Ex.No.: 6		RESTRICTING AND SORTING DATA
Date:		

After the completion of this exercise, the students will be able to do the following:

- Limit the rows retrieved by the queries
- Sort the rows retrieved by the queries
-

Limiting the Rows selected

- Using WHERE clause
- Alias cannot used in WHERE clause

Syntax

```
SELECT----------
FROM----------
WHERE condition;
```

Example:

```
SELECT employee_id,last_name, job_id, deparment_id FROM employees WHERE
department_id=90;
```

Character strings and Dates

Character strings and date values are enclosed in single quotation marks.

Character values are case sensitive and date values are format sensitive.

Example:

```
SELECT employee_id,last_name, job_id, deparment_id FROM employees
WHERE last_name=’WHALEN”;
```

Comparison Conditions

All relational operators can be used. (=, >, >=, <, <= ,<>,!=)

Example:

```
SELECT last_name, salary
```

```
FROM employees
WHERE salary<=3000;
```

Other comparison conditions

Operator	Meaning
BETWEEN ...AND...	Between two values
IN	Match any of a list of values
LIKE	Match a character pattern
IS NULL	Is a null values

Example:1

```
SELECT last_name, salary
FROM employees
WHERE salary BETWEEN 2500 AND 3500;
```

Example:2

```
SELECT employee_id, last_name, salary , manager_id
FROM employees
WHERE manager_id IN (101, 100,201);
```

Example:3

- Use the LIKE condition to perform wildcard searches of valid string values.
- Two symbols can be used to construct the search string
- % denotes zero or more characters
- _ denotes one character

```
SELECT first_name, salary
FROM employees
WHERE first_name LIKE '%s';
```

Example:4

```
SELECT last_name, salary
FROM employees
WHERE last_name LIKE '_o%';
```

Example:5

ESCAPE option-To have an exact match for the actual % and_ characters
To search for the string that contain ‘SA_’

```
SELECT employee_id, first_name, salary,job_id
FROM employees
WHERE job_id LIKE ‘%sa\_%’ESCAPE’\’;
```

Test for NULL

- Using IS NULL operator

Example:

```
SELECT employee_id, last_name, salary , manager_id
FROM employees
WHERE manager_id  IS NULL;
```

Logical Conditions

All logical operators can be used.(AND,OR,NOT)

Example:1

```
SELECT employee_id, last_name, salary , job_id
FROM employees
WHERE salary>=10000
AND job_id LIKE ‘%MAN%’;
```

Example:2

```
SELECT employee_id, last_name, salary , job_id
FROM employees
WHERE salary>=10000
OR job_id LIKE ‘%MAN%’;
```

Example:3

```
SELECT employee_id, last_name, salary , job_id
FROM employees
WHERE  job_id NOT IN (‘it_prog’, st_clerk’, sa_rep’);
```

Rules of Precedence

Order Evaluated	Operator
1	Arithmetic

2	Concatenation
3	Comparison
4	IS [NOT] NULL, LIKE, [NOT] IN
5	[NOT] BETWEEN
6	Logical NOT
7	Logical AND
8	Logical OR

Example:1

```
SELECT employee_id, last_name, salary , job_id
FROM employees
WHERE  job_id ='sa_rep'
OR job_id='ad_pres'
AND salary>15000;
```

Example:2

```
SELECT employee_id, last_name, salary , job_id
FROM employees
WHERE  (job_id ='sa_rep'
OR job_id='ad_pres')
AND salary>15000;
```

Sorting the rows

Using ORDER BY Clause

ASC-Ascending Order,Default

DESC-Descending order

Example:1

```
SELECT  last_name, salary , job_id,department_id,hire_date
FROM employees
ORDER BY hire_date;
```

Example:2

```
SELECT  last_name, salary , job_id,department_id,hire_date
FROM employees
ORDER BY hire_date DESC;
```

Example:3
Sorting by column alias

```
SELECT  last_name, salary*12 annsal , job_id,department_id,hire_date
FROM employees
ORDER BY annsal;
```

Example:4

Sorting by Multiple columns

```
SELECT  last_name, salary , job_id,department_id,hire_date
FROM employees
ORDER BY department_id, salary DESC;
```

Find the Solution for the following:

1. Create a query to display the last name and salary of employees earning more than 12000.

```
SELECT   Last Name  , Salary
FROM   Employees
WHERE   Salary > 12000;
```

2. Create a query to display the employee last name and department number for employee number 176.

```
SELECT   Lastname , DepartmentId
FROM   Employees
WHERE   EmployeeId  = 176;
```

3. Create a query to display the last name and salary of employees whose salary is not in the range of 5000 and 12000. (hints: not between)

```
SELECT   Last Name  , salary
FROM   Employees
WHERE   Salary  NOT  BETWEEN  5000  AND  12000;
```

4. Display the employee last name, job ID, and start date of employees hired between February 20,1998 and May 1,1998.order the query in ascending order by start date.(hints: between)

```
SELECT   LastName   , JobId , HireDate
FROM   Employees
WHERE   Hire Date   BETWEENTo_DATA ('20-FEB-1998',
ORDER By HireDate ASC ;
                                         'DD-MON-YYYY')
                              AND To_DATE ('01-MAY-1998',
                                          'DD-MM-YYY
```

5. Display the last name and department number of all employees in departments 20 and 50 in alphabetical order by name.(hints: in, orderby)

```
SELECT LastName , DepartmentId
FROM Employees
WHERE DepartmentId  IN (20, 50)
ORDER BY  LastName  ASC ;
```

6. Display the last name and salary of all employees who earn between 5000 and 12000 and are in departments 20 and 50 in alphabetical order by name. Label the columns EMPLOYEE, MONTHLY SALARY respectively.(hints: between, in)

```
SELECT LastName AS EMPLOYEE , Salary AS `MONTHLY
FROM EMPLOYEES                                SALARY"
WHERE ~~DepartmentId~~ Salary BETWEEN 5000 AND 12000
          AND DepartmentId IN (20, 50)
ORDER BY LastName ASC ;
```

7. Display the last name and hire date of every employee who was hired in 1994.(hints: like)

```
SELECT  LastName , HireDate
FROM  Employees
WHERE  TO_CHAIR (HIREDate , `yyyy') = `1994' ;
```

8. Display the last name and job title of all employees who do not have a manager.(hints: is null)

```
SELECT  LastName , JobId
FROM  Employees
WHERE  ManagerId  IS  NULL ;
```

9. Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.(hints: is not nul,orderby)

```
SELECT LastName , Salary , commission
FROM Employees
WHERE commission Is NOT NULL
ORDER BY SALARY DESC , Commission DESC ;
```

10. Display the last name of all employees where the third letter of the name is *a*.(hints:like)

```
SELECT LastName
FROM Employee
WHERE SUBSTR (LastName , 3, 1) = 'a';
```

11. Display the last name of all employees who have an a and an *e* in their last name.(hints: like)

```
SELECT LastName
FROM Employees
WHERE LastName LIKE '%a%' AND LastName LIKE
                                       '%e%';
```

12. Display the last name and job and salary for all employees whose job is sales representative or stock clerk and whose salary is not equal to 2500 ,3500 or 7000.(hints:in,not in)

```
SELECT LastName, JobId,
                      Salary
FROM Employees
WHERE JobId IN ('ST_CLERK,
                      'SA_REP')

AND Salary NOT IN
          (2500, 3500, 7000);
```

Evaluation Procedure	Marks awarded
Query(5)	
Execution (5)	
Viva(5)	
Total (15)	
Faculty Signature	

RESULT:

Thus all the above SQL statements are executed.