

Intersect, Except & Apply

New tools for your SQL Toolbox

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#1 | ORLANDO 2007

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Rudy Rodarte

- Started on SQL Server 2000
- MCTS & MCITP - 2008
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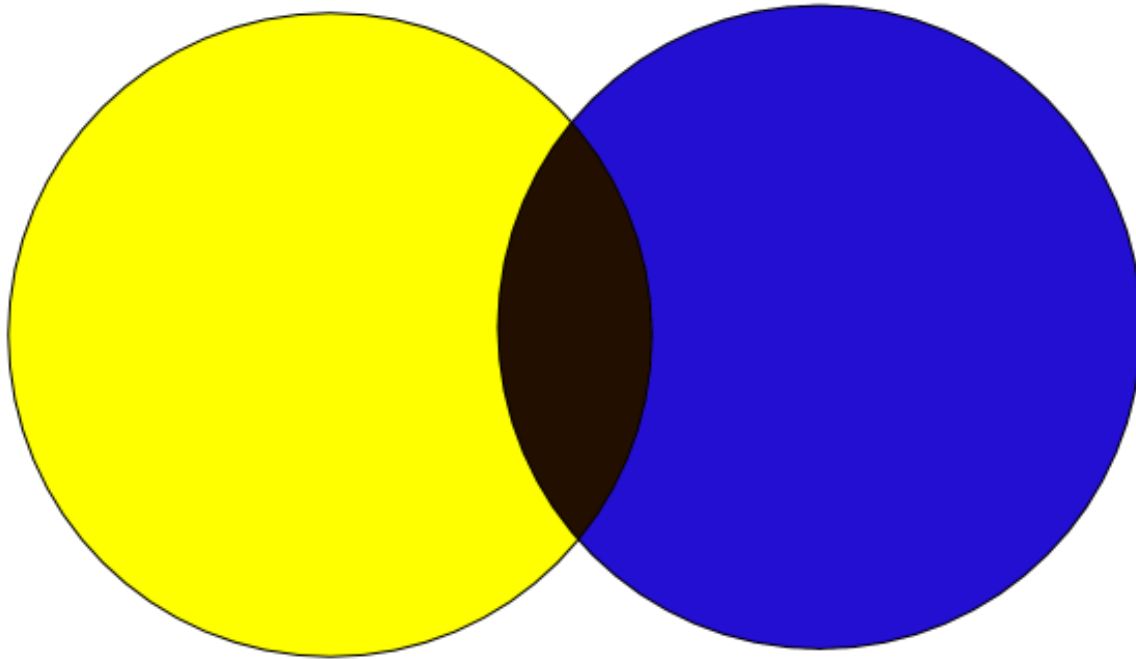


Agenda

- INTERSECT
- EXCEPT
- CROSS APPLY
- OUTER APPLY

INTERSECT AND EXCEPT

INTERSECT



INTERSECT

- INTERSECT returns distinct values on the left and right sides of the INTERSECT
- The number and order of the columns must be the same in all queries
- The data types must be compatible

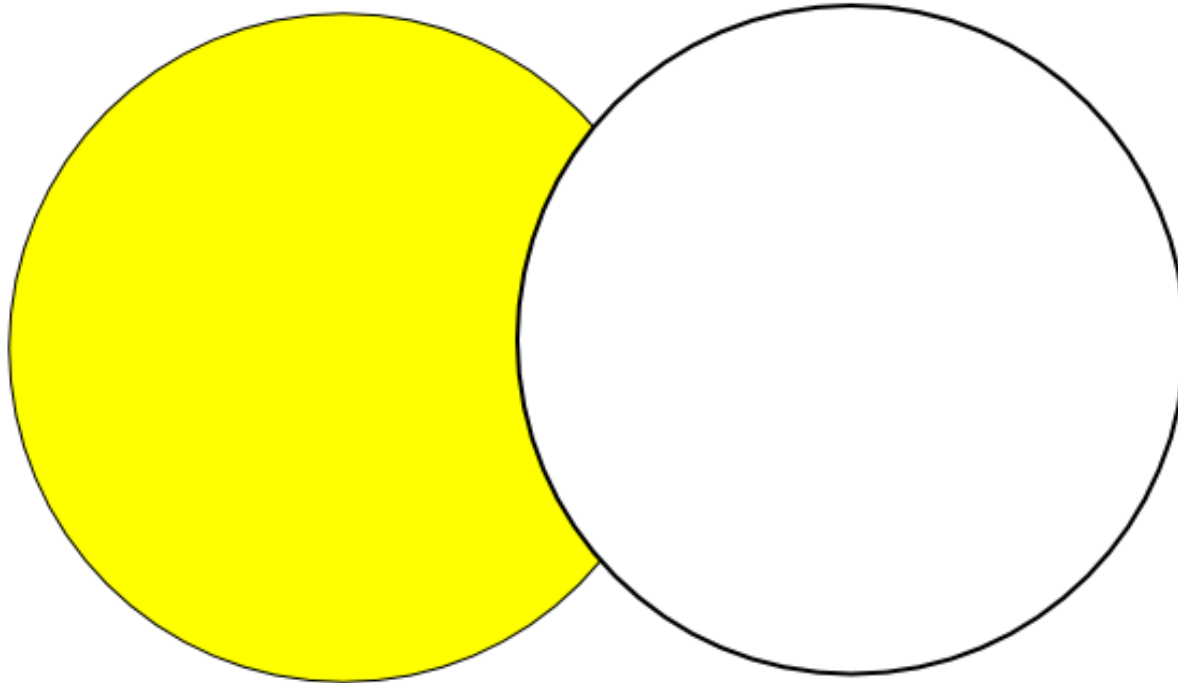
INTERSECT

```
select FirstName, LastName, Phone  
from Leads2014  
intersect  
select FirstName, LastName, Phone  
from Leads2013
```


