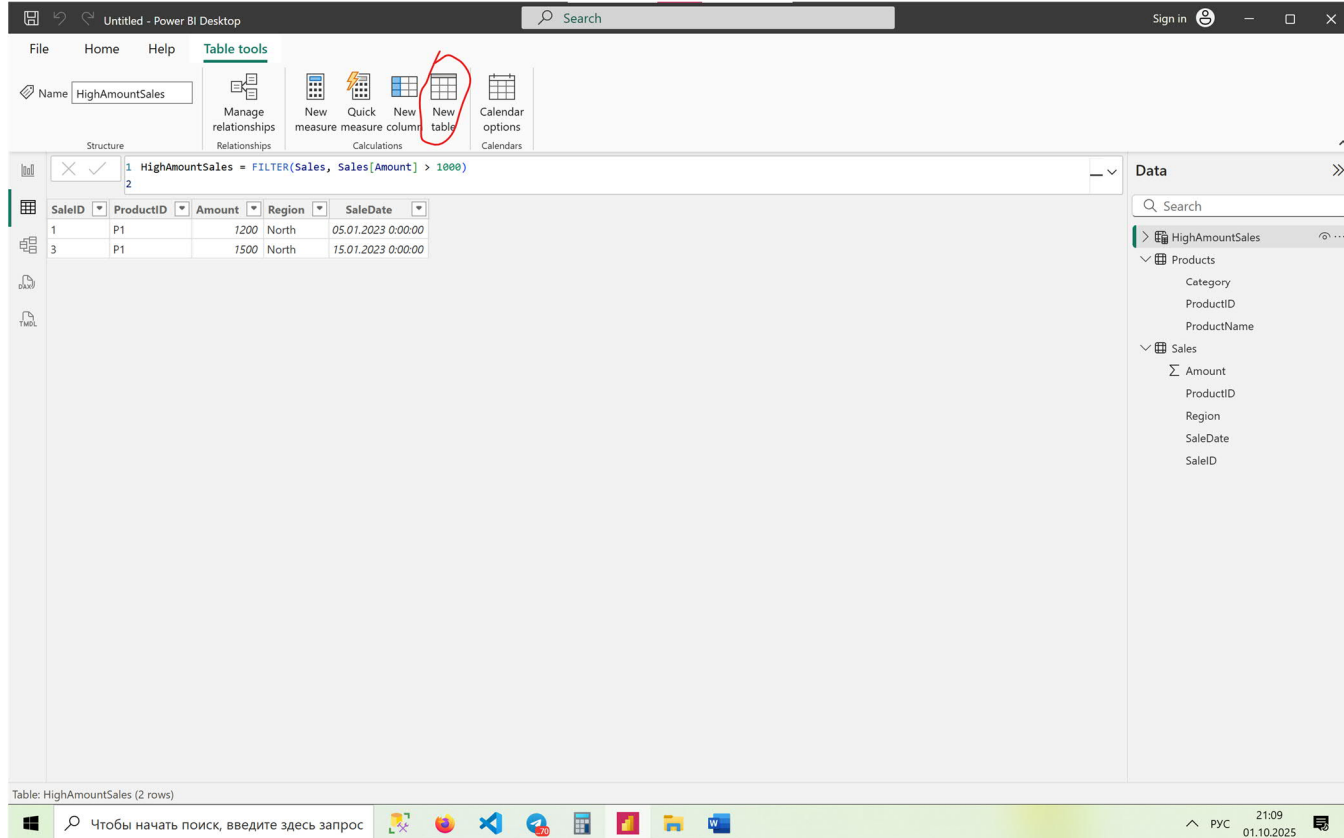


Lesson-10. Advanced Filtering in DAX

1. What does `FILTER(Sales, Sales[Amount] > 1000)` return?

`FILTER` returns a **table** containing only rows that meet the condition.

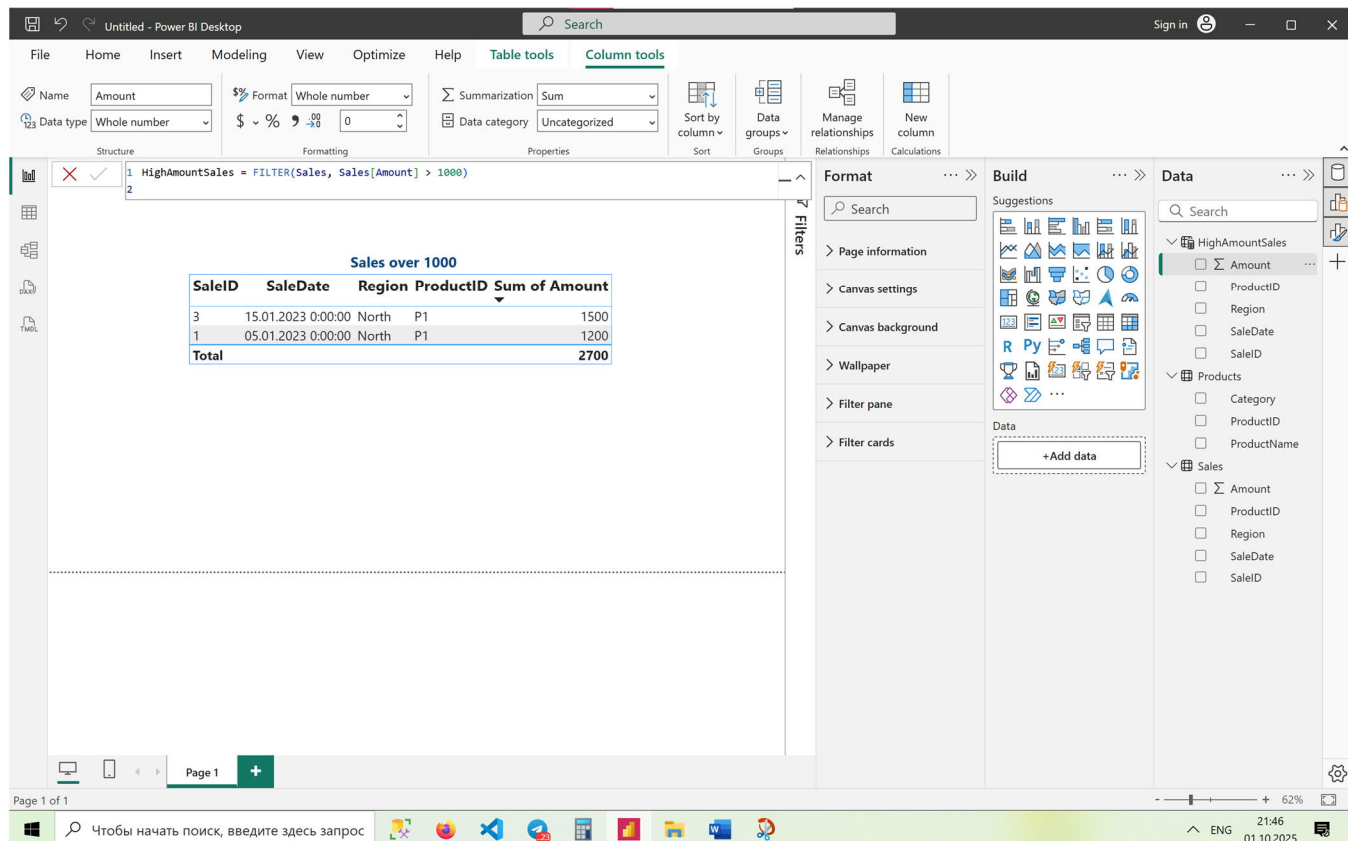


✓ Only rows where `Amount > 1000`.

