

← Takaisin välilehdelle

Tee: Käy oppitunti läpi loppuun asti

Tasks

Calculated measures are very different than calculated columns. Calculated measures are not static, and operate within the current filter context of a report; therefore, calculated measures are dynamic and ever-changing as the filter context changes.

Implicit aggregations occur automatically on columns with numeric data types. There are some advantages to this default behavior—for example, if you simply drag the *Sales Amount* column into a report, the value will be automatically aggregated and you won't have to spend time creating a measure.

An explicit measure allows a user to create a calculated measure, and there are several benefits to using explicit measures:

- Measures can be built from other measures
- Reusing measures makes the code easier to read
- They encapsulate code, making logic changes less time-consuming
- They centrally define number formatting, creating consistency

Calculated measures can do the following:

- They can be assigned to any table and further assigned to folders within that table
- They interact with all the relationships in the data model automatically, unlike calculated columns
- They are not materialized in a column, and therefore cannot be validated in the Data View

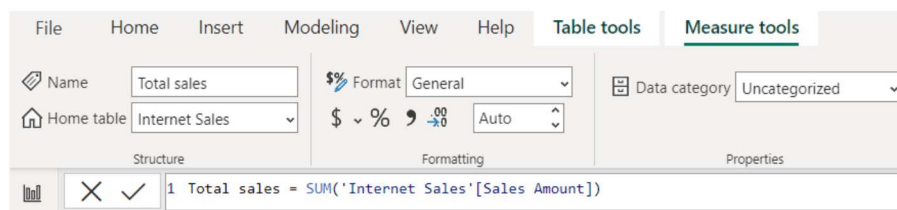
You are still working with *Lesson 5 – Leveraging DAX.pbix*.

Task 1 - Creating Total Sales and Total Cost calculation

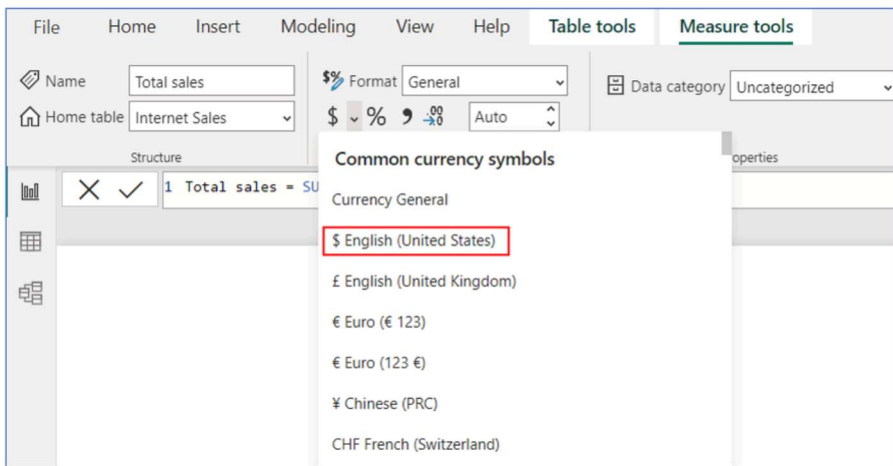
Step 1: Select the *Internet Sales* table and then click on **New measure** from the *Table tools* ribbon.

Step 2: Insert the following code in the formula bar:

```
Total Sales = SUM('Internet Sales'[Sales Amount])
```



Step 3: Navigate to the **Measure tools** ribbon and change the formatting to *\$ English (United States)*:



You just created your first calculated measure! The total sales calculation is the sum of the sales amount, however, another way to read that calculation is the sum of the sales amount within the current filter context.

Step 4: Create the **Total Cost** measure. Once again, this is a simple SUM operation. Select the *Internet Sales* table, then click on **New measure** from the *Table tools* ribbon and type in the following DAX formula:

```
Total Cost = SUM('Internet Sales'[Total Product Cost])
```

Remember to apply formatting to this new measure; it is easy to miss this step when learning to create measures. The formatting should be *\$ English (United States)*.