INTERSECT

- You may also like
 - UNION [ALL]
 - INNER JOIN
 - IN
 - EXISTS

EXCEPT



EXCEPT

- EXCEPT returns any distinct values from the left query that are not also found on the right query
- The number and order of the columns must be the same in all queries
- The data types must be compatible

EXCEPT

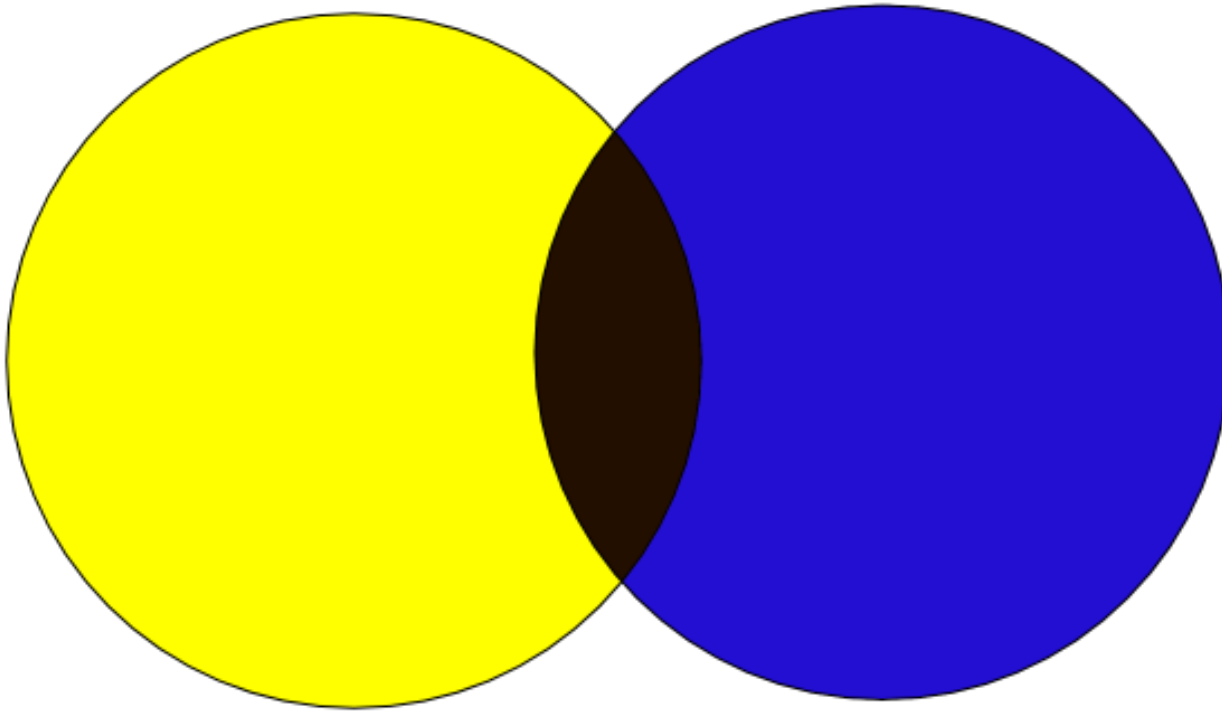
```
select FirstName, LastName, Phone  
from Leads2014  
except  
select FirstName, LastName, Phone  
from Leads2013
```

EXCEPT

- You may also like
 - NOT IN
 - NOT EXISTS
 - OUTER JOINS?