2. High Sales measure summing `Amount > 1000` using `FILTER`

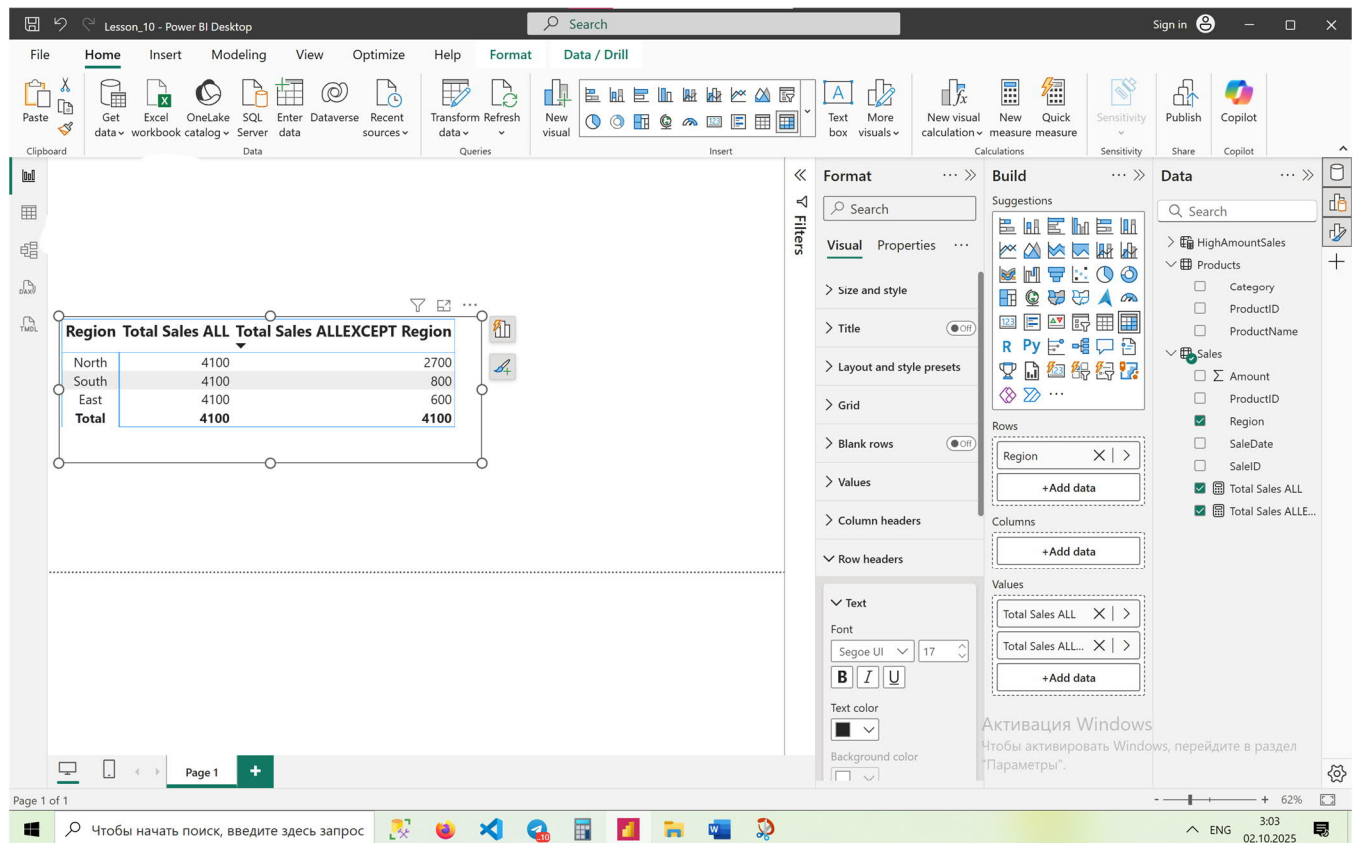
High Sales =

```
CALCULATE(  
    SUM(Sales[Amount]),  
    FILTER(Sales, Sales[Amount] > 1000)  
)
```



3. How does ALLEXCEPT(Sales, Sales[Region]) differ from ALL(Sales)?

- ALL(Sales) → removes **all filters** on the Sales table.
- ALLEXCEPT(Sales, Sales[Region]) → removes all filters **except** the Region filter.
Example: if filter Region = North is applied:
- ALL(Sales) → includes all regions.
- ALLEXCEPT(Sales, Sales[Region]) → keeps only North, ignores other column filters.



4. Use SWITCH to categorize Amount:

"Medium" if 500–1000

"High" if > 1000 ``

Lesson_10 - Power BI Desktop

File Home Help Table tools Column tools

Name: Amount Category Format: Text Summarization: Don't summarize Data category: Uncategorized

Structure: 1. Amount Category =
2. SWITCH(
3. TRUE(),
4. Sales[Amount] < 500, "Low",
5. Sales[Amount] >= 500 && Sales[Amount] <= 1000, "Medium",
6. Sales[Amount] > 1000, "High"
7.)
8.

SaleID	ProductID	Amount	Region	SaleDate	Amount Category
1	P1	1200	North	5 января 2023 г.	High
2	P2	800	South	10 января 2023 г.	Medium
3	P1	1500	North	15 января 2023 г.	High
4	P2	600	East	20 января 2023 г.	Medium

Table: Sales (4 rows) Column: Amount Category (2 distinct values)

Активация Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help

Clipboard: Paste Get data Excel OneLake SQL Server Enter data Datasource Recent sources Transform Refresh data Queries New visual

Build: Sum of Amount by Amount Category

Amount Category	Sum of Amount
High	2700
Medium	1400

Filters: Suggestions

Data: +Add data

Активация Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

5. What is the purpose of ALLSELECTED?

It removes filters applied within a visual but still respects slicers and external filters. It is useful for percentage-of-total calculations where you want to compare a selection against the total visible context.

6. Write a measure Regional Sales % showing each sale's contribution to its region's total (use ALLEXCEPT).

```
Regional Sales % =  
DIVIDE(  
    SUM(Sales[Amount]),  
    CALCULATE(  
        SUM(Sales[Amount]),  
        ALLEXCEPT(Sales, Sales[Region])  
    )  
)
```

The screenshot shows the Power BI Desktop interface. The 'Measure tools' ribbon is active, displaying the DAX formula for 'Regional Sales %'. The formula is as follows:

```
1 Regional Sales % =  
2 DIVIDE(  
3     SUM(Sales[Amount]),  
4     CALCULATE(  
5         SUM(Sales[Amount]),  
6         ALLEXCEPT(Sales, Sales[Region])  
7     )  
8 )  
9
```

