Calculations I

Adding business logic to a cube

Stacia Misner
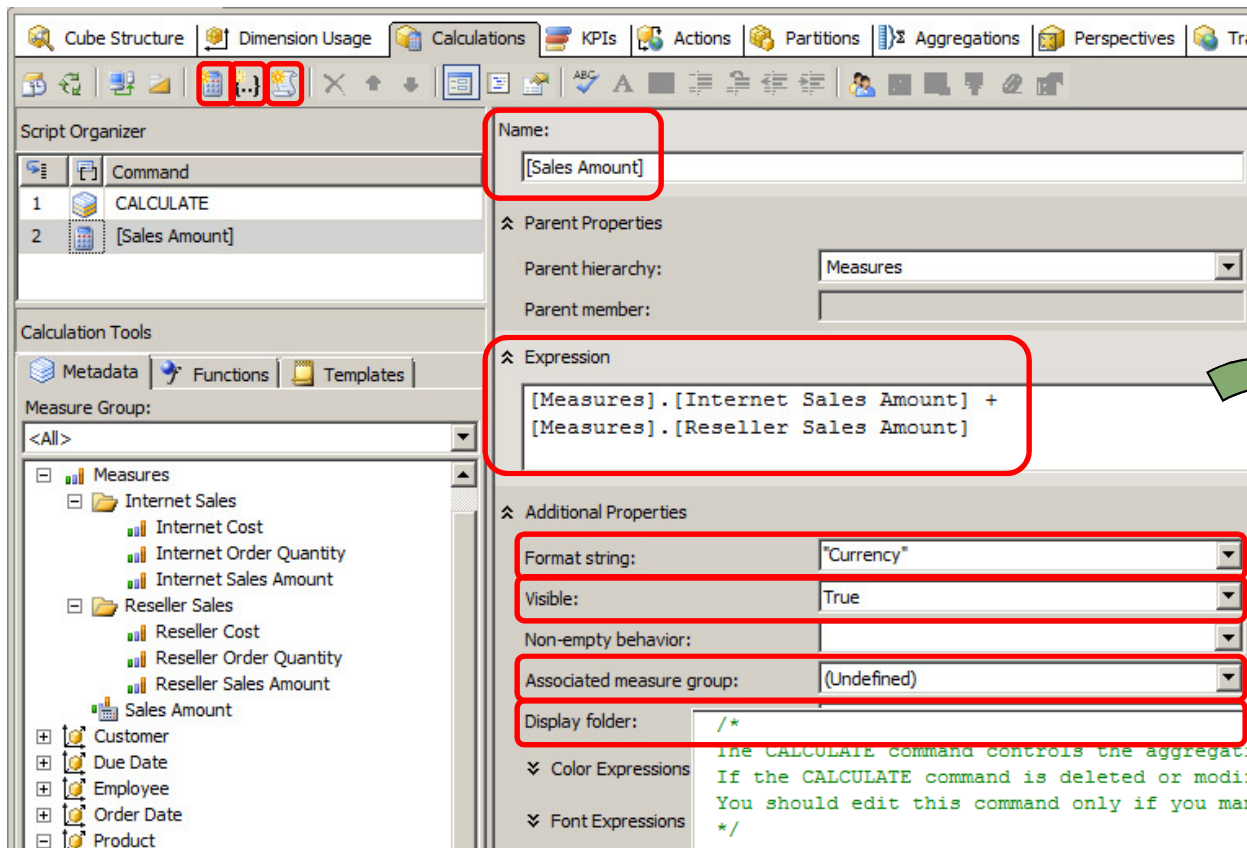
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Overview

