Aditya College of Engineering & Technology

(Permanently Affiliated to JNTU, Kakinada, Approved by AICTE, New Delhi)
(Accredited by NAAC, Recognized by UGC under Section (2f) and 12(B) of UGC Act 1965)

Nested queries Vs Natural Join

Mr.Ch.S.V.V.S.N.Murty
Associate Professor,
Department of C.S.E,
Aditya College of Engineering & Technology,
Surampalem.

Flipped Classroom

The student gave lecture on the following topics by taking guidelines from the lecturer. At the end of this session the student who gave lecture will have complete command on these topics and all the students will be participated actively to exercise these topics.

Topics discussed

Queries using group by, having, order by classes, sub queries and co-related sub queries. Transaction control language commands: Commit, Rollback, and Savepoint
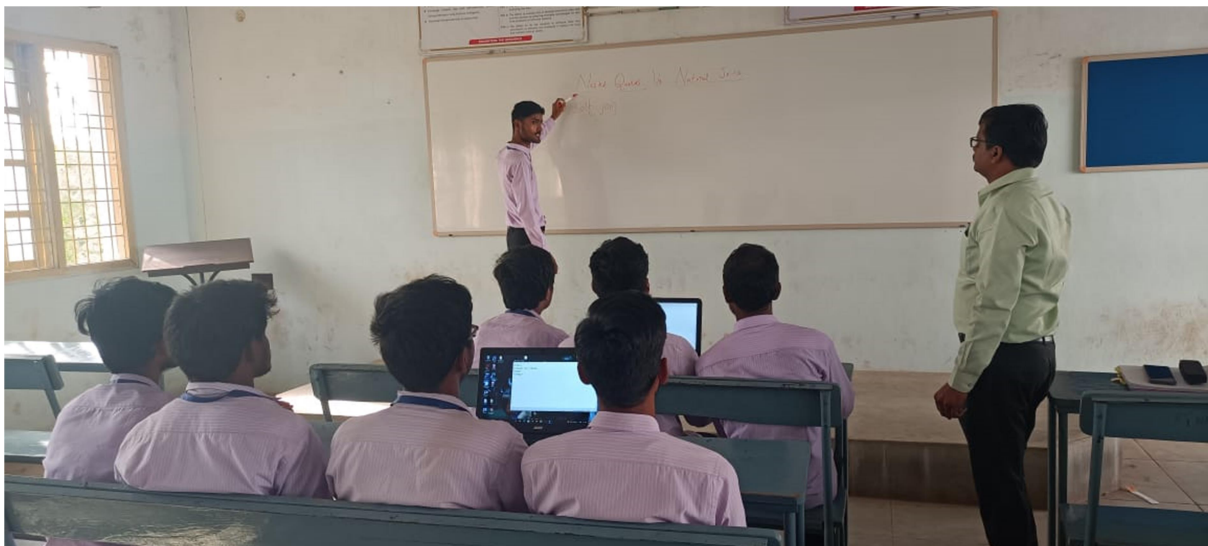

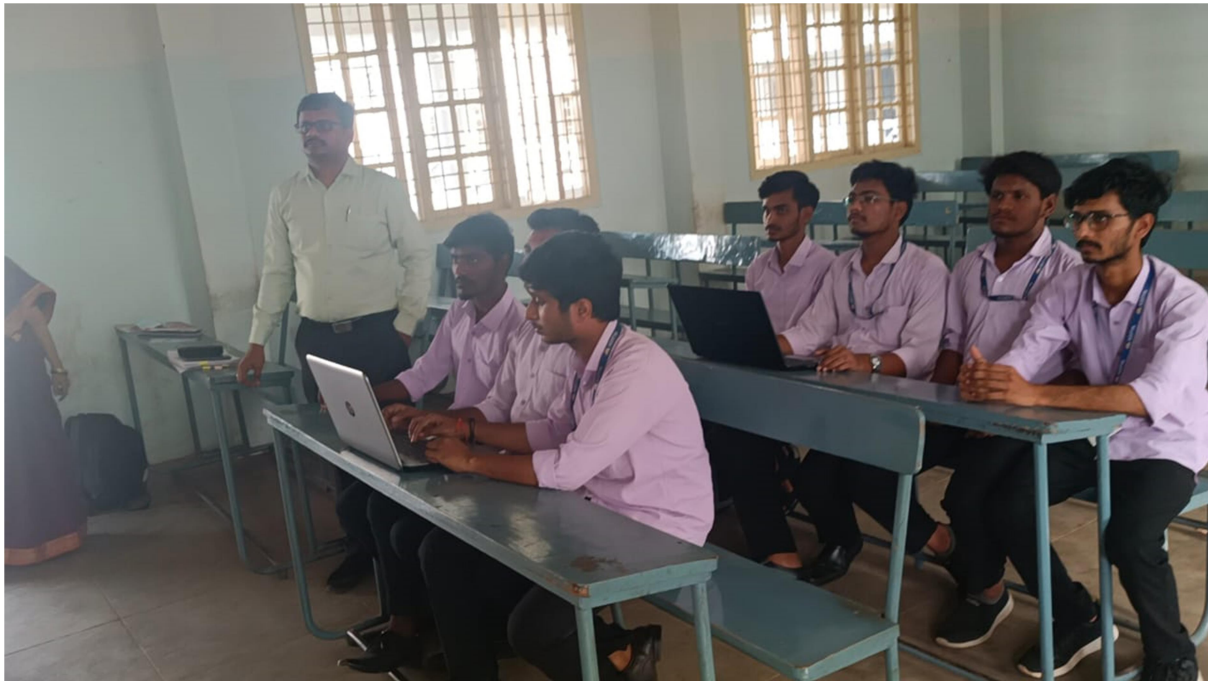**Fig.1. Flipped class room – Demo by a student**

Fig.2. Flipped class room- Giving guidelines by Faculty

Group by clause:
Using group by, we can create groups of related information. Columns used in select clause must be used with group by clause, otherwise it was not a group by expression.

