

Chennai SQL Server User Group



Nothing But NULL

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NULL can be defined as

- Absence of value
- Undefined
- The value which is unknown at this point of time.

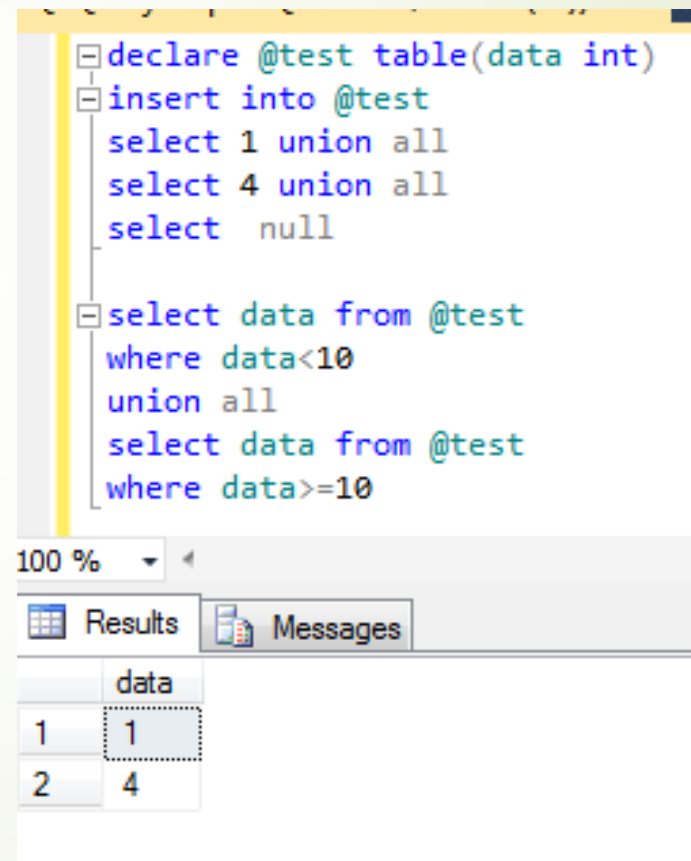


All data types can be defined with NULL constraint

Direct usage of arithmetic or logical operations on NULL will not work as expected

```
declare @test table(data int)
insert into @test
select 1 union all
select 4 union all
select null

select data from @test
where data<10
union all
select data from @test
where data>=10
```



```
declare @test table(data int)
insert into @test
select 1 union all
select 4 union all
select null


select data from @test
where data<10
union all
select data from @test
where data>=10
```

100 %

Results Messages

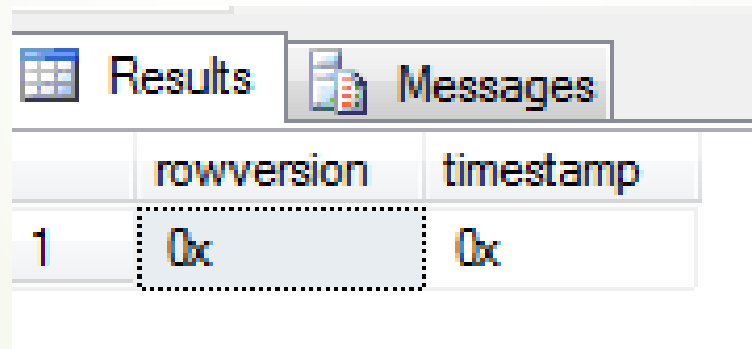
	data
1	1
2	4

- 
- The system functions ISNULL, COALESE and NULLIF are used only to deal with NULL

- 
- NOT NULL constraint cannot be defined for a computed column until it is also PERSISTED

- The only data types that will interpret NULL differently are row version and timestamp

```
declare @rv rowversion , @ts timestamp
select @rv=null, @ts=null
select @rv as rowversion,@ts as timestamp
```



The screenshot shows a SQL Server interface with two tabs: 'Results' and 'Messages'. The 'Results' tab is active and displays a table with two columns: 'rowversion' and 'timestamp'. The first row of data shows the value '0x' for both columns. A dashed border highlights the '0x' value in the 'rowversion' column.