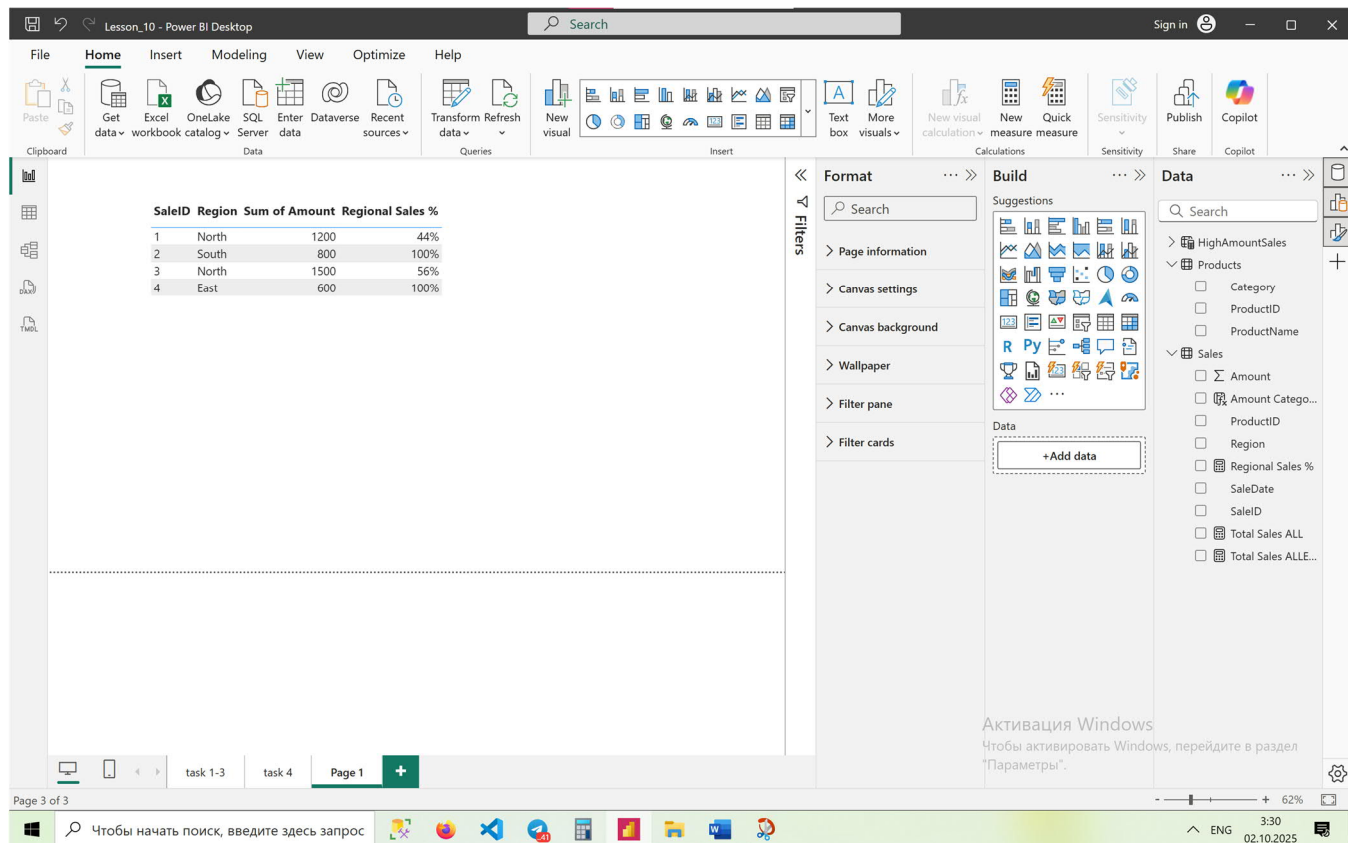
Below the formula, a data table is displayed with the following columns: SaleID, ProductID, Amount, Region, SaleDate, and Amount Category. The table contains 4 rows of data:

SaleID	ProductID	Amount	Region	SaleDate	Amount Category
1	P1	1200	North	5 января 2023 г.	High
2	P2	800	South	10 января 2023 г.	Medium
3	P1	1500	North	15 января 2023 г.	High
4	P2	600	East	20 января 2023 г.	Medium

The right-hand pane shows the 'Data' view with a search bar and a list of fields. The 'Sales' table is expanded, showing fields: Category, ProductID, ProductName, Sales, Amount, Amount Category, Measure, ProductID, Region, SaleDate, SaleID, Total Sales ALL, and Total Sales ALLEXCEPT Region. The 'Measure' field is selected.

At the bottom of the window, a Windows activation watermark is visible: 'Активация Windows. Чтобы активировать Windows, перейдите в раздел "Параметры".'

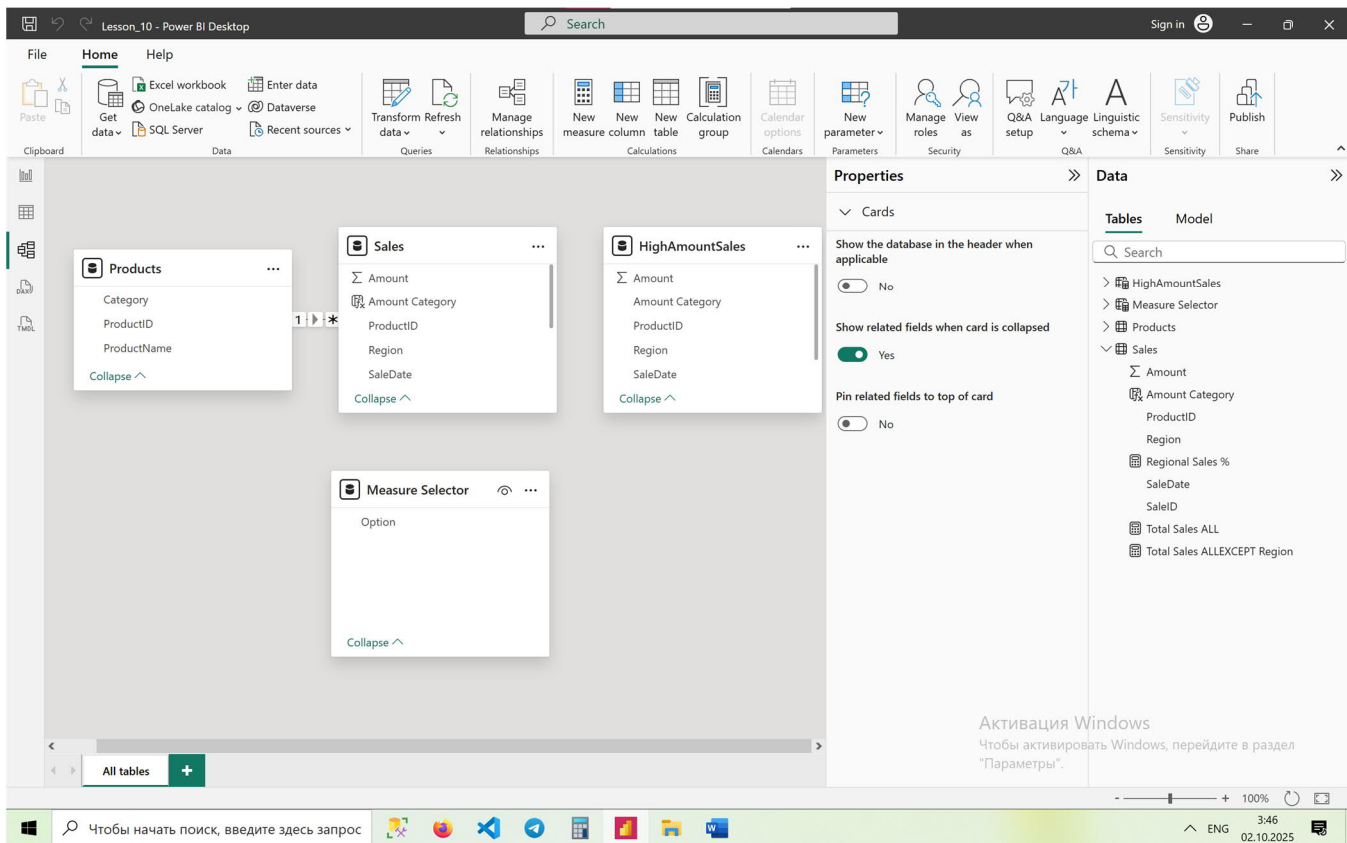
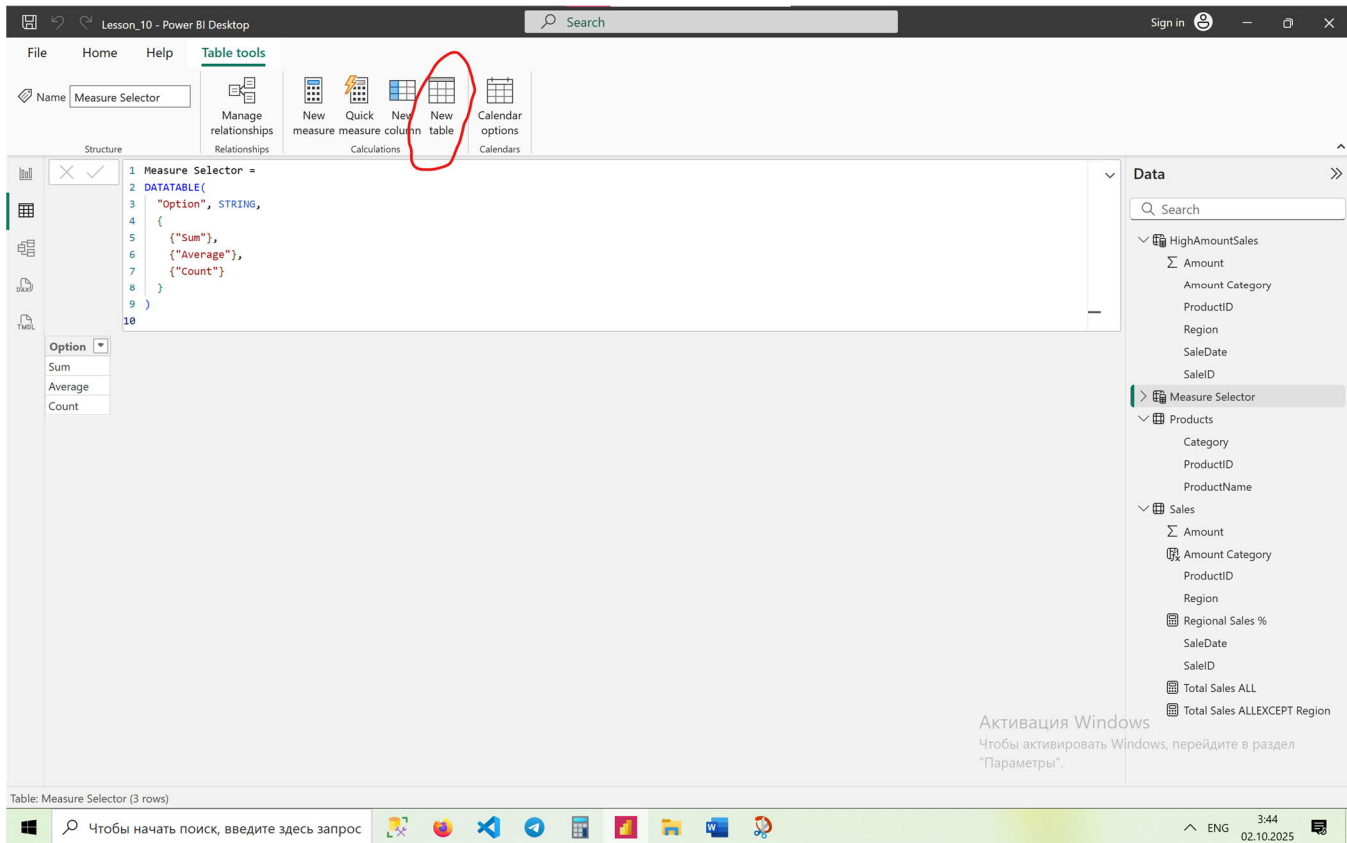
The status bar at the bottom indicates: 'Table: Sales (4 rows) Column: Measure (0 distinct values)'.



