EXPERIMENT – 5

AIM : How to retrieve data from a single table Select Statement, Select statement with where clause (Comparison Operators, AND,OR, NOT, IN, BETWEEN, LIKE) ORDER BY clause(sort by column name) LIMIT Clause.

SELECT:

The SELECT statement is used to select data from a database

Syntax:

- select column1,column2,.. from table_name;
- select column1,column2,.. from table_name where condition;
- select * from table_name;
- select * from table_name where condition;

Example:

```
SELECT Dname FROM DEPARTMENT_591;
```

Output:

Dname
Administration
Headquarters
Research

Example:

```
SELECT CONCAT(Fname,Lname) EMP_NAME,Ssn,Address,Bdate FROM
EMPLOYEE_591;
```

Output:

EMP_NAME	Ssn	Address	Bdate
JohnSmith	123456789	731 Fondren,Houston,TX	1965-01-09
FranklinWong	333445555	638 Voss,Houston,TX	1955-12-08
JoyceEnglish	453453453	5631 Rice,Houston,TX	1972-07-31
RameshNarayan	666884444	975 Fire Oak,Humble,TX	1962-09-15
JamesBong	888665555	450 Stone,Houston,TX	1937-11-10
JenniferWallace	987654321	291 Berry,Bellaire,TX	1941-06-20
AhmadJabbar	987987987	980 Dallas,Houston,TX	1969-03-29
AlicaZelaya	999887777	3321 Castle,Spring,TX	1968-01-19

Example:

SELECT CONCAT(Fname,Lname) EMP_NAME,Bdate FROM EMPLOYEE_591 WHERE Dno=5;

Output:

EMP_NAME	Bdate
JohnSmith	1965-01-09
FranklinWong	1955-12-08
JoyceEnglish	1972-07-31
RameshNarayan	1962-09-15

Example:

SELECT Essn FROM WORKS_ON_591 WHERE Pno=20;

Output:

Essn
333445555
888665555
987654321

Example:

SELECT * FROM DEPARTMENT_591;

Output:

Dname	Dnumber	Mgr_ssn	Mgr_start_date
Headquarters	1	888665555	1981-06-19
Administration	4	987654321	1995-01-01
Research	5	333445555	1988-05-22
NULL	NULL	NULL	NULL

Example:

SELECT * FROM PROJECT_591;

Output:

Pname	Pnumber	Plocation	Dnu
ProductX	1	Bellaire	5
ProductY	2	Sugarland	5
ProductZ	3	Houston	5
Computerization	10	Bellarie	5
Reorganization	20	Houston	1
Newbenefits	30	Stafford	4
NULL	NULL	NULL	NULL

Example:

SELECT * FROM DEPENDENT_591 WHERE Bdate>'1980-01-01';

Output:

Essn	Dependent_name	Sex	Bdate	Relationship
123456789	Alice	F	1988-12-30	Daughter
123456789	Michael	M	1988-01-04	Son
333445555	Alice	F	1986-04-05	Daughter
333445555	Theodore	M	1983-10-25	Son
NULL	NULL	NULL	NULL	NULL

Example:

```
SELECT * FROM EMPLOYEE_591;
```

Output :

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
John	B	Smith	123456789	1965-01-09	731 Fondren,Houston,TX	M	30000.00	333445555	5
Franklin	T	Wong	333445555	1965-12-08	638 Voss,Houston,TX	M	40000.00	888665555	5
Joyce	A	English	453453453	1972-07-31	5631 Rice,Houston,TX	F	25000.00	333445555	5
Ramesh	K	Narayan	666884444	1962-09-15	975 Fire Oak,Humble,TX	M	38000.00	333445555	5
James	E	Borg	888665555	1937-11-10	450 Stone,Houston,TX	M	55000.00	NULL	1
Jennifer	S	Wallace	987654321	1941-06-20	291 Berry,Bellaire,TX	F	43000.00	888665555	4
Ahmad	V	Jabbar	987987987	1969-03-29	980 Dallas,Houston,TX	M	25000.00	987654321	4
Alicia	J	Zelaya	999887777	1968-01-19	3321 Castle,Spring,TX	F	25000.00	987654321	4
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

1. <u>AND</u> : The AND operator displays a record if all the conditions separated by AND are TRUE.