	rowversion	timestamp
1	0x	0x

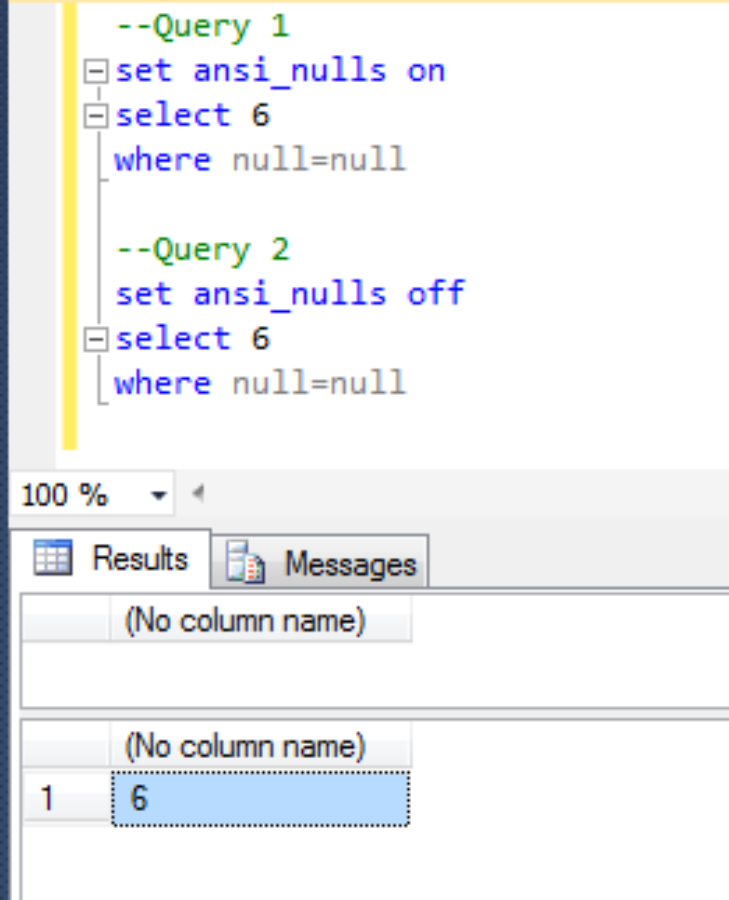
- ▶ NULL=NULL will never be true unless SET ANSI_NULLS is OFF

--Query 1

```
set ansi_nulls on  
select 6  
where null=null
```

--Query 2

```
set ansi_nulls off  
select 6  
where null=null
```



The screenshot shows a SQL Server Enterprise Manager interface. The top pane displays two queries. Query 1 is expanded, showing its execution plan and results. Query 2 is also expanded, showing its execution plan and results. The bottom pane shows the results of the queries. The first query, 'set ansi_nulls on', returns no results. The second query, 'set ansi_nulls off', returns a single row with the value 6.

```
--Query 1  
set ansi_nulls on  
select 6  
where null=null  
  
--Query 2  
set ansi_nulls off  
select 6  
where null=null
```

100 %

Results Messages

(No column name)

(No column name)
1 6

- ANSI_NULLS do not affect IS NULL condition

```
declare @t table(i int)
insert into @t
select 1 union all
select null

--Query 1
set ansi_nulls on
select i from @t
where i is null

--Query 2
set ansi_nulls off
select i from @t
where i is null
```

```
declare @t table(i int)
insert into @t
select 1 union all
select null

--Query 1
set ansi_nulls on
select i from @t
where i is null

--Query 2
set ansi_nulls off
select i from @t
where i is null
```

