Optional Arguments in WHERE Clause [duplicate]

This question already has an answer here:
[Stored Procedure with optional "WHERE" parameters](#) *6 answers*

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Lets suppose there is a stored procedure that has 3 params. Out of all the possibilities, I'm looking to achieve this with a single `WHERE` clause without getting out of control with using `() AND () OR ()` too much...

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Example:

```
    //Params
@CITY VARCHAR(100) = NULL,
@GENDER VARCHAR(100) = NULL,
@AGE VARCHAR(100) = NULL
```

I suppose you can do it using `IF BEGIN ... END` for each Variable if Exists, but that makes the code alot longer than desired..

This method below won't work because its way too long (there are about 10 different fields like this, but the example is only 3.) and i'm not sure if it even directly pulls up distinctive values...

```
SELECT NAME FROM TABLE
WHERE (
(CITY=@CITY AND GENDER=@GENDER AND AGE=@AGE)
OR (CITY=@CITY AND GENDER=@GENDER)
OR (GENDER=@GENDER AND AGE=@AGE)
OR (CITY=@CITY AND AGE=@AGE)
OR (CITY=@CITY)
OR (GENDER=@GENDER)
OR (AGE=@AGE)
)
```

Is there an even shorter more efficient way to do this?

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asked Apr 17 '12 at 5:32

Control Freak
8,007   20   72   132

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marked as duplicate by Tab Alleman [sql-server] Sep 5 '18 at 14:55

This question has been asked before and already has an answer. If those answers do not fully address your question, please ask a new question.

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1   Side-note: when defining a `VARCHAR()` - as a parameter to a stored proc or a local variable - should **always** have a **length** defined! Otherwise you might end up with `VARCHAR(1)` strings inadvertently... – marc_s Apr 17 '12 at 5:42

   Optional fields meaning if there is no or `NULL` value, then don't show it in the Where clause, is it possible? – Control Freak Apr 17 '12 at 5:49

2   Read this: Dynamic Search Conditions in T-SQL – Remus Rusanu Apr 17 '12 at 6:10

5 Answers

Alternatively to the `ISNULL` / `COALESCE` options, you can test the parameters for being null:

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```
SELECT NAME
FROM TABLE
WHERE
    (@City IS NULL OR City = @City)
AND
    (@Gender IS NULL OR Gender = @Gender)
AND
    (@Age IS NULL OR Age = @Age)
```

▼

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answered Apr 17 '12 at 5:56

cjk
40k   6   70   102

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1   @IlyaChernomordik: And flushing performance down the hill. – Neolisk Mar 25 '15 at 16:42

@IlyaChernomordik so what would be a better way of doing this? Thought of dynamic sql but it bring other problems like maintenance, code clearance, etc. There's no other better way? – Iúri dos Anjos Jul 17 '17 at 19:11

Not that I know of at least :) I would use dynamic SQL if it gets complex enough and begins affecting performance – Ilya Chernomordik Jul 18 '17 at 7:09

using OR and Dynamic sql Query lead us to performance hit, It seems the best bet is using IF ..ELSE or Case statement ,I think By this way two execution plan would be make and would be cached , I had such a question, please take a look at it for getting started . stackoverflow.com/questions/46386090/... – siamak Sep 24 '17 at 9:10 ✎

what about this?

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```
SELECT
    NAME
FROM TABLE
WHERE CITY = COALESCE(@CITY, CITY)
    AND GENDER = COALESCE(@GENDER, GENDER)
    AND AGE = COALESCE(@AGE, AGE)
```

answered Apr 17 '12 at 5:54

silly
6,798   2   17   36

2   Beautiful! Hopefully, SQL Server is able to optimize away the conditions if null variables are encountered. Would be interesting to test. – l33t Sep 10 '16 at 19:23

Try something like this:

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```
SELECT NAME
FROM TABLE
WHERE
```

OR:

```
SELECT NAME
FROM TABLE
WHERE
    (City = @City OR @City IS NULL) AND
    (Gender = @Gender OR @Gender IS NULL) AND
    (Age = @Age OR @Age IS NULL)
```

answered Apr 17 '12 at 5:53

Greg
5,356   17   52   99

i think your first example may cut it, let me check it out.. brb. –   Control Freak   Apr 17 '12 at 6:05

In regards to the first option....does NULL equal NULL? – Myles J Apr 3 '13 at 12:39

`Select * From Table Where NULL IS NULL` will return all rows. That is ok in this context because it means that you do not want to filter by the argument if you pass it a `NULL` value. – Greg Apr 3 '13 at 13:04 ✎

Yes but Select * From Table Where NULL = NULL will not include the rows with null column values. Test it out on a table that has a nullable column containing NULLs. e.g:SELECT * FROM mytable WHERE mycolumn = IsNull(null, mycolumn) – Myles J Apr 3 '13 at 13:15

That *City = IsNull(@City, City)* format never occurred to me before. Nice and clean looking. – Justin Dec 8 '17 at 9:41

▲

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▼

```
SELECT NAME
FROM TABLE
WHERE
    City = case when isnull(@City ,'') = '' then City
                            else @City end
AND
    Gender = case when isnull(@Gender ,'') = '' then Gender
                            else @Gender end
AND
    Age = case when isnull(@Age ,0) = 0 then Age
                            else @Age end
```

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I doubt that the City=City condition and in general Column =Column Condition is an ineffective condition , for example null = null could lead us to UNKNOWN and at the other hand if our column would be Not null , we end up with a full scan table for column = column condition . – siamak Sep 24 '17 at 9:28

Possibly this:

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```
create procedure myProc
    --Params
@CITY VARCHAR(100) = NULL,
@GENDER VARCHAR(100) = NULL,
@AGE VARCHAR(100) = NULL
as

SELECT NAME FROM [TABLE]
WHERE ISNULL(CITY,'')=ISNULL(@CITY,ISNULL(CITY,''))
AND ISNULL(GENDER,'')=ISNULL(@GENDER,ISNULL(GENDER,''))
AND ISNULL(AGE,'')=ISNULL(@AGE,ISNULL(AGE,''))
go
```

Assuming the columns in the WHERE clause are nullable, using ISNULL to avoid null comparison.

edited Apr 17 '12 at 5:54   answered Apr 17 '12 at 5:45

John Dewey
5,940   3   18   25

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uggghhh.. i wanted to avoid doing it that way.. anything like 'IsNull'? –   Control Freak   Apr 17 '12 at 5:48

You could try this option – John Dewey Apr 17 '12 at 5:55

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