Task 2 - Creating Profit and Profit Margin calculation

Step 1: Select the *Internet Sales* table, then click on **New measure** from the *Table tools* ribbon and type in the following DAX formula:

```
Profit = SUM('Internet Sales'[Sales Amount]) - SUM('Internet Sales'[Total Product Cost])
```

This calculation would be technically correct; however, it is not the most efficient way to write code. In fact, another benefit of building explicit measures is that they can be built using measures you already created. [Reusing existing calculated measures](#) will make the code more readable and make code changes easier and less time-consuming. Imagine for a moment that you discovered that the *Total Sales* calculation is not correct. If you encapsulated all this logic in a single measure and reused that measure in your other measures, then you need only change the original measure, and any updates will be pushed to all other measure references.

Step 2: Select the *Internet Sales* table and then click on **New measure** from the *Table tools* ribbon. Type the following into the formula bar—remember to apply formatting afterward:

```
Profit = [Total Sales] - [Total Cost]
```

This calculation returns the same results as the original attempt. The difference is that now you are reusing measures that were already created in the data model. You may have noticed that I referenced the name of the measure without the table name. When referencing explicit measures in your code, it is considered a best practice to exclude the table name.

Step 3: Now it's time to create the *Profit Margin* calculation (the profit margin is simply (profit/sales). For this measure, you are going to use the DIVIDE function. The DIVIDE function is recommended over the divide operator (/) because the DIVIDE function automatically handles divide-by-zero occurrences. In the case of divide-by-zero occurrences, the DIVIDE function returns blank.

Select the *Internet Sales* table and then click on **New measure** from the *Table tools* ribbon. Type the following into the formula bar:

```
Profit Margin = DIVIDE([Profit], [Total Sales])
```

Step 4: Next, set the formatting as a percentage. From the Modeling ribbon, click on the % icon.

You may have noticed that the DIVIDE function accepted three parameters and you only provided two. The third parameter allows you to set an **alternative result** for divide-by-zero occurrences. This alternate result is **optional**. Optional parameters are denoted by square brackets on both sides of the parameter. These optional parameters are prevalent in many DAX functions. .

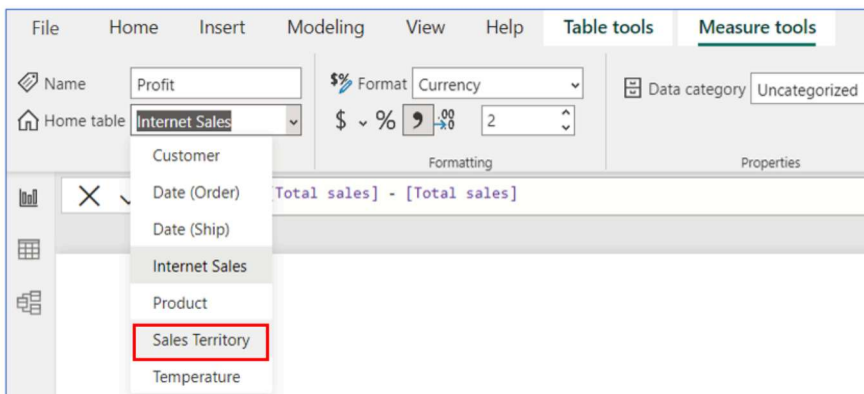
Task 3 - Assignment of calculated measures

Unlike calculated columns, measures do not need to be assigned to a specific table to function properly. Because of this, it is very easy and common to forget to make sure the proper table is selected prior to creating a measure. This results in measures being assigned to random tables during development.

Fortunately, you do not need to delete the measure and recreate it in the proper table; instead, you can simply move measures from one table to another by changing the *Home* table.

Step 1: Move calculated measure **Profit** from *Internet Sales* to *Sales Territory*.

1. Select measure **Profit**.
2. Find the *Measure tools* ribbon.
3. Click on the **Home table** dropdown and select the correct *Sales Territory*.