100 %

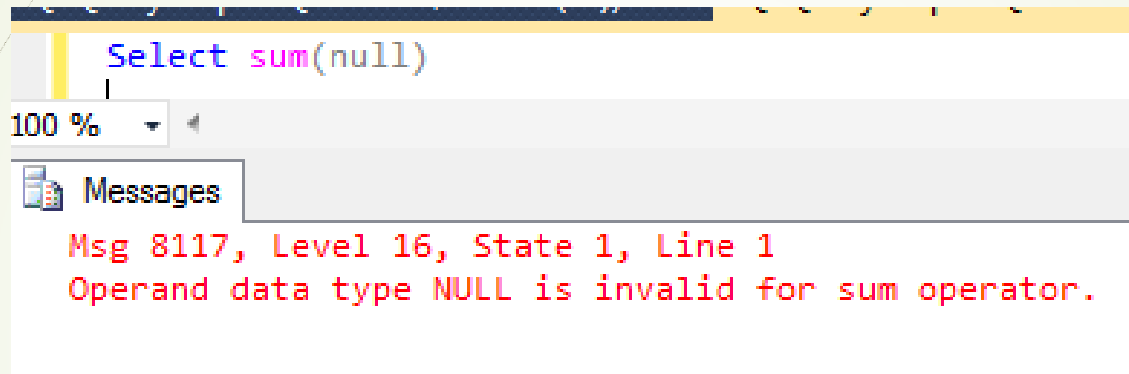
Results Messages

	i
1	NULL

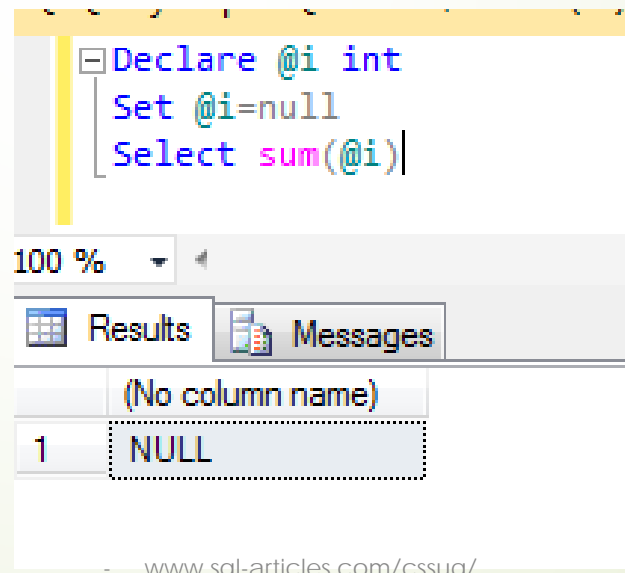
	i
1	NULL

► Typed NULL and non-Typed NULL

```
Select sum(null)
```

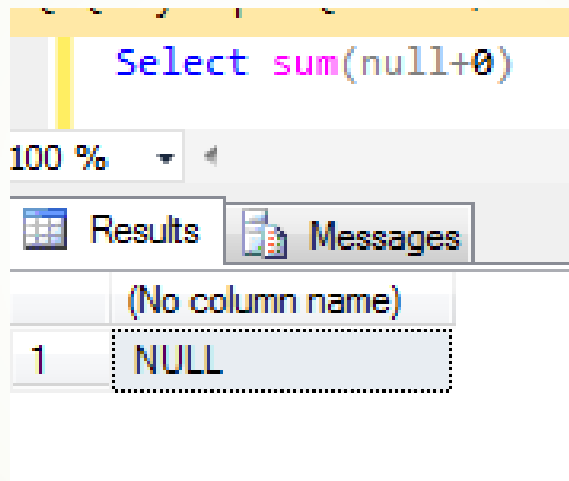


```
Declare @i int  
Set @i=null  
Select sum(@i)
```



- Implicit conversion

```
Select sum(null+0)
```




The screenshot shows a SQL Server Enterprise Manager window with the following content:

```
Select sum(null+0)
```

