SQL Server 2014

Day-5

Subqueries

A Subquery or a nested query, is a SELECT statement that returns a single value or multiple values, and is nested inside a SELECT, INSERT, UPDATE or DELETE statement or inside another subquery.

A Subquery can be used anywhere an expression is allowed.

In a batch the subquery gets executed first, returns a value or a group of value. This value is then used to execute the main query.

Subqueries are always enclosed within ().

Types of subqueries:

1. WHERE *<expression>* [NOT] IN (*subquery*)

2. WHERE *<expression><comparison operator>*[ANY| ALL] (*subquery*)

3. WHERE [NOT] EXISTS (*subquery*)

Subqueries used with IN or NOT IN

The result of a subquery introduced with IN or with NOT IN is a list of zero or more values.

The subquery executes first and the outer query searches for the value of the expression in or not in the result set of the subquery.

Example is

USE Pubs

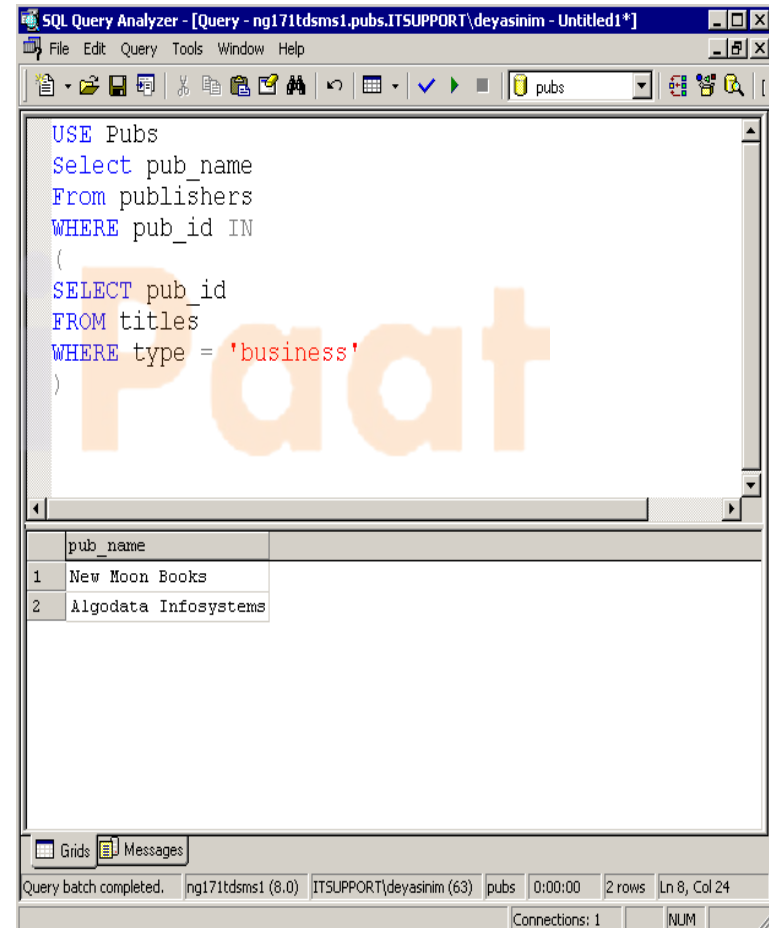Select pub_name

From publishers

WHERE pub_id IN

(

SELECT pub_id

FROM titles

WHERE type = 'business'

)

Subqueries used with ANY or ALL

Comparison operators can be used with the results of a subquery by using the ANY or ALL keywords.

The ALL and ANY keywords each compare a scalar value with every record of the result set of the subquery one by one.

The ALL Keyword applies to every value and the ANY Keyword applies to at least one value.

Example is

USE Pubs

Select royaltyper
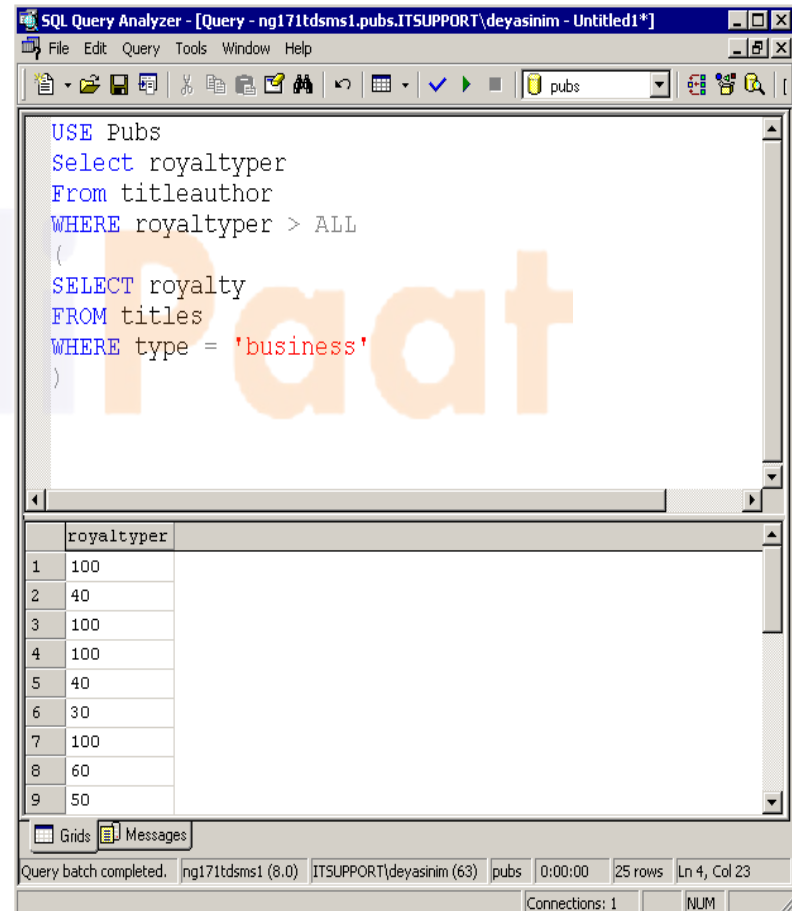
From titleauthor

WHERE royaltyper > ALL

(

SELECT royalty

FROM titles

WHERE type = 'business'

)

Subqueries used with EXISTS and NOT EXISTS

The subquery executes first and the outer query searches for the records that contain or do not contain the result set of the subquery.