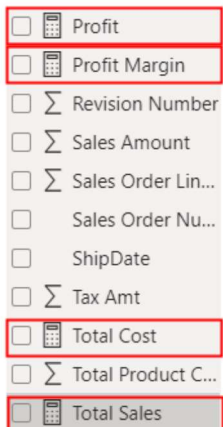
Step 2. Move calculated measure **Profit** back to *Internet Sales*.

Note! Calculated measures can be assigned to any table in your data model and will still function properly. However, measures should be assigned to the table where it logically makes the most sense. This way, the measure is easy to find and utilize in visualizations and reports.

Task 4 - Display folders

In Power BI, columns and measures can be assigned to folders. This is extremely useful for organizing related measures and improving the overall usability of the data model. By properly leveraging display folders, measures will be easier to find and similar measures, like time intelligence calculations, can be grouped in their own folder.

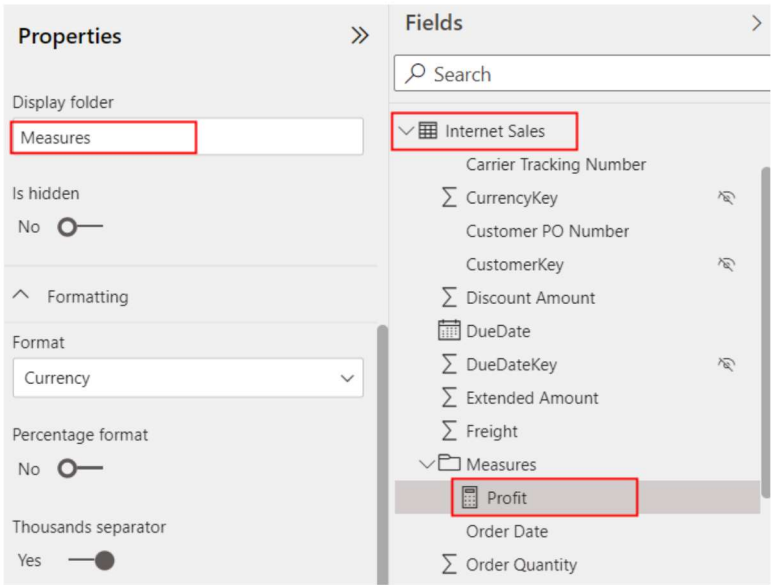
As you can see below, the newly created measures are mixed in with the existing columns:



Step 1: Select *Model View* from the left navigation pane.

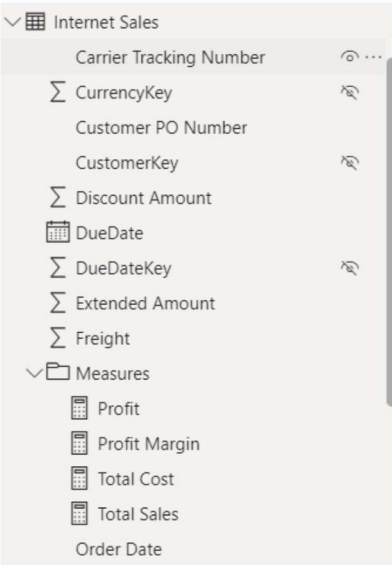
Step 2: Expand the *Internet Sales* table and select the **Profit** measure.

Step 3: In the *Properties* pane, find the *Display folder* property and type **Measures**:



Step 4: All of your measures can be moved to a display folder at one time: Multi-select measures *Profit Margin*, *Total Cost*, and *Total Sales* to be moved by holding down the *Ctrl* key while selecting each measure.

Step 5: and then enter the folder name **Measures**.



End-of-Exercise

Olet suorittanut 0 % oppitunnista

◀ Exercise 11 - Building calculated columns

Siirry...

Olet kirjautunut nimellä Janne Bragge. (Kirjaudu ulos)

PowerBI

Suomi (fi)

Deutsch (de)

English (en)

Français (fr)

Suomi (fi)

Svenska (sv)

Hanki mobiilisovellus