100 %

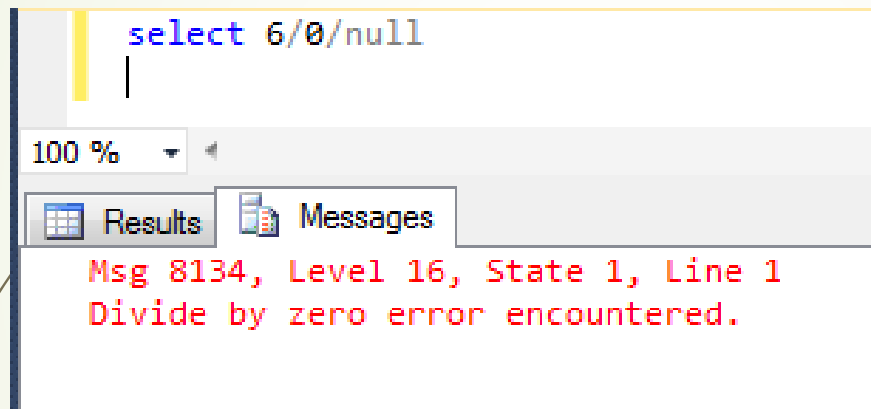
Results Messages

(No column name)
1 NULL

- 
- Column with UNIQUE constraint will allow only one NULL value in SQL Server
 - (But not true in other RDBMSs)

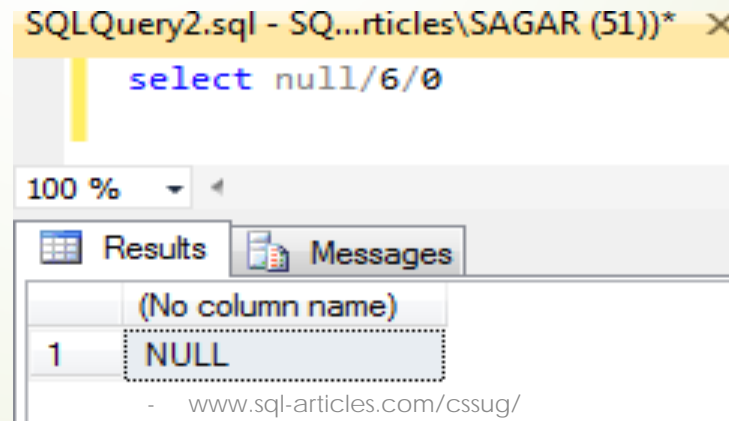
- NULL will make SQL Server to use short circuit logic in some cases

```
select 6/0/null
```




The screenshot shows a SQL query editor with the text `select 6/0/null`. Below the editor, the 'Messages' tab is active, displaying a red error message: `Msg 8134, Level 16, State 1, Line 1 Divide by zero error encountered.`


```
select null/6/0
```



The screenshot shows a SQL query editor with the text `select null/6/0`. Below the editor, the 'Results' tab is active, displaying a table with one row and one column. The column header is '(No column name)' and the row contains the value 'NULL'.

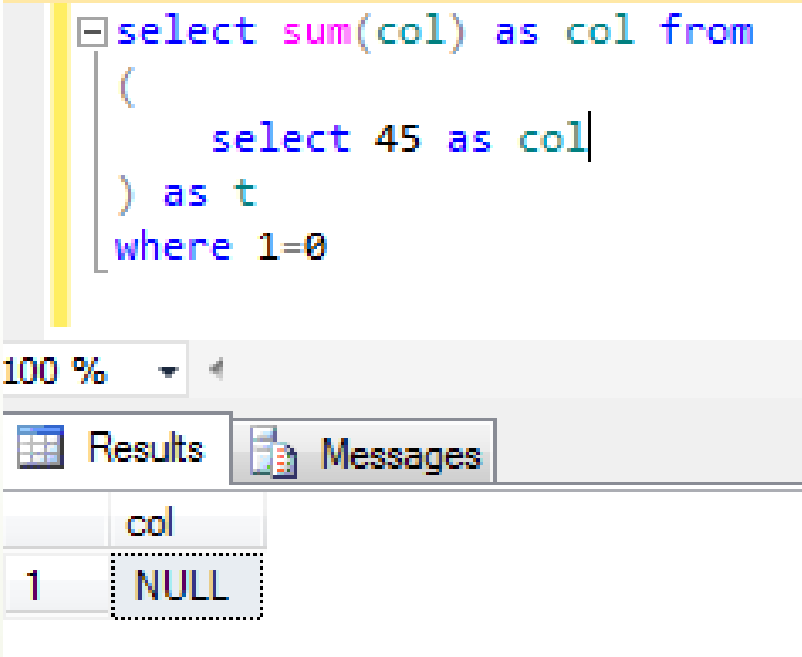
	(No column name)
1	NULL

- 
- ▶ The value NULL is not equal to string value 'NULL'