7. Create a dynamic measure using SWITCH to toggle between SUM, AVERAGE, and COUNT of Amount.

1.

```
Measure Selector =
DATATABLE(
  "Option", STRING,
  {
    {"Sum"},
    {"Average"},
    {"Count"}
  }
)
```



Disconnected

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help Format Data / Drill Table tools Measure tools

Name: Dynamic Amount ... Format: General Data category: Uncategorized

Home table: Measure Selector

Structure

```
1 Dynamic Amount Measure =  
2 VAR Sel = SELECTEDVALUE('Measure Selector'[Option], "Sum")  
3 RETURN  
4 SWITCH(  
5     Sel,  
6     "Sum", SUM('Sales'[Amount]),  
7     "Average", AVERAGE('Sales'[Amount]),  
8     "Count", COUNT('Sales'[Amount]),  
9     SUM('Sales'[Amount]) -- fallback  
10 )  
11
```

Format

Visual Properties

Size and style

Title

Slicer settings

Options

Style: Vertical list

Selection: Single select (On)

Slicer header: On

Values

Build

Suggestions

Field: Option

+Add data

Data

Search

HighAmountSales

Measure Selector

Dynamic Amount...

Option

Category

ProductID

ProductName

Sales

Amount

Amount Catego...

ProductID

Region

Regional Sales %

SaleDate

SaleID

Total Sales ALL

Total Sales ALLE...

Page 4 of 4

task 1-3 task 4 task 6 Task 7 +

Чтобы начать поиск, введите здесь запрос

ENG 3:53 02.10.2025

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help Format Data / Drill

Apply drill down filters to: Entire page

Interactions

Bring forward Send backward Selection Align Group

Option

Average

Count

Sum

Format

Visual Properties

Size and style

Title

Slicer settings

Options

Style: Vertical list

Selection: Single select (On)

Slicer header: On

Values

Build

Suggestions

Field: Option

+Add data

Data

Search

HighAmountSales

Measure Selector

Dynamic Amount...

Option

Category

ProductID

ProductName

Sales

Amount

Amount Catego...

ProductID

Region

Regional Sales %

SaleDate

SaleID

Total Sales ALL

Total Sales ALLE...

Page 4 of 4

task 1-3 task 4 task 6 Task 7 +

Чтобы начать поиск, введите здесь запрос

ENG 3:53 02.10.2025

Lesson_10 - Power BI Desktop

Search

File Home Insert Modeling View Optimize Help

Clipboard Get data Excel OneLake SQL Server Enter data Datasource Recent sources Transform Refresh data Queries New visual

Text box More visuals New visual calculation New measure Quick measure Sensitivity Publish Copilot

Option
● Average
○ Count
○ Sum

Dynamic Amount Measure
1 025,00

Format
Filters
Page information
Canvas settings
Canvas background
Wallpaper
Filter pane
Filter cards

Build
Suggestions
Data
+Add data

Data
Search
HighAmountSales
Measure Selector
Dynamic Amou...
Option
Products
Category
ProductID
ProductName
Sales
Amount
Amount Catego...
ProductID
Region
Regional Sales %
SaleDate
SaleID
Total Sales ALL
Total Sales ALLE...

Page 4 of 4

task 1-3 task 4 task 6 Task 7 +

Чтобы начать поиск, введите здесь запрос

ENG 3:58 02.10.2025

Lesson_10 - Power BI Desktop

Search

File Home Insert Modeling View Optimize Help Format Data / Drill

Clipboard Get data Excel OneLake SQL Server Enter data Datasource Recent sources Transform Refresh data Queries New visual

Text box More visuals New visual calculation New measure Quick measure Sensitivity Publish Copilot

Option
○ Average
● Count
○ Sum

Dynamic Amount Measure
4,00

Format
Filters
Visual Properties
Size and style
Title
Slicer settings
Slicer header
Text
Title text
Option
Font
DIN 18
Font color
Show summary
Border
Background

