**SUBQUERIES**

A query nested within a query is known as subquery.

For example, you want to see all the employees whose salary is above average salary. For this you have to first compute the average salary using AVG function and then compare employees salaries with this computed salary. This is possible using subquery. Here the sub query will first compute the average salary and then main query will execute.

Select \* from emp where sal > (select avg(sal) from emp);

Similarly we want to see the name and empno of that employee whose salary is maximum.

Select \* from emp where sal = (select max(sal) from emp);

To see second maximum salary

Select max(sal) from emp where  
       sal < (select max(sal) from emp);

Similarly to see the Third highest salary.

Select max(sal) from emp where   
        sal < (select max(sal) from emp where   
               sal < (select max(sal) from emp));

We want to see how many employees are there whose salary is above average.

Select count(\*) from emp where  
      sal > (select max(sal) from emp);

We want to see those employees who are working in Hyderabad. Remember emp and dept are joined on deptno and city column is in the dept table. Assuming that wherever the department is located the employee is working in that city.

Select \* from emp where deptno  
      in (select deptno from dept where city=’HYD’);

You can also use subquery in FROM clause of SELECT statement.

For example the following query returns the top 5 salaries from employees table.

Select sal from (select sal from emp order sal desc)   
             where rownum <= 5;

To see the sum salary deptwise you can give the following query.

Select sum(sal) from emp group by deptno;

Now to see the average total salary deptwise you can give a sub query in FROM clause.

select  avg(depttotal) from (select sum(sal) as depttotal from emp group by deptno);

**WITH**

The above average total salary department wise can also be achieved from Oracle Version 9i using WITH clause given below

WITH  
  DEPTOT AS (select sum(sal) as dsal from emp   
                group by deptno)  
  select avg(dsal) from deptot;

**GROUP BY QUERIES**

You can group query results on some column values. When you give a SELECT statement without group by clause then all the resultant rows are treated as a single group.

For Example, we want to see the sum salary of all employees dept wise. Then the following query will achieved the result

Select deptno,sum(sal) from emp group by deptno;

Similarly we want to see the average salary dept wise

Select deptno,avg(sal) from emp group by deptno;

Similarly we want to see the maximum salary in each department.

Select deptno,max(sal) from emp group by deptno;

Similarly the minimum salary.

Select deptno,min(sal) from emp group by deptno;

Now we want to see the number of employees working in each department.

Select deptno,count(\*) from emp group by deptno;

Now we want to see total salary department wise where the dept wise total salary is above 5000.

For this you have to use HAVING clause. Remember HAVING clause is used to filter groups and WHERE clause is used to filter rows. You cannot use WHERE clause to filter groups.

select deptno,sum(sal) from emp group by deptno   
                  having sum(sal) >= 5000;

We want to see those departments  and the number of employees working in them where the number of employees is more than 2.

Select deptno, count(\*) from emp group by deptno  
                        having count(\*) >=2;

Instead of displaying deptno you can also display deptnames  by using join conditions.

For example we want to see deptname and average salary of them.

Select dname,avg(sal) from emp,dept   
           where emp.deptno=dept.deptno group by dname;

Similarly to see sum of sal.

Select dname,sum(sal) from emp,dept   
   where emp.deptno=dept.deptno group by dname;

We want to see the cities name and the no of employees working in each city. Remember emp and dept are joined on deptno and city column is in the dept table. Assuming that wherever the department is located the employee is working in that city.

Select dept.city,count(empno) from emp,dept   
       where emp.deptno=dept.deptno   
             Group by dept.city;