- 
- By default NULL values come first when a column is ordered in ascending order and come last when ordered in descending order

- If you don't use GROUP BY clause, the aggregate functions will always return single value (NULL) when the condition is false

```
select sum(col) as col from  
(  
  select 45 as col  
) as t  
where 1=0
```

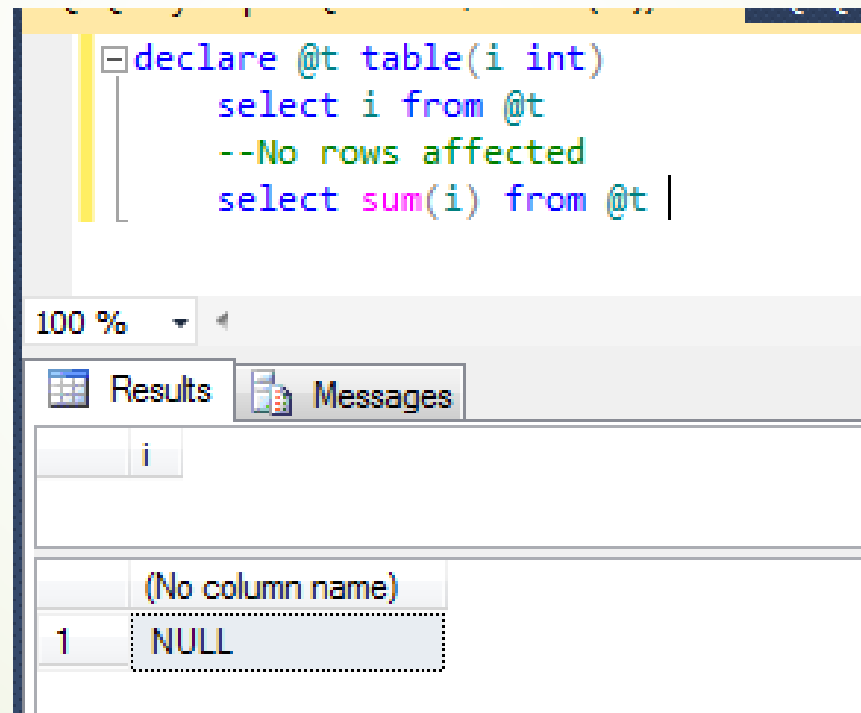


```
select sum(col) as col from  
(  
  select 45 as col  
) as t  
where 1=0
```

col
1

- Some aggregates return NULL even when no data in the table

```
declare @t table(i int)
select i from @t
--No rows affected
select sum(i) from @t
```



The screenshot shows a SQL query execution window with the following code and results:

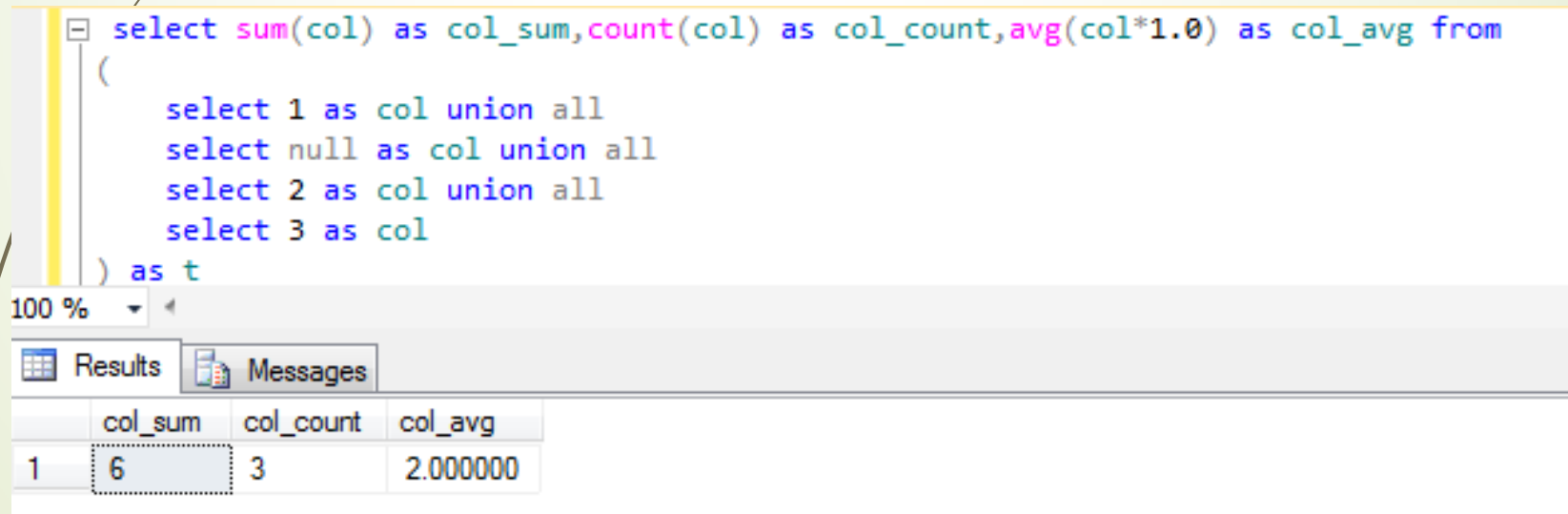
```
declare @t table(i int)
select i from @t
--No rows affected
select sum(i) from @t
```