Build
Suggestions
Field
Option
+Add data

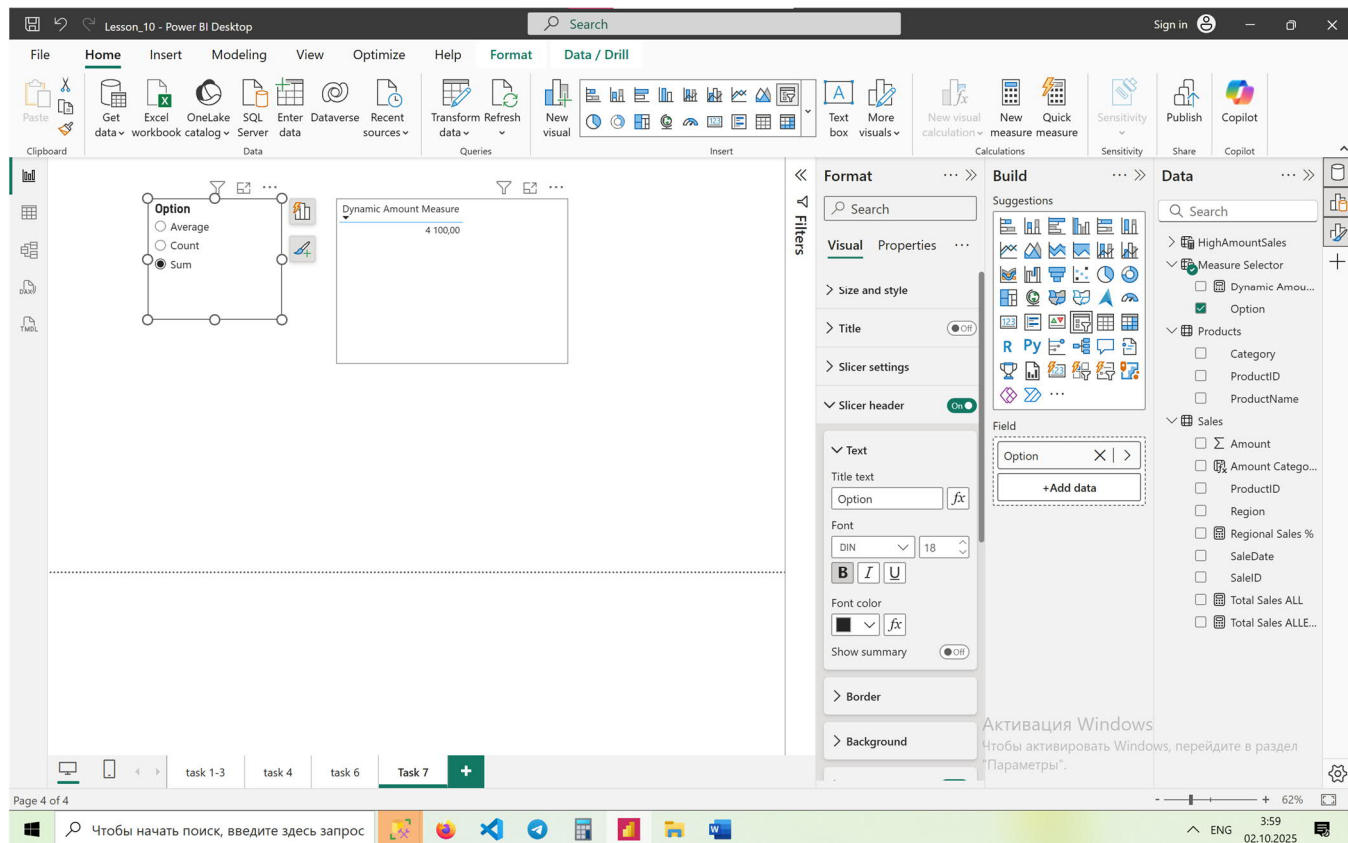
Data
Search
HighAmountSales
Measure Selector
Dynamic Amou...
Option
Products
Category
ProductID
ProductName
Sales
Amount
Amount Catego...
ProductID
Region
Regional Sales %
SaleDate
SaleID
Total Sales ALL
Total Sales ALLE...

Page 4 of 4

task 1-3 task 4 task 6 Task 7 +

Чтобы начать поиск, введите здесь запрос

ENG 3:58 02.10.2025

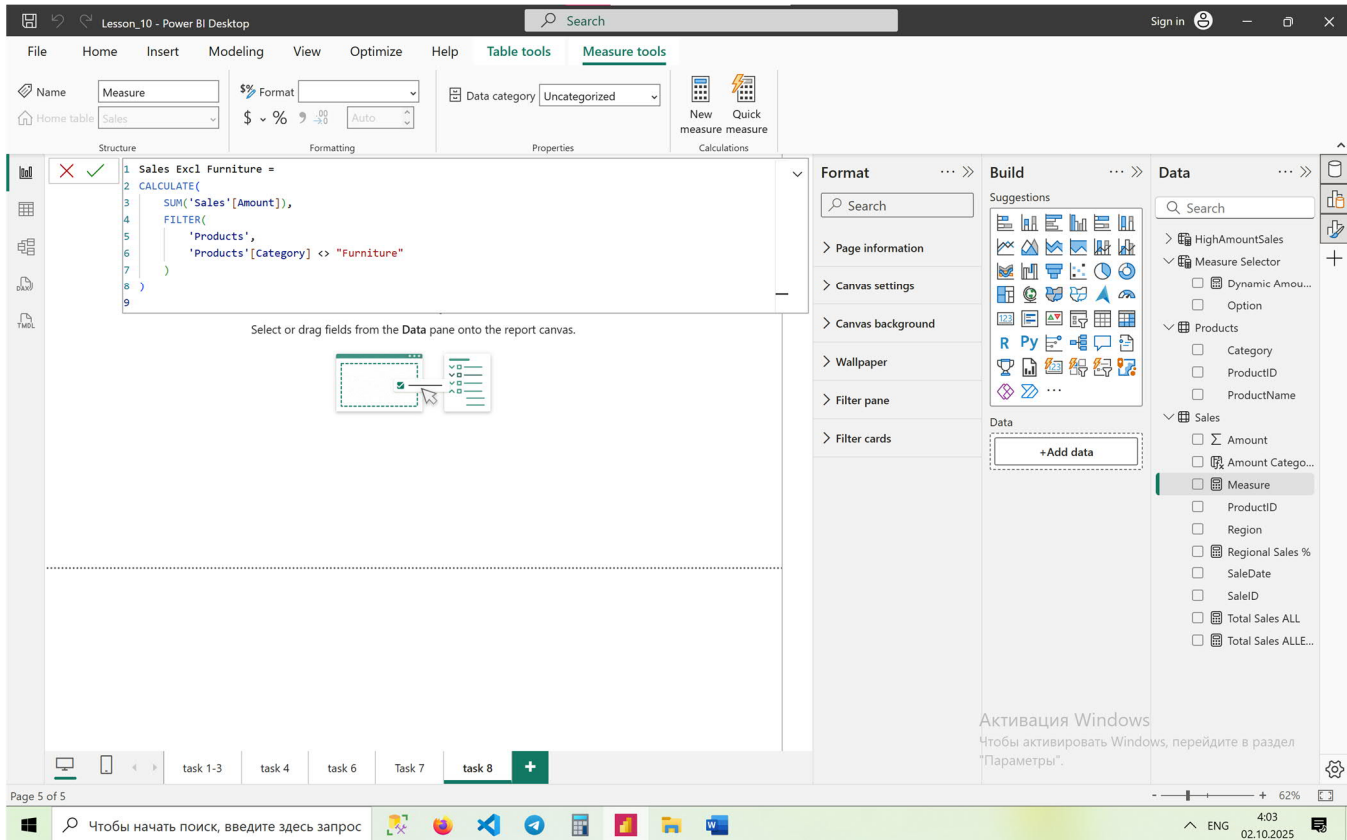
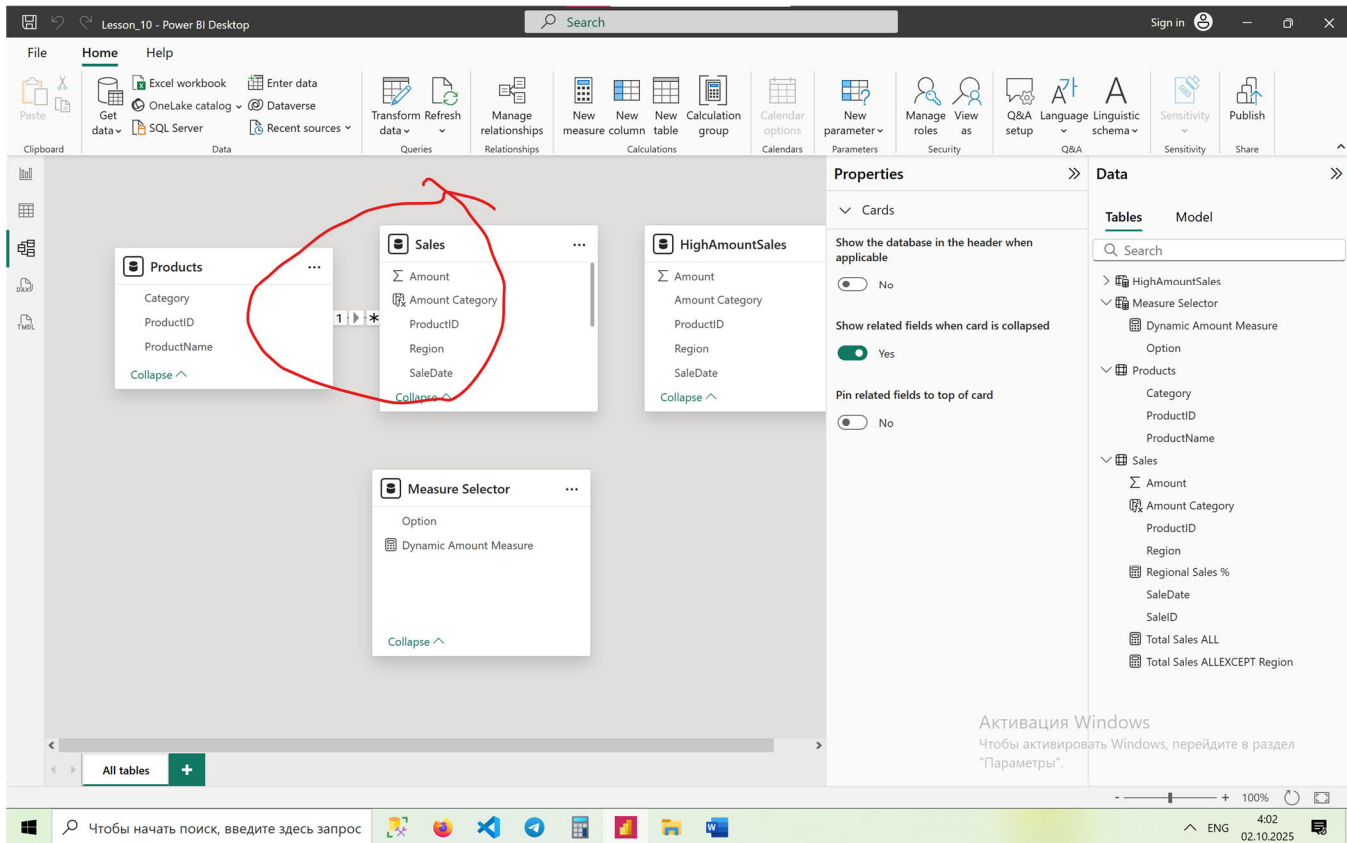