CROSS APPLY AND OUTER APPLY

CROSS APPLY



CROSS APPLY

- The APPLY operator allows you to invoke a table-valued function for each row returned by an outer table expression of a query. *

CROSS APPLY

In the field, you'll see this:

```
SELECT *  
FROM sys.dm_exec_query_stats QS  
CROSS APPLY  
sys.dm_exec_sql_text(QS.sql_handle) ST
```

sql_handle
0x0200000016EF4D1B4BF65E91FF63A5D60122505E5DC89280
0x02000000CECB090B3490AE54ECABC5E68406775FE1B96A21

CROSS APPLY

SELECT
STATEMENT

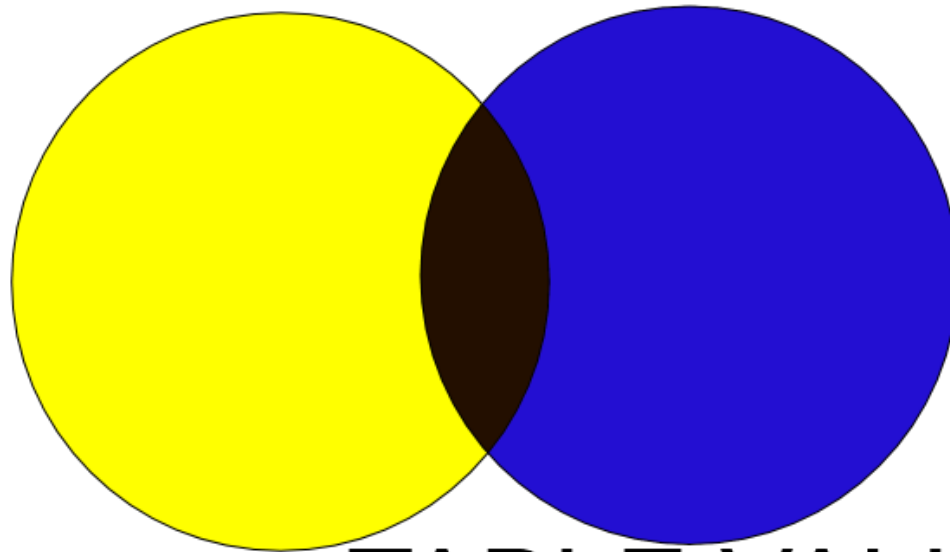


TABLE VALUED
FUNCTION

CROSS APPLY

Bring us rows from

```
SELECT *
```

```
FROM sys.dm_exec_query_stats QS
```

where the DMF sys.dm_exec_sql_text
returns data

CROSS APPLY

```
sys.dm_exec_sql_text(QS.sql_handle) as ST
```

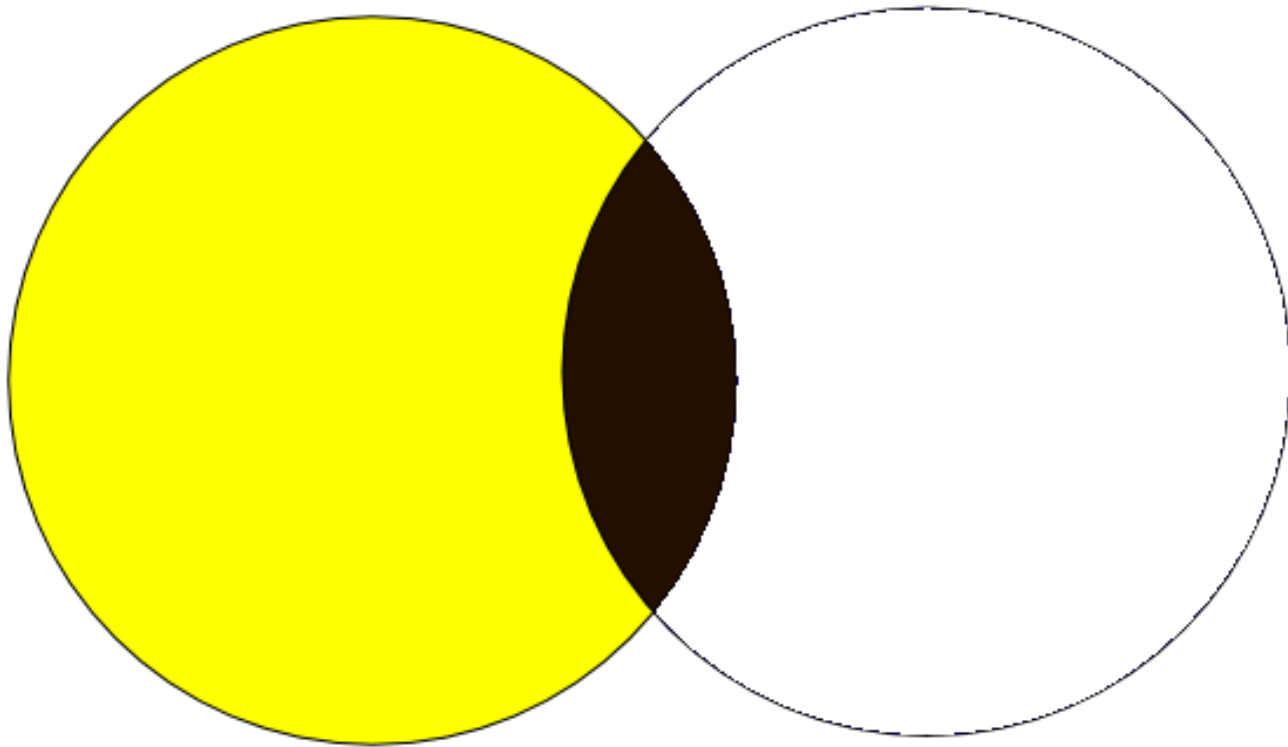
CROSS APPLY

- But wait, there is more!
- CROSS APPLY works with derived tables for advanced filtering

CROSS APPLY

- You may also like:
 - SUB SELECT
 - INNER JOIN
 - Nested select

OUTER APPLY



OUTER APPLY