The results pane shows a table with two rows:

	i
(No column name)	
1	NULL

NULL values are by default omitted in all aggregate functions

```
select sum(col) as col_sum, count(col)
as col_count, avg(col*1.0) as col_avg
from
(
select 1 as col union all
select null as col union all
select 2 as col union all
select 3 as col
) as t
```




The screenshot shows a SQL query editor with the following query:

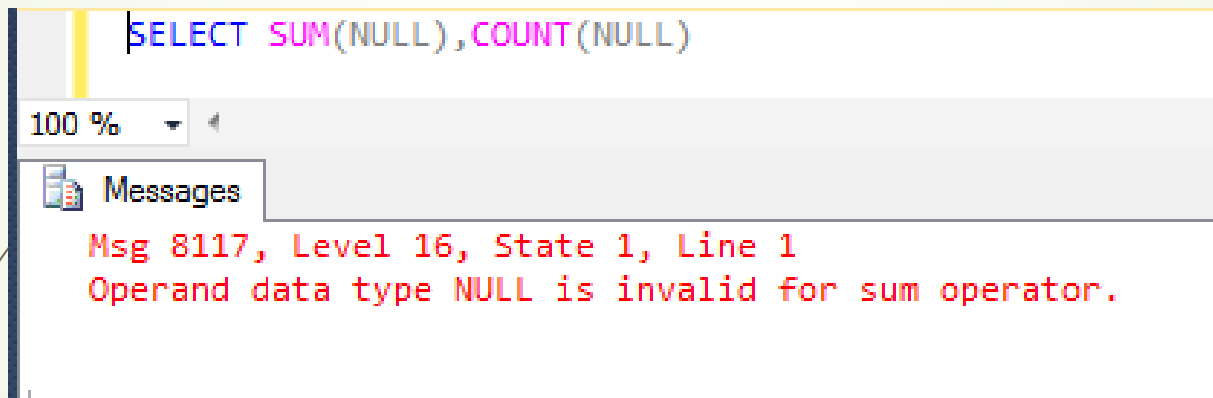
```
select sum(col) as col_sum, count(col) as col_count, avg(col*1.0) as col_avg from
(
select 1 as col union all
select null as col union all
select 2 as col union all
select 3 as col
) as t
```

Below the query editor, there is a 'Results' tab showing the following table:

	col_sum	col_count	col_avg
1	6	3	2.000000

- 
- Aggregate functions cannot be directly applied over NULL value

```
SELECT SUM(NULL),COUNT(NULL)
```



```
SELECT SUM(NULL),COUNT(NULL)
```

100 %

Messages

Msg 8117, Level 16, State 1, Line 1
Operand data type NULL is invalid for sum operator.

- 
- ▶ NULL is not an empty string

(Oracle treats them same)



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