8. Use **FILTER** inside **CALCULATE** to exclude "Furniture" sales (Products[Category] = "Furniture").

```

Sales Excl Furniture =
CALCULATE(
    SUM('Sales'[Amount]),
    FILTER(
        'Products',
        'Products'[Category] <> "Furniture"
    )
)

```



Category ProductID ProductName

SaleID	Region	ProductID	Sum of Amount	Sales Excl Furniture
1	North	P1	1200	1200
3	North	P1	1500	1500
Total			2700	2700

Build

Filters

Columns

Category X | >

ProductID X | >

ProductName X | >

+Add data

Data

Search

HighAmountSales

Measure Selector

Dynamic Amount Measure

Option

Products

Category

ProductID

ProductName

Sales

Amount

Amount Category

ProductID

Region

Regional Sales %

SaleDate

SaleID

Sales Excl Furniture

Total Sales ALL

Total Sales ALLEXCEPT Region

Активация Windows

Чтобы активировать Windows, перейдите в раздел "Параметры".

Category ProductID ProductName

SaleID	Region	ProductID	Sum of Amount	Sales Excl Furniture
2	South	P2	800	800
4	East	P2	600	600
Total			1400	1400

Build

Filters

Columns

Category X | >

ProductID X | >

ProductName X | >

+Add data

Data

Search

HighAmountSales

Measure Selector

Dynamic Amount Measure

Option

Products

Category

ProductID

ProductName

Sales

Amount

Amount Category

ProductID

Region

Regional Sales %

SaleDate

SaleID

Sales Excl Furniture

Total Sales ALL

Total Sales ALLEXCEPT Region

Активация Windows

Чтобы активировать Windows, перейдите в раздел "Параметры".

9. Why might ALLSELECTED behave unexpectedly in a pivot table?

Because pivot tables can apply implicit filters at the visual level, ALLSELECTED may return totals influenced by row/column selections, leading to results that differ from expected "global" totals.

10. Write a measure that calculates total sales and ignores filters from region.

Total Sales Ignore Region =
CALCULATE(
SUM(Sales[Amount]),
ALL(Sales[Region])
)

The screenshot shows the Power BI Desktop interface. The 'Measure tools' ribbon is active. The 'Name' field is set to 'Total Sales Ignore R...' and the 'Home table' is 'Sales'. The 'Format' is set to 'Whole number' and the 'Data category' is 'Uncategorized'. The 'Structure' pane shows the formula for 'Total Sales Ignore Region':

```
1 Total Sales Ignore Region =  
2 CALCULATE(  
3 SUM(Sales[Amount]),  
4 ALL(Sales[Region])  
5 )  
6
```

The 'Build' pane shows suggestions for visualizations. The 'Data' pane shows the 'Sales' table with fields: Amount, Amount Category, ProductID, Region, Regional Sales %, SaleDate, SaleID, Sales Excl Furniture, Total Sales ALL, Total Sales ALLEXCEPT Region, and Total Sales Ignore Region. The 'Total Sales Ignore Region' measure is selected. The 'Name' field is set to '[Total Sales Ignore Region]'. The 'Activate Windows' watermark is visible at the bottom right.

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help

Clipboard

Get data Excel OneLake SQL Server Enter data Datasource Recent sources Transform Refresh data Queries

New visual

Insert

Text box More visuals

Calculations

New visual calculation New measure Quick measure

Sensitivity Publish Copilot

Region ALLEXCEPT Region Ignore Region (All)

East	600	4100
North	2700	4100
South	800	4100
Total	4100	4100

Filters

Search

- HighAmountSales
 - Dynamic Amount Measure
 - Option
- Products
 - Category
 - ProductID
 - ProductName
- Sales
 - Amount
 - Amount Category
 - ProductID
 - Region
 - Regional Sales %
 - SaleDate
 - SaleID
 - Sales Excl Furniture
 - Total Sales ALL
 - Total Sales ALLEXCEPT Region
 - Total Sales Ignore Region

Активация Windows

Чтобы активировать Windows, перейдите в раздел "Параметры".

task 1-3 task 4 task 6 Task 7 task 8 task 10

Page 6 of 6

Чтобы начать поиск, введите здесь запрос

ENG 4:51 02.10.2025

11. Optimize this measure:

High Sales =

```
CALCULATE(  
    SUM(Sales[Amount]),  
    Sales[Amount] > 1000  
)
```


Lesson_10 - Power BI Desktop

File Home Help Table tools Measure tools

Name: High Sales Format: Whole number Data category: Uncategorized

Home table: Sales

Structure: 1 High Sales =
2 CALCULATE(
3 SUM(Sales[Amount]),
4 FILTER(Sales, Sales[Amount] > 1000)
5)
6

Formatting: \$ % 0

Properties: Data category: Uncategorized

Calculations: New measure Quick measure

SaleID	ProductID	Amount	Region	SaleDate	Amount Category
1	P1	1200	North	5 января 2023 г.	High
2	P2	800	South	10 января 2023 г.	Medium
3	P1	1500	North	15 января 2023 г.	High
4	P2	600	East	20 января 2023 г.	Medium

Data: Search

- Measure Selector
 - Dynamic Amount Measure
 - Option
- Products
 - Category
 - ProductID
 - ProductName
- Sales
 - Amount
 - Amount Category
 - High Sales
 - ProductID
 - Region
 - Regional Sales %
 - SaleDate
 - SaleID
 - Sales Excl Furniture
 - Total Sales ALL
 - Total Sales ALLEXCEPT Region
 - Total Sales Ignore Region