Having clause:
This will work as where clause which can be used only with group by clause because of absence of where clause in group by.

Order by clause:
This will be used to ordering the columns data (ascending or descending).
ASC (default) and DESC – specify the ordering of values, either ascending or descending

Sub queries and co-related sub queries
1. Display the name of the employee who earns highest salary.
   Query : select ename from employee where salary=(select max(salary) from employee);
   Result:

ENAME
Venkat

2. Display the employee number and name for employee working as clerk and earning highest salary among clerks.

            select   empno, ename
            from   employee
            where   job = (select jcode from job where name ='Clerk') and
                       salary= (select max(salary)   from employee

<div align="right">

where job = (select jcode
from job
where name ='Clerk'));

</div>

Result:

EMPNO	ENAME
10	Suresh
12	Kumar

3. Display the names of employee whose job role is 'Staff' and earns salary more than the highest salary of any 'Clerk'.

```
select      empno, ename
from        employee
where       job=    (select jcode
                    from job
                    where name ='Staff')
            and
            salary > (select max(salary)
                      from employee
                      where job = (        select jcode
                                   from job
                                   where name ='Clerk'));
```

Result:

EMPNO	ENAME
5	Krishna
6	Deepa
7	Keerthi
9	Srikanth

4. Display the names of clerks who earn a salary more than the lowest salary of any employee whose job role is Staff.

```
select   empno, ename
from    employee
where   job =   (select jcode from job where name ='Clerk') and
            salary > (select min(salary)
                      from employee
                      where  job = (select jcode
                                    from job
                                    where name ='Staff'));
```

Result:

no data found

5. Display the names of the employees who earn highest salary in their respective departments.
select ename, sal, deptno from emp where sal in(select max(sal) from emp group by deptno);

Result:

ENAME	SALARY	DEPTNO
Srinivas	1000000	30
Pradeep	1000000	40
Srikanth	400000	34
Aravind	800000	30
Nirmala	800000	20
Keerthi	600000	24
Deepa	600000	23
Venkat	1200000	40
Krishna	500000	12

6. Display the names of the employees who earn highest salaries in their respective job groups.
select ename, salary, job from employee where salary in(select max(salary) from employee group by job);

Result:

ENAME	SALARY	JOB
Venkat	1200000	672
Aravind	800000	671
Nirmala	800000	671
Srinivas	1000000	669
Pradeep	1000000	669
Kumar	120000	667
Suresh	120000	667
Keerthi	600000	668
Deepa	600000	668

7. Display the employee names who are working in 'Operations' department.
        Select ename
        From   employee
        Where deptno in (select deptno
                        from dept

where name='Operations');

Result:

ENAME
Venkat
Pradeep
Keerthi
Srikanth

8. Display the employee names who are working in Kakinada.
   Select ename
   From   employee
   Where deptno in (select deptno
                     from dept
                     where location = (select lcode
                                       from location
                                       where name = 'Kakinada'));
   Result:

ENAME
Krishna

9. Display the names of employees from department number 30 with salary greater than
   that of any employee working in other department.
   Select ename
   From   employee
   Where deptno=30 and
           salary > any   (select salary
                           from employee
                           where deptno not in 30)
   Result:

ENAME
Srinivas
Aravind

10. Display the names of the employees from department number 30 with salary greater
    than that of all employee working in other departments.
    Select ename
    From   employee
    Where deptno=30 and

salary > all   (select salary
                     from employee
                     where deptno not in 30)

      Result:

          No data Found

11. Display the names of the employees from department number 40 with salary greater than that of all employee working in other departments.

Select ename
From   employee
Where deptno=40 and
       salary > all   (select salary
                     from employee
                     where deptno not in 40)

      Result:

ENAME
Venkat

1 rows returned

Transaction control language commands: Commit, Rollback, and Savepoint.

1. select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

      Result: 14 rows selected.

2. delete from emp where empno=7369;
      Result: 1 row deleted.

3. select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

Result: 13 rows selected.

4. rollback;

   Result: rollback completed.

5. select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

Result: 14 rows selected.

6. delete from emp where empno<=7550;

   Result: 3 rows deleted.

7. commit;

   Result: commit completed.

8. rollback;

   Result: rollback completed.

9. select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

Result: 11 rows selected.

10. insert into emp values(7369,'smith','clear',7902,'17-DEC-1980',800,null,20);

Result: 1 row inserted.

11. insert into emp values(7499,'allen','salesman',7698,'20-FEB-1981',1600,300,30);

Result: 1 row inserted.

12. insert into emp values(7521,'ward','salesman',7698,'22-FEB-1981',1250,500,30);

Result: 1 row inserted.

13. savepoint firstrow;

Result: savepoint created.

14. delete from emp where empno=7369;

Result: 1 row deleted.

15. savepoint secondrow;

Result: savepoint created.

16. delete from emp where empno=7499;

Result: 1 row deleted.

17. savepoint thirdrow;

Result: savepoint created.

18. delete from emp where empno=7521;

Result: 1 row deleted.

19. select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

Result: 11 rows selected.

20. rollback to secondrow;

Result: rollback completed.

21. Select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10
7499	allen	salesman	7698	20-FEB-81	1600	300	30
7521	ward	salesman	7698	22-FEB-81	1250	500	30

Result: 13 rows selected.

Natural Join

Natural join operation is used to combine two tables based on common columns. To perform natural join, there must be a common attribute between the two tables.
Syntax:

SELECT *
FROM Table 1
NATURAL JOIN Table 2