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Information Technology

T5616SN

Database

Subqueries

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1 Subqueries

A subquery is a query that is nested inside a SELECT, INSERT, UPDATE,
or DELETE statement, or inside another subquery. A subquery can be used
anywhere an expression is allowed. A subquery is also called an inner query
or inner select, while the statement containing a subquery is also called an
outer query or outer select. The following shows an example of subqueries:

```
1  SELECT Name
2  FROM AdventureWorks2008R2.Production.Product
3  WHERE ListPrice =
4      (SELECT ListPrice
5       FROM AdventureWorks2008R2.Production.Product
6       WHERE Name = 'Chainring Bolts' );
```

Many Transact-SQL statements that include subqueries can be alternatively
formulated as joins. The following is an example showing a join SELECT
that return the same result set as the previous example:

```
1  SELECT Prd1. Name
2  FROM AdventureWorks2008R2.Production.Product AS Prd1
3      JOIN AdventureWorks2008R2.Production.Product AS Prd2
4          ON (Prd1.ListPrice = Prd2.ListPrice)
5  WHERE Prd2. Name = 'Chainring Bolts';
```
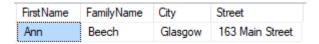
The SELECT query of a subquery is always enclosed in parentheses. A
subquery can be nested inside the WHERE or HAVING clause of an outer
SELECT, INSERT, UPDATE, or DELETE statement, or inside another sub-
query. A subquery can appear anywhere an expression can be used, if it
returns a single value. If a table appears only in a subquery and not in the
outer query, then columns from that table cannot be included in the output
(the select list of the outer query).

2 Practical part

Find the branch where Ann works. Include at least columns Street and City
from Branch table. If you want to include column FirstName from Staff
table, you need to use JOIN operation.

```
1  SELECT Staff.FirstName , Staff.FamilyName , Branch.City , Branch
       .Street
```

```
2  FROM Branch
3  FULL OUTER JOIN Staff ON Branch.Id=Staff.BranchId
4  WHERE Staff.FirstName='Ann'
```

FirstName	FamilyName	City	Street
Ann	Beech	Glasgow	163 Main Street

List the Staff who work in the branch at '32 Manse Road'... and only those whose position is 'Assistant' in that same branch. Include at least columns FirstName and FamilyName from Staff table. If you want to include column Street information from Branch table, you need to use JOIN operation.

```
1  SELECT Staff.FirstName, Staff.POSITION, Branch.City, Branch.
       Street
2  FROM Branch
3  FULL OUTER JOIN Staff ON Branch.Id=Staff.BranchId
4  WHERE Branch.Street='32 Manse Road' AND Staff.POSITION='
       Assistant'
```

FirstName	Position	City	Street
Julie	Assistant	Bristol	32 Manse Road

Find the owner of the property for rent at address 'Slippery Lane 16'. Include at least columns FirstName and FamilyName from PrivateOwner table. If you want to include column Street information from PropertyForRent table, you need to use JOIN operation.

```
1  SELECT PrivateOwner.FirstName,PrivateOwner.FamilyName,
       PropertyForRent.Street
2  FROM PrivateOwner
3  FULL OUTER JOIN PropertyForRent ON PrivateOwner.Id=
       PropertyForRent.PrivateOwnerId
4  WHERE PropertyForRent.Street='Slippery Lane 16'
```

FirstName	FamilyName	Street
Carol	Farrel	Slippery Lane 16

List the names of all clients who have viewed a property at 15th of June. Include at least columns FirstName and FamilyName from Client table. If you want to include column ViewDate information from Viewing table, you need to use JOIN operation. Using JOIN needs also keyword DISTINCT.

```
1  SELECT DISTINCT Client.FirstName,Client.FamilyName,Viewing.
       ViewDate
```

```
2  FROM Client
3  FULL OUTER JOIN Viewing ON Client.Id=Viewing.ClientId
4  WHERE Viewing.ViewDate='2018-06-15'
```

FirstName	FamilyName	ViewDate
Bailey	Shorrock	2018-06-15 00:00:00.000
Hope	Springs	2018-06-15 00:00:00.000
Minnie	Miles	2018-06-15 00:00:00.000
Uschi	Tipton	2018-06-15 00:00:00.000
Wade	Ozier	2018-06-15 00:00:00.000

List the names of all clients who have viewed a property at 15th of June or at 16th of June. Include at least columns FirstName and FamilyName from Client table. If you want to include column ViewDate information from Viewing table, you need to use JOIN.

```
1  SELECT DISTINCT Client.FirstName,Client.FamilyName,Viewing.
       ViewDate
2  FROM Client
3  FULL OUTER JOIN Viewing ON Client.Id=Viewing.ClientId
4  WHERE Viewing.ViewDate='2018-06-15' OR Viewing.ViewDate='
       2018-06-16'
```

FirstName	FamilyName	ViewDate
Bailey	Shorrock	2018-06-15 00:00:00.000
Cael	Metcalf	2018-06-16 00:00:00.000
Hope	Springs	2018-06-15 00:00:00.000
Minnie	Miles	2018-06-15 00:00:00.000
Salomon	Savell	2018-06-16 00:00:00.000
Uschi	Tipton	2018-06-15 00:00:00.000
Wade	Ozier	2018-06-15 00:00:00.000

List the name of all clients who has viewed a property at 15th of June and who did not give any comments. Include at least columns FirstName and FamilyName from Client table.

```
1  SELECT DISTINCT Client.FirstName,Client.FamilyName,Viewing.
       ViewDate,Viewing.CommentsGiven
2  FROM Client
3  FULL OUTER JOIN Viewing ON Client.Id=Viewing.ClientId
4  WHERE Viewing.ViewDate='2018-06-15' AND Viewing.CommentsGiven
       IS NULL
```

FirstName	FamilyName	ViewDate	CommentsGiven
Minnie	Miles	2018-06-15 00:00:00.000	NULL
Uschi	Tipton	2018-06-15 00:00:00.000	NULL

Find the name of a staff member who manages property for rent at '8 Naval Drive'. Include at least columns FirstName and FamilyName from Staff table.

```sql
SELECT Staff.FirstName, Staff.FamilyName, PropertyForRent.
    Street
FROM Staff
FULL OUTER JOIN PropertyForRent ON Staff.Id=PropertyForRent.
    StaffId
WHERE PropertyForRent.Street='8 Naval Drive'
```

FirstName	FamilyName	Street
Cris	Cross	8 Naval Drive

Find the names of all clients who have viewed Flats. Include at least columns FirstName and FamilyName from Client table.

```sql
SELECT Client.FirstName, Client.FamilyName, PropertyForRent.
    TypeOfProperty, Viewing.ViewDate
FROM Viewing
FULL OUTER JOIN PropertyForRent ON PropertyForRent.Id=Viewing
    .PropertyForRentId
FULL OUTER JOIN Client ON Client.Id=Viewing.ClientId
WHERE PropertyForRent.TypeOfProperty='Flat'
```

FirstName	FamilyName	TypeOfProperty	ViewDate
Aline	Stewart	Flat	2018-03-24 00:00:00.000
John	Kay	Flat	2018-04-20 00:00:00.000
Mary	Tregear	Flat	2018-06-13 00:00:00.000
Aline	Stewart	Flat	2018-05-28 00:00:00.000
Aspen	Marriott	Flat	2018-06-14 00:00:00.000
Aline	Stewart	Flat	2018-05-26 00:00:00.000