EXISTS or NOT EXISTS is a search keyword that the outer query uses to search in the results of the subquery.

Example is

USE Pubs

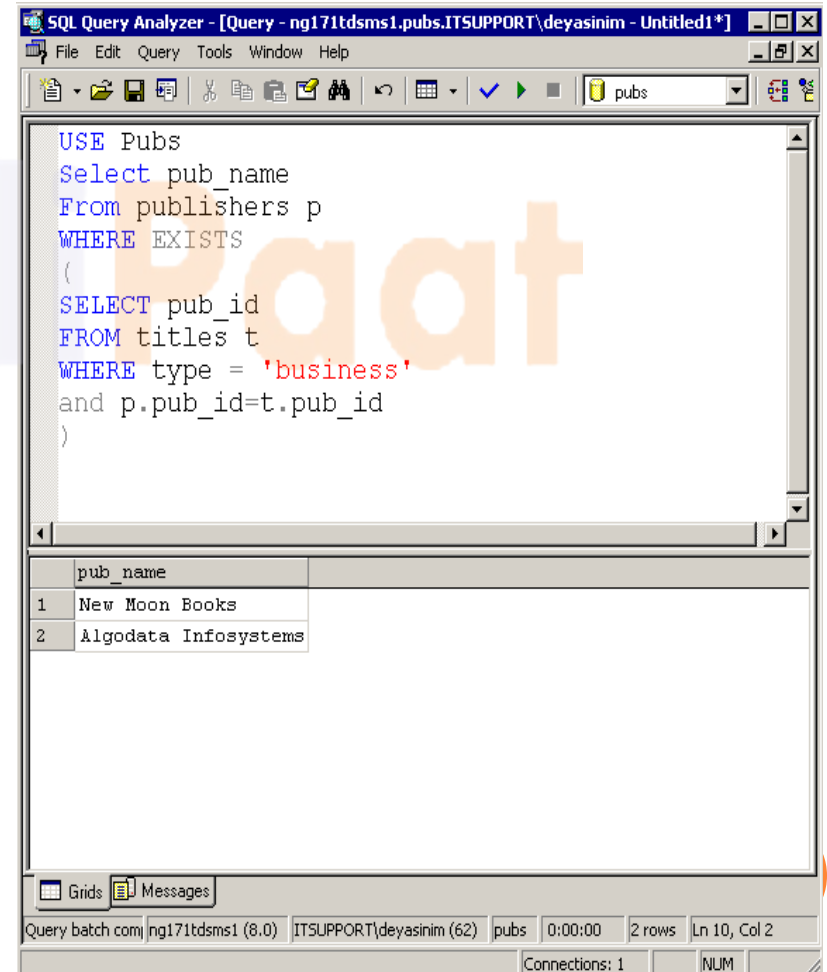*Select pub_name*

From publishers p

WHERE EXISTS

(

SELECT pub_id

FROM titles t

WHERE type = 'business'

and p.pub_id=t.pub_id

)

```
SQL Query Analyzer - [Query - ng171tdsms1.pubs.ITSUPPORT\deyasinim - Untitled1*]
File   Edit   Query   Tools   Window   Help

USE Pubs
Select pub_name
From publishers p
WHERE EXISTS
(
SELECT pub_id
FROM titles t
WHERE type = 'business'
and p.pub_id=t.pub_id
)
```

	pub_name
1	New Moon Books
2	Algodata Infosystems

Grids Messages

Query batch com ng171tdsms1 (8.0) | ITSUPPORT\deyasinim (62) | pubs | 0:00:00 | 2 rows | Ln 10, Col 2

Connections: 1   NUM

Exercise

1. Use a subquery to identify the employee ID of those employees who live in Seattle. Then produce a report of those orders that were processed by these employees in Seattle.

2. Use a subquery to identify the royalty in roysched table in Pubs database. Then produce a report of those titles that have royalty less than any of the royalty in roysched table.

Solution

Left window:

```
USE Northwind
SELECT OrderID
FROM Orders
WHERE EmployeeID IN
(
SELECT EmployeeID
FROM Employees
WHERE City = 'Seattle'
)
```

	OrderID
1	10258
2	10270
3	10275
4	10285
5	10292
6	10293
7	10304
8	10306
9	10311
10	10314

Right window:

```
USE Pubs
SELECT title
FROM titles
WHERE royalty < ANY
(
SELECT royalty
FROM roysched
)
```

	title
1	The Busy Executive's Databa...
2	Cooking with Computers: Sur...
3	Straight Talk About Computers
4	Silicon Valley Gastronomic ...
5	But Is It User Friendly?
6	Secrets of Silicon Valley
7	Computer Phobic AND Non-Pho...
8	Is Anger the Enemy?
9	Life Without Fear
10	Prolonged Data Deprivation:...