#### **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**

#### Example:

SELECT employee\_id,last\_name, job\_id, department\_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, department\_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	Between two values
AND	
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 EMPLOYEE WHERE salary > 12000;



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

SELECT last name, department id FROM EMPLOYEE WHERE employee id = 176;



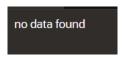
3. Create a query to display the last name and salary of employees whose salary is not in the range of 5000 and 12000. (hints: not between )

SELECT last\_name,salary FROM EMPLOYEE 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 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');



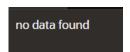
5. Display the last name and department number of all employees in departments 20 and 50 in alphabetical order by name.(hints: in, orderby)

SELECT last\_name, department\_id FROM EMPLOYEE WHERE department\_id in (20,50) ORDER BY last\_name ASC;



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



WHERE department\_id in (20,50) AND salary between 5000 AND 12000 ORDER BY last\_name ASC;

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

SELECT last\_name, hire\_date FROM EMPLOYEE WHERE TO CHAR(hire\_date, 'YYYY') LIKE '1994';



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;



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;



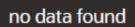
10. Display the last name of all employees where the third letter of the name is a.(hints:like)

SELECT last\_name FROM EMPLOYEE WHERE last\_name LIKE '\_\_a%';



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%';



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 last\_name, job\_id, salary FROM EMPLOYEE WHERE job\_id IN ('SA\_REP', 'SA\_CLERK') AND salary NOT IN (2500, 3500, 7000);



	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 not

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	