||' is a '||JOB AS "Employee Details" FROM EMP;

Employee Details
SMITH is a CLERK
ALLEN is a SALESMAN
WARD is a SALESMAN
JONES is a MANAGER

SELECT DISTINCT Command

- The SELECT DISTINCT statement is used to return only distinct (different) values.

- Inside a table, a column often contains many duplicate values; and sometimes you only want to list the different (distinct) values.

Syntax

- SELECT DISTINCT *column1*, *column2*, ...
  FROM *table_name*;

Example

SELECT DISTINCT DEPTNO FROM EMP

DEPTNO
30
10
20

WHERE Clause

- The WHERE clause is used to filter records.

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

Syntax

- SELECT *column1, column2, ...*
  FROM *table_name*
  WHERE *condition*;

EMPNO	ENAME
7788	SCOTT
7902	FORD

Example
SELECT EMPNO, ENAME FROM EMP WHERE JOB = 'ANALYST';

Data Manipulation Language Commands
(INSERT, UPDATE, DELETE)

Example: Create Table

```
create table team(
        position varchar(10),
        pname varchar(30),
        role varchar(20)
);
```

Insert into Table

➢ **Syntax:**
  ➢ Insert into table_name (Col_1, Col_2, .., Col_n) Values (Val_1, Val_2, .., Val_n);

➢ Insert into team (position, pname, role) VALUES ('P1', 'V. Kohli', 'Bat');

➢ Insert into team (position, pname, role) values ('P2', 'R. Sharma', 'Bat');

➢ Insert into team (position, pname, role) values ('P3', 'M.Dhoni', 'Wicket'),

Insert into Specific Columns Table

➢ **Syntax:**

    ➢ Insert into table_name (Col_1, Col_2, ..) Values (Val_1, Val_2, ..);

➢ Insert into team (pname, role) VALUES ('B. Kumar', 'Ball');

Insert Multiple Records into Table

Insert into team (position, pname, role) values
    ('P1','V. Kohli','Bat'),
    ('P2','R. Sharma','Bat'),
    ('P3','M.Dhoni','Wicket'),
    ('P4','J.Bumrah','Ball'),
    ('P5','K.Yadav','Ball');

How to display

- SELECT position, pname from team;
- select * from team;

```
P1      V. Kohli        Bat
P2      R. Sharma       Bat
P3      M.Dhoni         Wicket
P4      J.Bumrah        Ball
P5      K.Yadav         Ball
```

Delete a Member

➤ delete from team where position='P5';

P1	V. Kohli	Bat
P2	R. Sharma	Bat
P3	M.Dhoni	Wicket
P4	J.Bumrah	Ball
P5	K.Yadav	Ball

→

P1	V. Kohli	Bat
P2	R. Sharma	Bat
P3	M.Dhoni	Wicket
P4	J.Bumrah	Ball

➤ Delete from team;   //all the records will be deleted

Update a Record

> **UPDATE Syntax:**

```
UPDATE table_name
SET column1 = value1, column2 = value2, ...
WHERE condition;
```

Example:

- Update team SET pname='B.Kumar' where position='P4';

P1	V. Kohli	Bat
P2	R. Sharma	Bat
P3	M.Dhoni	Wicket
P4	J.Bumrah	Ball

→

P1	V. Kohli	Bat
P2	R. Sharma	Bat
P3	M.Dhoni	Wicket
P4	B.Kumar	Ball

Update using Alter Table Command

Alter table team add (shirt_no INT);

update team

set shirt_no=18 where position='P1';

```
P1      V. Kohli        Bat     18
P2      R. Sharma       Bat     NULL
P3      M.Dhoni         Wicket  NULL
P4      B.Kumar         Ball    NULL
```

Oracle datatype

Data Type	Description	Syntax
CHAR	Fixed size of the string	manager CHAR (10)
VARCHAR2	Variable size of the string	manager VARCHAR2(10)
NUMBER(p,s)	Store number with precision p and scale s	Salary NUMBER(6,2) e.g. 1234.56
Number	It can take maximum 38 digits	
BOOLEAN	Stores the logical values (quotes are not required while assigning)	Var1 BOOLEAN
DATE	Stores the values in date format, as date, month, and year. (quotes are required while assigning)	newyear DATE ='01-JAN-2015';