Активация Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

Table: Sales (4 rows) Column: High Sales (0 distinct values)

Lesson_10 - Power BI Desktop

File Home Help Table tools Measure tools

Name: High Sales Format: Whole number Data category: Uncategorized

Home table: Sales

Structure: 1 High Sales =
2 CALCULATE(
3 SUM(Sales[Amount]),
4 Sales[Amount] > 1000
5)
6
7

Formatting: \$ % 0

Properties: Data category: Uncategorized

Calculations: New measure Quick measure

SaleID	ProductID	Amount	Region	SaleDate	Amount Category
1	P1	1200	North	5 января 2023 г.	High
2	P2	800	South	10 января 2023 г.	Medium
3	P1	1500	North	15 января 2023 г.	High
4	P2	600	East	20 января 2023 г.	Medium

Data: Search

- Measure Selector
 - Dynamic Amount Measure
 - Option
- Products
 - Category
 - ProductID
 - ProductName
- Sales
 - Amount
 - Amount Category
 - High Sales
 - ProductID
 - Region
 - Regional Sales %
 - SaleDate
 - SaleID
 - Sales Excl Furniture
 - Total Sales ALL
 - Total Sales ALLEXCEPT Region
 - Total Sales Ignore Region

Активация Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

Table: Sales (4 rows) Column: High Sales (0 distinct values)

12. Write a measure Top 2 Products using TOPN and FILTER to show the highest-grossing products.

```

Top 2 Products =
CALCULATE(
    SUM(Sales[Amount]),
    FILTER(
        TOPN(2, SUMMARIZE(Sales, Sales[ProductID], "TotalSales",
SUM(Sales[Amount])), [TotalSales], DESC),
        TRUE()
    )
)

```

The screenshot shows the Power BI Desktop interface with the following components:

- Formula Bar:** Displays the DAX formula for 'Top 2 Products'.
- Table View:** Shows the results of the measure as a table with columns 'ProductID', 'Productname', and 'Top 2 Products'.
- Format and Data Panes:** The 'Data' pane on the right shows the 'Sales' table with various columns, and the 'Format' pane on the left shows the table's structure.
- Task Bar:** The bottom of the window shows a task bar with various application icons and the system clock.

DAX Formula:

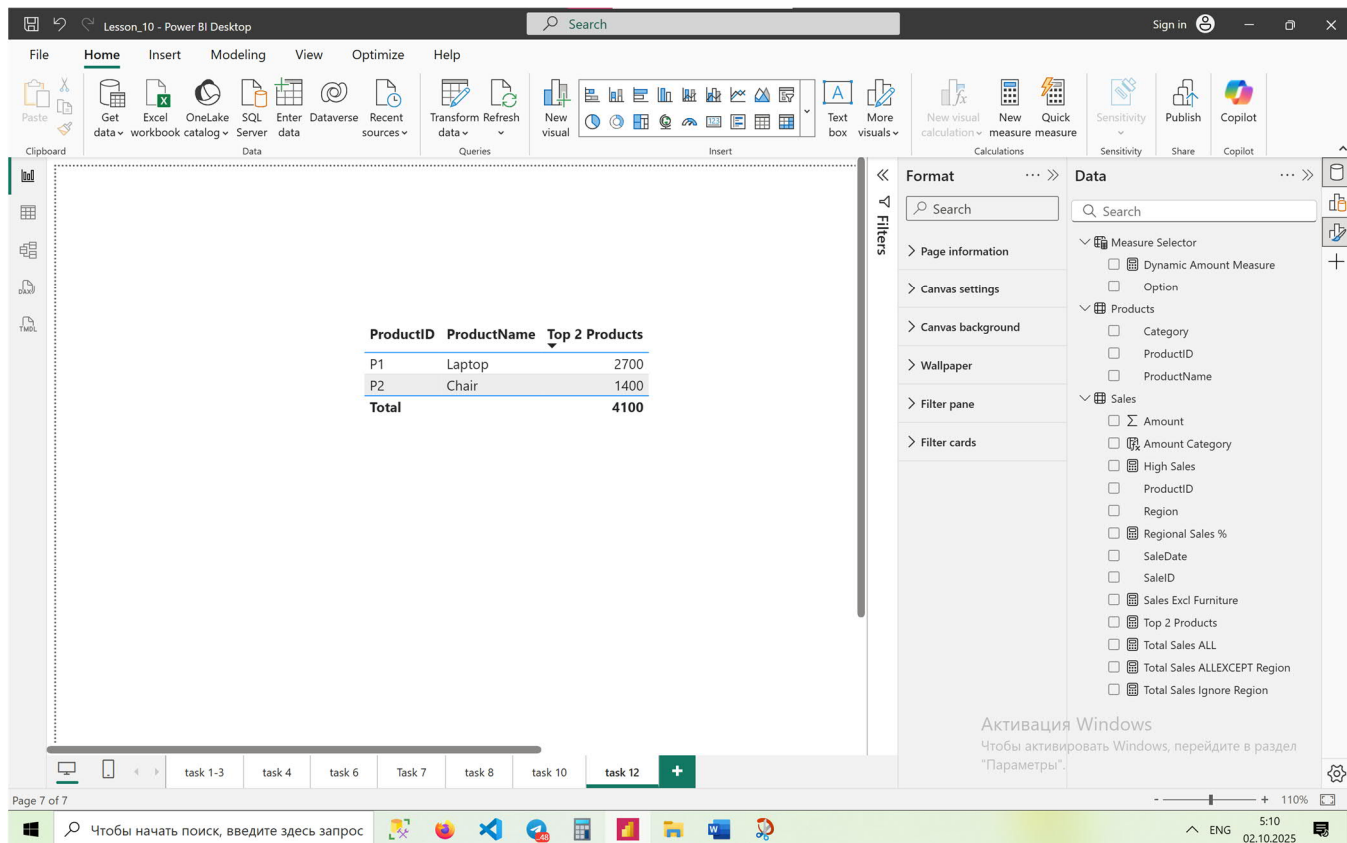
```

1 Top 2 Products =
2 CALCULATE(
3     SUM(Sales[Amount]),
4     FILTER(
5         TOPN(2, SUMMARIZE(Sales, Sales[ProductID], "TotalSales", SUM(Sales[Amount])), [TotalSales], DESC),
6         TRUE()
7     )
8 )
9
10

```

Table Results:

ProductID	Productname	Top 2 Products
P1	Laptop	2700
P2	Chair	1400
Total		4100



13. Use ALLSELECTED with no parameters to respect slicers but ignore visual-level filters.

Total Sales (ALLSELECTED) =
 CALCULATE(
 SUM(Sales[Amount]),
 ALLSELECTED()
)

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help Table tools Measure tools

Name: Total Sales ALLSELE... Format: Whole number Data category: Uncategorized

Home table: Sales

Structure

```
1 Total Sales ALLSELECTED =
2 CALCULATE(
3     SUM(Sales[Amount]),
4     ALLSELECTED()
5 )
6
```

Build visuals with your data. Select or drag fields from the Data pane onto the visual.

