EXERCISE-5

Restricting and Sorting data

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----------

WHERECondition;

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
Tosearch forthe string that contain 'SA_'

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

Test for NULL

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

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 BYannsal;
```

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 EMPLOYEE
WHERE salary > 12000;
```

LAST_NAME	SALARY
Johnson	45000
Brown	70000
Williams	50000
Smith	60000
Miller	25000
Anderson	23000
Moore	22000
Davis	80000
Taylor	24000
Wilson	28000

10 rows returned in 0.01 seconds Download

2. Create aquerytodisplaytheemployeelast name and department number for employee number 176.

```
SELECT last_name,department_id
FROM EMPLOYEE
WHERE employee_id = 176;
```

Results | Explain

no data found

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 EMPLOYEE
WHERE salary NOT BETWEEN 5000 AND 12000;
```

LAST_NAME	SALARY
Johnson	45000
Brown	70000
Williams	50000
Smith	60000
Miller	25000
Anderson	23000
Moore	22000
Davis	80000
Taylor	24000
Wilson	28000

10 rows returned in 0.01 seconds Download

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 last_name,job_id,start_date
FROM EMPLOYEE
WHERE hire_date
BETWEEN TO_DATE('1998-02-20', 'YYYY-MM-DD')
AND TO_DATE('1998-05-01', 'YYYY-MM-DD');
```

no data found

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 last_name, department_id
FROM EMPLOYEE
WHERE department_id in (20,50)
ORDER BY last_name ASC;
```

no data found

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 last_name AS "MONTHLY SALARY", salary AS "EMPLOYEE"
FROM EMPLOYEE
WHERE department_id in (20,50) AND salary between 5000 AND 12000
ORDER BY last_name ASC;
```

no data found

7. Displaythelastnameandhiredateofevery employee who was hired in 1994.(hints: like)

```
SELECT last_name, hire_date
FROM EMPLOYEE
WHERE TO_CHAR(hire_date, 'YYYY') LIKE '1994';
```

no data found

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

```
SELECT last_name, job_id
FROM EMPLOYEE
WHERE manager_id IS NULL;
```

LAST_NAME	JOB_ID
Miller	HR_ASSIST
Moore	SA_CLERK
Wilson	IT_TRAINEE

3 rows returned in 0.01 seconds Download

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 last_name, salary, commission_pct
FROM EMPLOYEE
WHERE commission_pct IS NOT NULL
ORDER BY salary DESC, commission_pct DESC;
```

LAST_NAME	SALARY	COMMISSION_PCT
Williams	50000	.1
Moore	22000	.05

2 rows returned in 0.01 seconds Download

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

```
SELECT last_name
FROM EMPLOYEE
WHERE last_name LIKE '__a%';
```

no data found

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

```
SELECT last_name
FROM EMPLOYEE
WHERE last_name LIKE '%a%'
  AND last_name LIKE '%e%';
```

no data found

12. Displaythe lastname 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 last_name, job_id, salary
FROM EMPLOYEE
WHERE job_id IN ('SA_REP', 'SA_CLERK')
  AND salary NOT IN (2500, 3500, 7000);
```

LAST_NAME	JOB_ID	SALARY
Williams	SA_REP	50000
Moore	SA_CLERK	22000

2 rows returned in 0.01 seconds Download

13. Display the last name, salary, and commission for all employees whose commission amount is 20%.(hints:use predicate logic)

```
SELECT last_name, salary, commission_pct
FROM EMPLOYEE
WHERE commission_pct = 0.20;
```

no data found

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