- OUTER APPLY returns both rows that produce a result set, and rows that do not, with NULL values in the columns produced by the table-valued function.

OUTER APPLY

In the field, you'll see this:

```
select *  
from sys.dm_exec_query_stats QS  
cross apply  
sys.dm_exec_sql_text(QS.sql_handle) ST  
outer apply  
sys.dm_exec_plan_attributes(QS.plan_handle)  
PA
```


OUTER APPLY

SELECT
STATEMENT

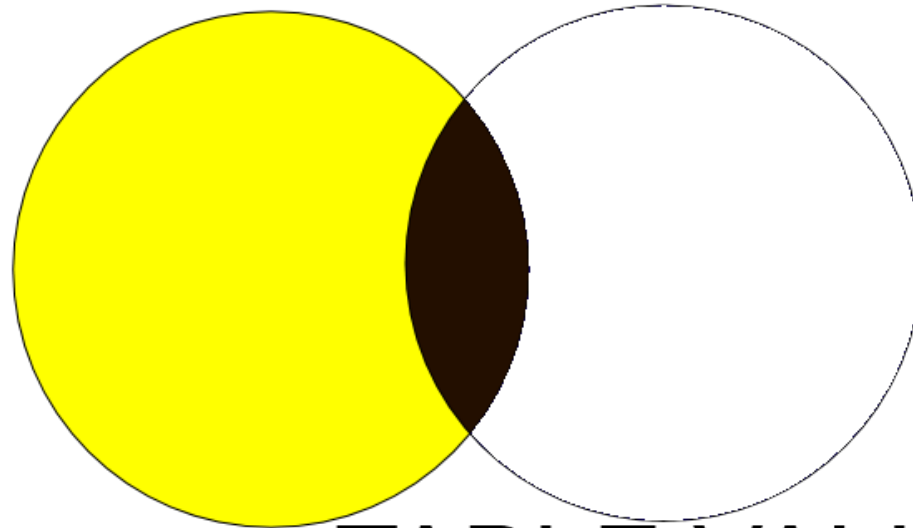


TABLE VALUED
FUNCTION

OUTER APPLY

Bring us rows from

```
Select *  
FROM sys.dm_exec_query_stats QS  
      CROSS APPLY sys.dm_exec_sql_text(QS.sql_handle) ST
```

where the DMF sys.dm_exec_plan_attributes
returns data

```
outer apply sys.dm_exec_plan_attributes(QS.plan_handle)  
PA
```

OUTER APPLY

- You may also like:
 - SUB SELECT
 - LEFT OUTER JOIN
 - Nested SELECT with **ISNULL**

Demo

When to use

When do I use these instead of the other operators?

It depends

Review

- INTERSECT
- EXCEPT
- CROSS APPLY
- OUTER APPLY

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