Format

- Page information
- Canvas settings
- Canvas background
- Wallpaper
- Filter pane
- Filter cards

Data

- Measure Selector
 - Dynamic Amount Measure
 - Option
- Products
 - Category
 - ProductID
 - ProductName
- Sales
 - Amount
 - Amount Category
 - High Sales
 - ProductID
 - Region
 - Regional Sales %
 - SaleDate
 - SaleID
 - Sales Excl Furniture
 - Top 2 Products
 - Total Sales ALL
 - Total Sales ALLEXCEPT Region
 - Total Sales ALLSELECTED**
 - Total Sales Ignore Region

Активация Windows. Чтобы активировать Windows, перейдите в раздел "Параметры".

task 1-3 task 4 task 6 Task 7 task 8 task 10 task 12 task 13 +

Page 8 of 8

Чтобы начать поиск, введите здесь запрос

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help

Clipboard Get data Excel OneLake SQL Server Enter data Data Warehouse Recent sources Queries Transform Refresh data New visual

Region

- East
- North
- South

Region	Total Sales ALL	Total Sales ALLSELECTED
East	4100	4100
North	4100	4100
South	4100	4100
Total	4100	4100

Data

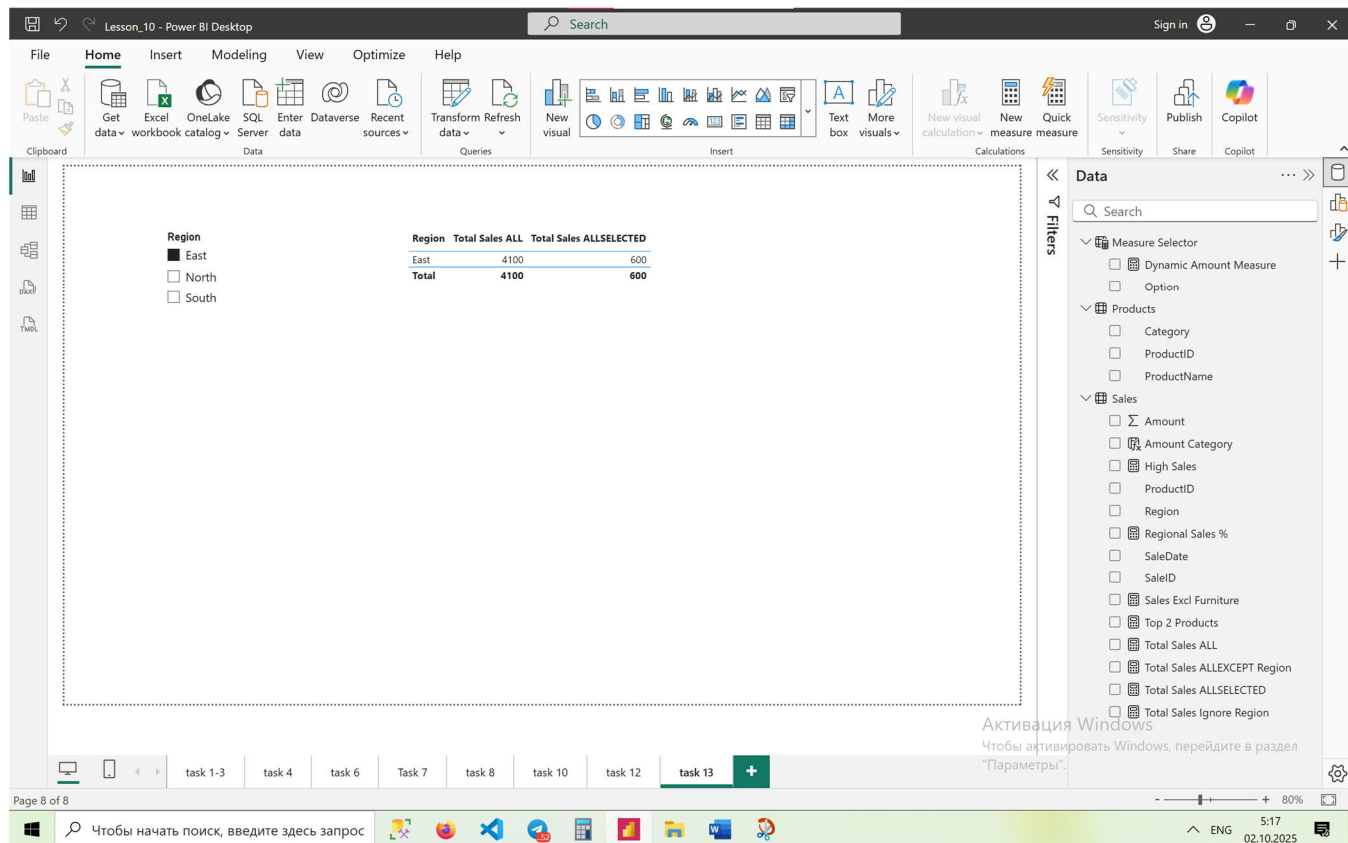
- Filters
- Measure Selector
 - Dynamic Amount Measure
 - Option
- Products
 - Category
 - ProductID
 - ProductName
- Sales
 - Amount
 - Amount Category
 - High Sales
 - ProductID
 - Region
 - Regional Sales %
 - SaleDate
 - SaleID
 - Sales Excl Furniture
 - Top 2 Products
 - Total Sales ALL
 - Total Sales ALLEXCEPT Region
 - Total Sales ALLSELECTED
 - Total Sales Ignore Region

Активация Windows. Чтобы активировать Windows, перейдите в раздел "Параметры".

task 1-3 task 4 task 6 Task 7 task 8 task 10 task 12 task 13 +

Page 8 of 8

Чтобы начать поиск, введите здесь запрос



14. Debug: A SWITCH measure returns incorrect values when fields are added to a matrix visual.

This happens because SWITCH with SELECTEDVALUE may return BLANK when multiple values exist in the current context. To fix it, use HASONEVALUE or add a default case in SWITCH to handle multiple contexts.

15. Simulate a "reset filters" button using ALL in a measure.

```
Reset Sales =
CALCULATE(
    SUM(Sales[Amount]),
    ALL(Sales)
)
```

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help

Clipboard Get data Excel OneLake SQL Server Enter data Datasource Recent sources Transform Refresh data Queries New visual Insert Text box More visuals New visual calculation New measure Quick measure Sensitivity Publish Copilot

Region

- ☐ East
- ☐ North
- ☐ South

Region	Sum of Amount	Reset Sales
East	600	4100
North	2700	4100
South	800	4100
Total	4100	4100

Data

Search

- Measure Selector
 - ☐ Dynamic Amount Measure
 - ☐ Option
- Products
 - ☐ Category
 - ☐ ProductID
 - ☐ ProductName
- Sales
 - ☐ Amount
 - ☐ Amount Category
 - ☐ High Sales
 - ☐ ProductID
 - ☐ Region
 - ☐ Regional Sales %
 - ☐ Reset Sales
 - ☐ SaleDate
 - ☐ SaleID
 - ☐ Sales Excl Furniture
 - ☐ Top 2 Products
 - ☐ Total Sales ALL
 - ☐ Total Sales ALLEXCEPT Region
 - ☐ Total Sales ALLSELECTED
 - ☐ Total Sales Ignore Region

task 1-3 task 4 task 6 Task 7 task 8 task 10 task 12 task 13 task 15 +

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Чтобы начать поиск, введите здесь запрос

ENG 5:24 02.10.2025

Lesson_10 - Power BI Desktop

File Home Insert Modeling View Optimize Help Format Data / Drill

Clipboard Get data Excel OneLake SQL Server Enter data Datasource Recent sources Transform Refresh data Queries New visual Insert Text box More visuals New visual calculation New measure Quick measure Sensitivity Publish Copilot

Region

- ☐ East
- ☒ North
- ☐ South

Region	Sum of Amount	Reset Sales
North	2700	4100
Total	2700	4100

Data

Search

- Measure Selector
 - ☐ Dynamic Amount Measure
 - ☐ Option
- Products
 - ☐ Category
 - ☐ ProductID
 - ☐ ProductName
- Sales
 - ☐ Amount
 - ☐ Amount Category
 - ☐ High Sales
 - ☐ ProductID
 - ☒ Region
 - ☐ Regional Sales %
 - ☐ Reset Sales
 - ☐ SaleDate
 - ☐ SaleID
 - ☐ Sales Excl Furniture
 - ☐ Top 2 Products
 - ☐ Total Sales ALL
 - ☐ Total Sales ALLEXCEPT Region
 - ☐ Total Sales ALLSELECTED
 - ☐ Total Sales Ignore Region

task 1-3 task 4 task 6 Task 7 task 8 task 10 task 12 task 13 task 15 +

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Чтобы начать поиск, введите здесь запрос

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