SUBQUERY

Prepared By: Dr. Vipul Vekariya

Sub query

- A sub query is a form of SQL statement that appear inside another SQL statement.
- It is also called a nested query.
- The statement containing a sub query is called parent statement.
- The parent statement use the rows returned by the sub query.
- Syntax:

```
SELECT select_list
FROM table
WHERE expr operator
(SELECT select_list  FROM table);
```

- The subquery (inner query) executes once before the main query.
- The result of the subquery is used by the main query (outer query).

Single-Row Subqueries

- Return only one row
- Use single-row comparison operators

Operator	Meaning
=	Equal to
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
<>	Not equal to

Using a Subquery to Solve a Problem

- Who has a salary greater than Abel's?
- Main Query:
- select the name from employees.
- Sub query:

What is Abel's salary?

Query:

- SELECT name FROM employees

WHERE salary >

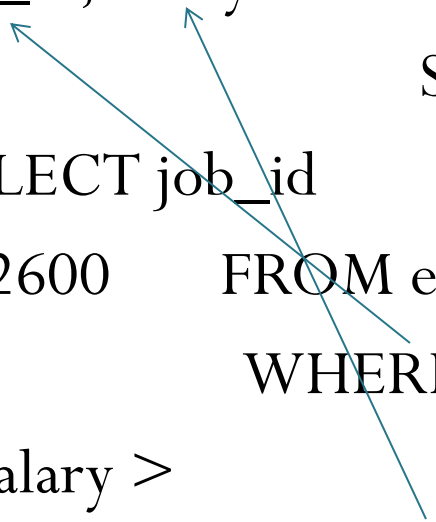
```
(SELECT salary  FROM employees
            WHERE name = 'Abel');
```

Executing Single-Row Subqueries

- SELECT last_name, job_id, salary
  FROM employees
  WHERE job_id = (SELECT job_id
  FROM employees
  WHERE employee_id = 141)
  AND salary >
  (SELECT salary
  FROM employees
  WHERE employee_id = 143);

ST_CLERK

2600



Using Group Functions in a Subquery

- SELECT last_name, job_id, salary

  FROM employees

  WHERE salary = (SELECT MIN(salary)

  FROM employees);

2500

LAST_NAME	JOB_ID	SALARY
Vargas	ST_CLERK	2500

The HAVING Clause with Subqueries

- SELECT department_id, MIN(salary)
  FROM employees
  GROUP BY department_id
  HAVING MIN(salary) > (SELECT MIN(salary)
  FROM employees
  WHERE department_id = 50);

What is Wrong with this Statement?

```
SELECT employee_id, last_name
FROM employees
WHERE salary =    (SELECT MIN(salary)
                   FROM employees
                     GROUP BY department_id);
```

- **ERROR at line 4:**

  ORA-01427: single-row subquery returns more than one row.

Multiple-Row Subqueries

- Return more than one row
- Use multiple-row comparison operators

operator	Meaning
IN	Equal to any member in the list
ANY	Compare value to each value returned by the sub query
ALL	Compare value to every value returned by the sub query

IN Operator

- **IN:**

(Q):Display the Details of all the Employees Whose Salaries are Matching with Least Investments of Departments?

(A):

SQL>Select Ename Sal Deptno from Emp Where

Sal IN(Select Min(Sal) From Emp Group By Deptno);

ANY

ANY:->Means Less Than The Maximum Value in the List.

1) < Any means less than at least one value
2) >Any means greater than at least one value

ALL

- <ALL:->Means Less Than The Minimum Value in the List.

  1) < all means less than every value in list

  2) > all means greater than the every value

Difference between all and any

- Using the > comparison operator as an example:
- **> all** means greater than every value, or greater than the maximum value. For example, **> all** (1, 2, 3) means greater than 3.
- **> any** means greater than at least one value, or greater than the minimum value. Therefore, **> any** (1, 2, 3) means greater than 1.