Subtracting Two Dates

https://advancedsqlpuzzles.com

Here is a trick I picked up from the book T-SQL Querying.

Anyone who has used the DATEDIFF has probably been frustrated by its limitations.

To solve this problem, I have created two functions to subtract dates. Same logic, one returns a table, the other returns a varchar.

Passing two dates to either of the functions return the years, days, months, minutes, seconds, and nano seconds between the two dates.

To view the functions, you will need to link to my GitHub repository below.
AdvancedSQLPuzzles/Database Tips and Tricks/Subtracting Two Dates

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To reiterate, there are two functions:

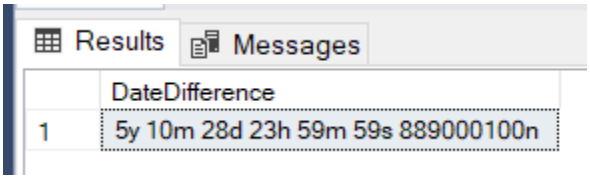
- one is a table valued function
- the other is a scalar valued function (that returns the output in varchar format).

Here are some quick examples of their usage. Note the scalar valued function is used in the SELECT statement, and the table valued function is used in the FROM statement.

Scalar Valued Function

```
SELECT FnDateDiffPartsChar('20170518 00:00:00.0000001','20110619
00:00:00.1110000') AS DateDifference;
```

Returns the following:

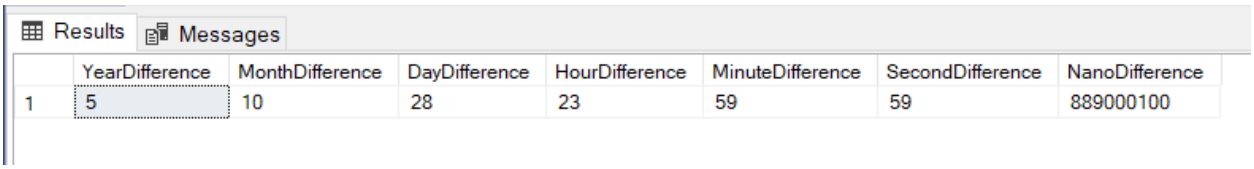


Note, you may wish to remove nanoseconds from the output. You can also modify the function to mimic the CONVERT function and pass a parameter to return a certain output style.

Table Valued Function.

```
SELECT *
FROM   FnDateDiffPartsTable('20170518 00:00:00.0000001','20110619
00:00:00.1110000');
```

Returns the following:



Results | Messages

	YearDifference	MonthDifference	DayDifference	HourDifference	MinuteDifference	SecondDifference	NanoDifference
1	5	10	28	23	59	59	889000100

When using a table valued function, use the CROSS APPLY to join to the function. A quick internet search will help fill any needed gaps in understanding the CROSS APPLY (and the related OUTER APPLY) functionality.

Here is an example of using both the table and the scalar valued functions together in one query while joining to a table.

```
#Create a table with two dates
SELECT  CONVERT(DATETIME, '2017-08-25 22:56:43') AS StartDate,
        CONVERT(DATETIME, '2020-12-01 02:11:01') AS EndDate
INTO    #ExampleDateTimes;

SELECT  *, dbo.FnDateDiffPartsChar(a.StartDate,a.EndDate) AS DateDifference
FROM    #ExampleDateTimes a CROSS APPLY
        FnDateDiffPartsTable(a.StartDate,a.EndDate)
```

Happy coding!