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Subqueries

A subquery is a query within a query. In Oracle, you can create subqueries within your SQL statements. These subqueries can reside in the WHERE clause, the FROM clause, or the SELECT clause.

WHERE clause

Most often, the subquery will be found in the WHERE clause. These subqueries are also called **nested subqueries**.

For example:

```
select * from all_tables tabs
where tabs.table_name in                    (select cols.table_name
                                              from all_tab_columns cols
                                              where cols.column_name =
                                             'SUPPLIER_ID');
```

Limitations:

Oracle allows up to 255 levels of subqueries in the WHERE clause.

FROM clause

A subquery can also be found in the FROM clause. These are called **inline views**.

For example:

```
select suppliers.name, subquery1.total_amt
from suppliers,
   (select supplier_id, Sum(orders.amount) as total_amt
    from orders
    group by supplier_id) subquery1,
where subquery1.supplier_id = suppliers.supplier_id;
```

In this example, we've created a subquery in the FROM clause as follows:

```
(select supplier_id, Sum(orders.amount) as total_amt
 from orders
 group by supplier_id) subquery1
```

This subquery has been aliased with the name *subquery1*. This will be the name used to reference this subquery or any of its fields.

Oracle allows an unlimited number of subqueries in the FROM clause.

SELECT clause

A subquery can also be found in the SELECT clause.

For example:

select tbls.owner, tbls.table_name,
  (select count(column_name) as total_columns
   from all_tab_columns cols
   where cols.owner = tbls.owner
   and cols.table_name = tbls.table_name) subquery2
from all_tables tbls;

In this example, we've created a subquery in the SELECT clause as follows:

(select count(column_name) as total_columns
 from all_tab_columns cols
 where cols.owner = tbls.owner
 and cols.table_name = tbls.table_name) subquery2

The subquery has been aliased with the name *subquery2*. This will be the name used to reference this subquery or any of its fields.

The trick to placing a subquery in the select clause is that the subquery must return a single value. This is why an aggregate function such as SUM, COUNT, MIN, or MAX is commonly used in the subquery.