

# DAX Time patterns

**Luboš Bednář**

Partner & BI consultant

Intelligent Technologies

lubos.bednar@intecs.cz

[www.intecs.cz](http://www.intecs.cz)

# DAX Time patterns

1. Co je DAX?
2. Kalkulace Last Year, YTD
3. Semi-aditivní metriky
4. Dynamický výběr období v Power BI

# Jazyk DAX (Data Analysis Expressions)

- Využití:
  - PowerPivot (Excel)
  - Power BI
  - SSAS Tabular (SQL Server)
- Vytváření kalkulovaných sloupců a měřítek

# Year over Year

```
SUMX (
  VALUES ( DimDate[Date] ),
  CALCULATE (
    SUM ( FactInternetSales[SalesAmount] ),
    ALL ( DimDate ),
    DATEADD ( DimDate[Date], -1, YEAR )
  )
)
```

# YTD & Cumulative

- Sales Amount YTD =  
`CALCULATE (`  
    `SUM ( FactInternetSales[SalesAmount] ),`  
    `FILTER (`  
        `ALL ( DimDate ),`  
        `DimDate[Date] <= MAX ( DimDate[Date] )`  
        `&& DimDate[CalendarYear] = MAX ( DimDate[CalendarYear] )`  
    `)`  
    `)`

# Semi-additive

Inventory Balance =

```
CALCULATE (  
    SUM ( FactProductInventory[UnitsBalance] ),  
    LASTDATE ( DimDate[Date] )  
)
```

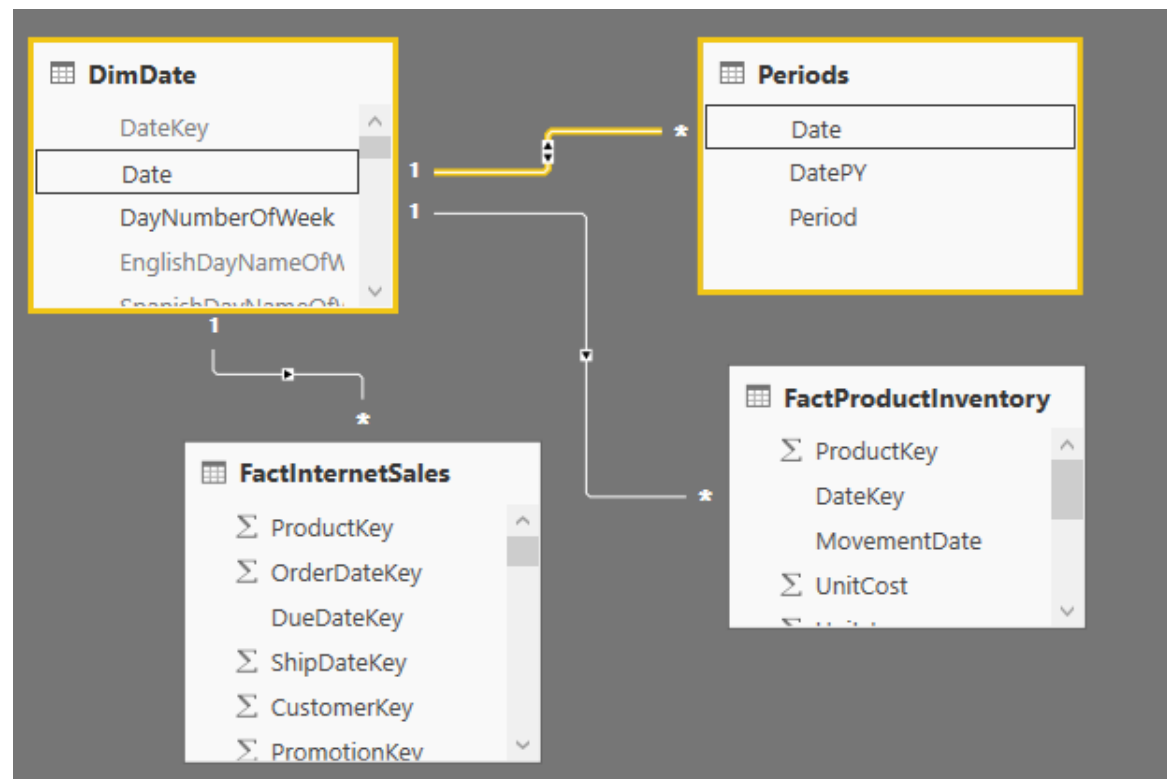
NEBO

```
CALCULATE (  
    SUM ( FactProductInventory[UnitsBalance] ),  
    FILTER ( ALL ( DimDate ), DimDate[Date] = MAX ( DimDate[Date] ) )  
)
```

# Dynamický výběr období

- Vytvoření tabulky Periods s vazbou na Date

	Date	DatePY	Period
1	7/30/2008 12:00:00 AM	7/29/2008 12:00:00 AM	Last 14 days
2	7/31/2008 12:00:00 AM	7/30/2008 12:00:00 AM	Last 14 days
3	8/1/2008 12:00:00 AM	7/31/2008 12:00:00 AM	Last 14 days
4	8/2/2008 12:00:00 AM	8/1/2008 12:00:00 AM	Last 14 days
5	8/3/2008 12:00:00 AM	8/2/2008 12:00:00 AM	Last 14 days
6	8/4/2008 12:00:00 AM	8/3/2008 12:00:00 AM	Last 14 days
7	8/5/2008 12:00:00 AM	8/4/2008 12:00:00 AM	Last 14 days
8	8/6/2008 12:00:00 AM	8/5/2008 12:00:00 AM	Last 14 days
9	8/7/2008 12:00:00 AM	8/6/2008 12:00:00 AM	Last 14 days
10	8/8/2008 12:00:00 AM	8/7/2008 12:00:00 AM	Last 14 days
11	8/9/2008 12:00:00 AM	8/8/2008 12:00:00 AM	Last 14 days
12	8/10/2008 12:00:00 AM	8/9/2008 12:00:00 AM	Last 14 days
13	8/11/2008 12:00:00 AM	8/10/2008 12:00:00 AM	Last 14 days
14	8/12/2008 12:00:00 AM	8/11/2008 12:00:00 AM	Last 14 days
15	7/12/2008 12:00:00 AM	7/11/2008 12:00:00 AM	Last Month
16	7/13/2008 12:00:00 AM	7/12/2008 12:00:00 AM	Last Month
17	7/14/2008 12:00:00 AM	7/13/2008 12:00:00 AM	Last Month
18	7/15/2008 12:00:00 AM	7/14/2008 12:00:00 AM	Last Month
19	7/16/2008 12:00:00 AM	7/15/2008 12:00:00 AM	Last Month



# Dynamický filtr období pomocí funkce SWITCH()

```
IF (
    HASONEVALUE ( 'Time Calculations'[Time Calculations] ),
    SWITCH (
        VALUES ( 'Time Calculations'[Time Calculations] ),
        "Actual", SUM ( FactInternetSales[SalesAmount] ),
        "Cumulative", [Sales Amount YTD],
        SUM ( FactInternetSales[SalesAmount] )
    ),
    SUM ( FactInternetSales[SalesAmount] )
)
```



# Dotazy

**Luboš Bednář**

Partner & BI consultant

Intelligent Technologies

lubos.bednar@intecs.cz

[www.intecs.cz](http://www.intecs.cz)