Syntax :

```
SELECT  column1, column2, ... FROM table_name
WHERE condition1 AND condition2 AND condition3 ...;
```

Example :

Syntax:

```
select fname,Address from employee_91,department_91 where
employee_91.ssn=department_91.Mgr_ssn and Dname='reasearch';
```

Output :

	fname	Address
▶	Franklin	638 Voss,Houston,TX

2. OR : The OR operator displays a record if any of the conditions separated by OR is TRUE.

Syntax :

```
SELECT  column1, column2, ... FROM table_name
WHERE condition1 OR condition2 OR condition3 ...;
```

Example :

Syntax:

```
select * from department_91 where Dnumber='1' or dnumber='4';
```

Output :

	Dname	Dnumber	Mgr_ssn	Mgr_start_date
▶	Headquarters	1	888665555	1981-06-19
	Adminstration	4	987654321	1995-01-01
•	NULL	NULL	NULL	NULL

3. NOT : The NOT operator displays a record if the condition(s) is NOT TRUE.

Syntax :

```
SELECT  column1, column2, ... FROM table_name
WHERE NOT condition;
```

Example :

```
select fname, lname, salary from EMPLOYEE_91 where not salary>=35000;
```

Output :

	fname	lname	salary
▶	Joyce	English	25000.00
	Ahmad	Jabbar	25000.00
	Alicia	Zelaya	25000.00

4. IN : The IN operator allows you to specify multiple values in a WHERE clause. The IN operator is a shorthand for multiple OR conditions.

Syntax :

```
SELECT  column1, column2, ... FROM table_name
WHERE column_name IN (value1, value2, ...);
```

Example :

```
select fname,lname from EMPLOYEE_91 where lname in ('Wong','Bong','Zelaya');
```

Output :

	fname	lname
▶	Franklin	Wong
	James	Bong
	Alicia	Zelaya

5. BETWEEN : The BETWEEN operator selects values within a given range. The values can be numbers, text, or dates. The BETWEEN operator is inclusive: begin and end values are included.

Syntax :

```
SELECT  column1, column2, ... FROM table_name
WHERE column_name BETWEEN value1 AND value2;
```

Example :

```
select fname from EMPLOYEE_91 where Bdate between '1950-02-11' and '1966-03-30';
```

Output :

	fname
▶	Franklin
	Ramesh

6. LIKE : The LIKE operator is used in a WHERE clause to search for a specified pattern in a column.

There are two wildcards often used in conjunction with the LIKE operator:

- % - The percent sign represents zero, one, or multiple characters
- _ - The underscore represents a single character

Syntax :

```
SELECT  column1, column2, ... FROM table_name
WHERE column_name columnN  LIKE pattern;
```

Example :

Syntax:

select dname from department_91 where dname like '_e%';

Output :

	dname
▶	Headquarters
	Reasearch

7. ORDER BY clause : The ORDER BY keyword is used to sort the result-set in ascending or descending order. The ORDER BY keyword sorts the records in ascending order by default. To sort the records in descending order, use the DESC keyword.

Syntax :

```
SELECT  column1, column2, ... FROM table_name
ORDER BY column1, column2, ... ASC|DESC;
```

Example :

Syntax:

select * from department_91 order by Dnumber DESC;

Output :

	Dname	Dnumber	Mgr_ssn	Mgr_start_date
▶	Reasearch	5	333445555	1988-05-22
	Adminstration	4	987654321	1995-01-01
	Headquarters	1	888665555	1981-06-19
*	NULL	NULL	NULL	NULL

8. LIMIT clause : The LIMIT clause is used to specify the number of records to return. The LIMIT clause is useful on large tables with thousands of records. Returning a large number of records can impact performance.

Syntax :

```
SELECT  column_name(s) FROM table_name
WHERE condition LIMIT number;
```

Example :

```
SELECT * FROM employee_91 WHERE sex='M' LIMIT 3;
```

Output :

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
Franklin	T	Wong	333445555	1965-12-08	638 Voss,Houston,TX	M	40000.00	888665555	5
Ramesh	K	Narayan	666884444	1962-09-15	975 Fire Oak,Humble,TX	M	38000.00	333445555	5
James	E	Bong	888665555	1937-11-10	450 Stone,Houston,TX	M	55000.00	NULL	1
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL