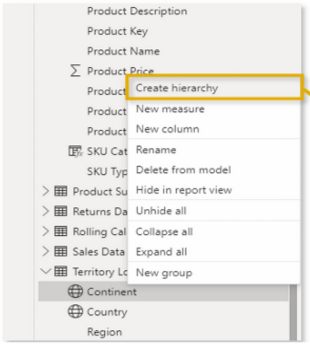
Power BI - Advance Modelling + Introduction to DAX - Lecture 14

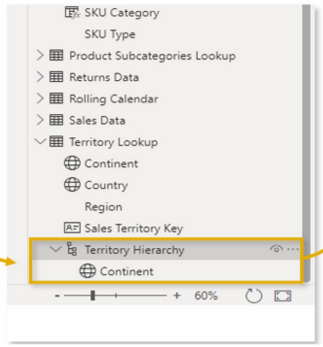
HIERARCHIES

Hierarchies are groups of columns that reflect multiple levels of granularity

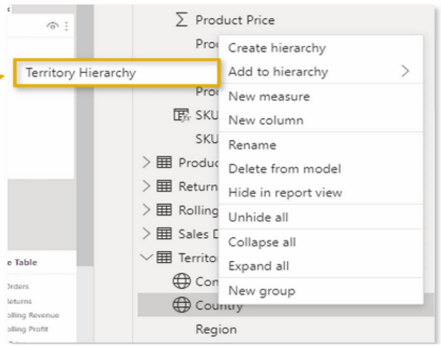
- For example, a Geography hierarchy might include Country, State and City fields
- Hierarchies are treated as a single item in tables and reports, allowing users to "drill up" and "drill down" through each level



In the Data pane, right-click a field and select Create hierarchy



This hierarchy contains "Continent", and is named "Territory Hierarchy"



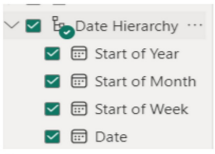
Right-click another field (like "Country") and select Add to Hierarchy (or drag it in!)

ASSIGNMENT: HIERARCHIES

1. Create a new hierarchy based on the Start of Year field, and name it "Date Hierarchy".

2. Right-click or drag to add fields until your hierarchy contains the following (in this order):
   - Start of Year
   - Start of Month
   - Start of Week
   - Date

3. Add your new hierarchy to the matrix visual (on rows) and practice drilling up and down between each level of granularity



Start of Year	Sum of OrderQuantity	Sum of ReturnQuantity
01-01-2020	**2630**	**86**
01-01-2020	184	4
01-02-2020	165	4
01-03-2020	198	9
01-04-2020	204	14
01-05-2020	206	11
01-06-2020	212	4
01-07-2020	247	3
01-08-2020	278	6
01-09-2020	196	2
01-10-2020	223	11
01-11-2020	191	5
01-12-2020	326	13
01-01-2021	**36230**	**770**
01-01-2021	242	8
01-02-2021	267	8
01-03-2021	266	8
Total	**84174**	**1828**

DATA MODEL BEST PRACTICES

Focus on building a normalized model from the start

- Leverage relationships and make sure that each table serves a clear, distinct purpose

Organize dimension tables above data tables in your model

- This serves as a visual reminder that filters always flow "downstream"

Avoid complex relationships unless absolutely necessary

- Aim to use 1-to-many table relationships and one-way filters whenever possible

Hide fields from report view to prevent invalid filter context

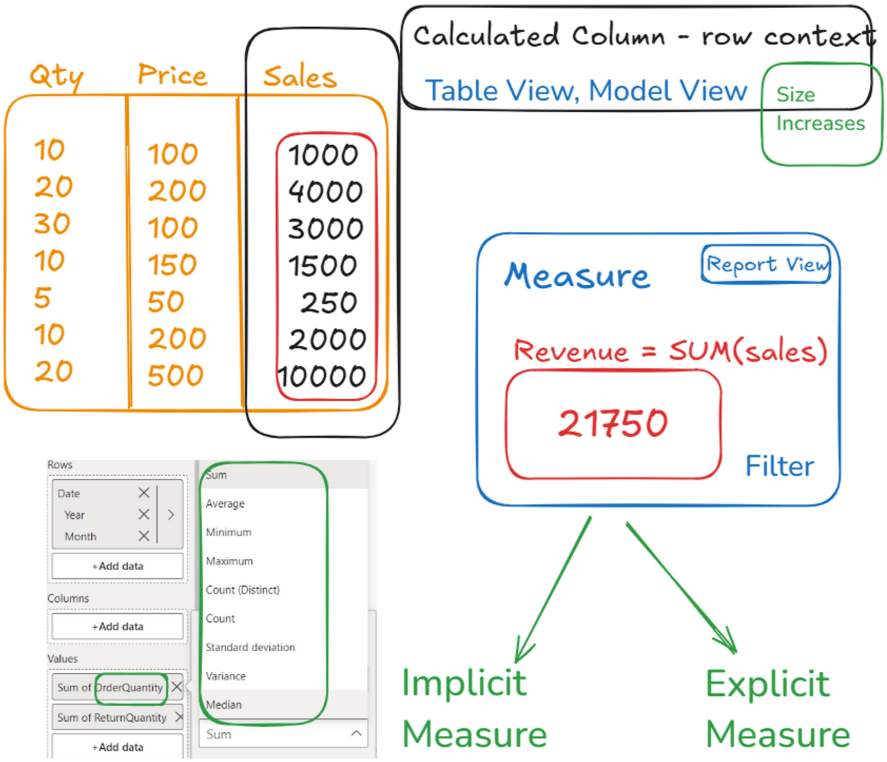
- This forces report users to filter using primary keys from dimension tables

CALCULATED FIELDS WITH DAX

In this section we'll use Data Analysis Expressions (DAX) to add calculated columns & measures to our model, and introduce topics like row & filter context, iterators and more

TOPICS WE'LL COVER:

1. DAX
2. Row & Filter Context
3. Common Functions
4. Iterators
5. Columns & Measures
6. DAX Syntax
7. Calculate
8. Time Intelligence



GOALS FOR THIS SECTION:

- Introduce DAX fundamentals and learn when to use calculated columns and measures.
- Understand the difference between row context and filter context, and how they impact DAX calculations.
- Learn DAX formula syntax, basic operators and common function categories (math, logical, text, date/time, filter, etc.).
- Explore nested functions, and more complex topics like iterators and time intelligence patterns.

$$2x + 3y = 20$$
$$2x - 3y = 10$$
$$4x = 30$$
$$x = 7.5$$