- **Calculation Designer**
- **Calculations**
- **Color and Font Expressions**

Calculation Designer

MDX:
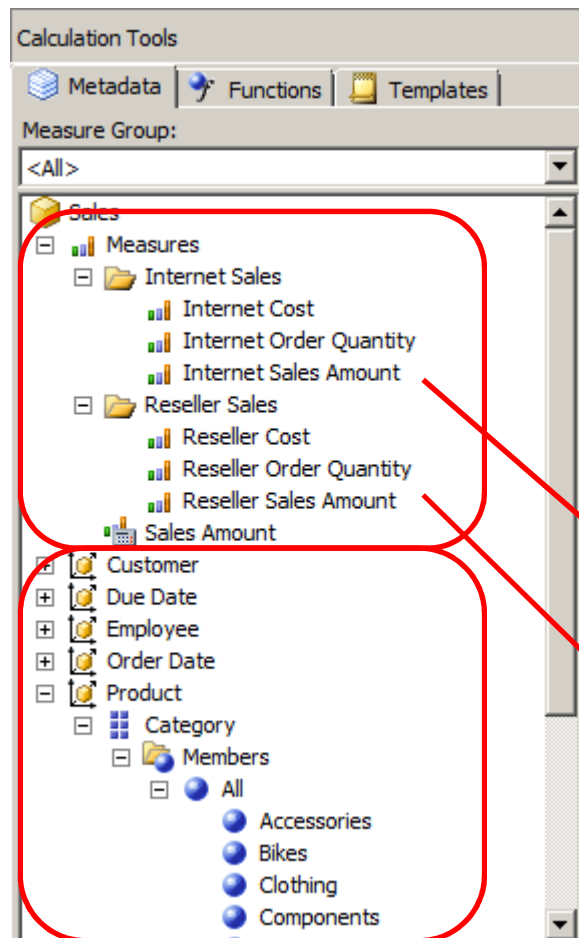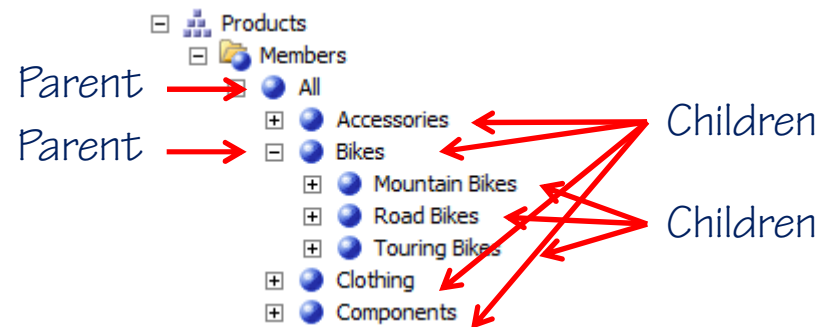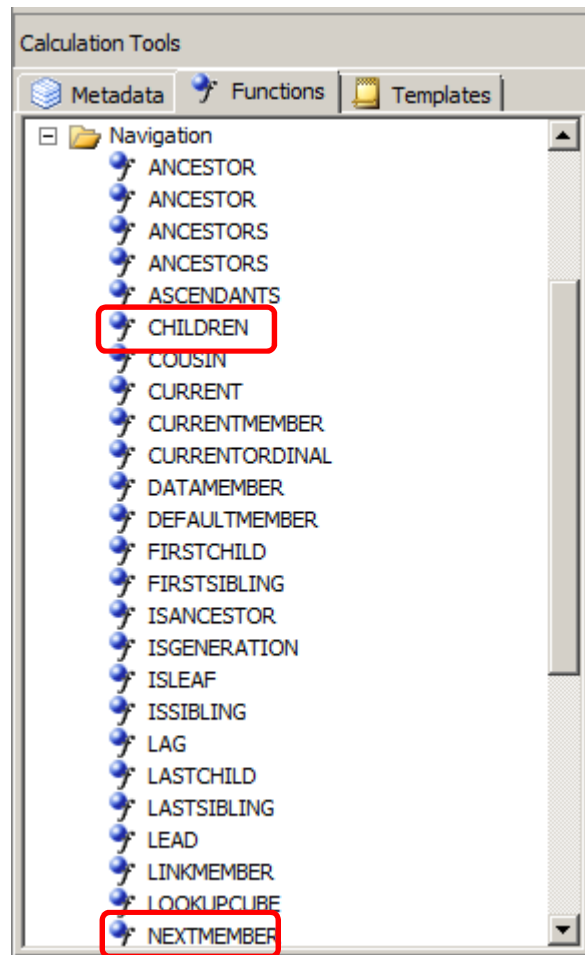- Data definition language
- Data query language

Calculation Tools: Metadata

Measure
Calculation (Member, Named Set, KPI)
Dimension
Hierarchy
Level
Dimension Member

```
[Measures].[Internet Sales Amount]
+
[Measures].[Reseller Sales Amount]
```
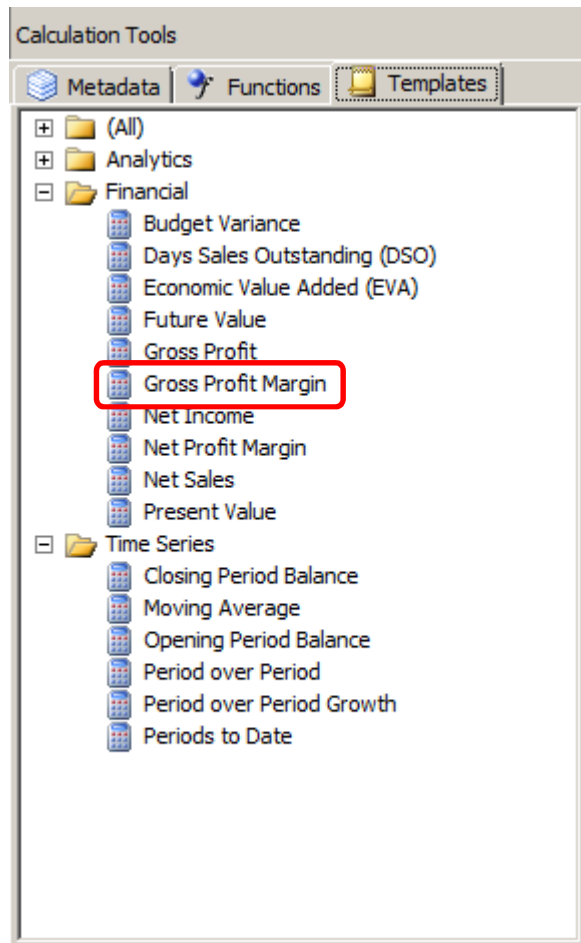
Calculation Tools: Functions

Calculation Tools

Metadata | Functions | Templates

- Navigation
  - ANCESTOR
  - ANCESTOR
  - ANCESTORS
  - ANCESTORS
  - ASCENDANTS
  - **CHILDREN**
  - COUSIN
  - CURRENT
  - CURRENTMEMBER
  - CURRENTORDINAL
  - DATAMEMBER
  - DEFAULTMEMBER
  - FIRSTCHILD
  - FIRSTSIBLING
  - ISANCESTOR
  - ISGENERATION
  - ISLEAF
  - ISSIBLING
  - LAG
  - LASTCHILD
  - LASTSIBLING
  - LEAD
  - LINKMEMBER
  - LOOKUPCUBE
  - **NEXTMEMBER**

- Products
  - Members
    - Parent → All
    - Parent → Accessories ← Children
    - Bikes ← Children
      - Mountain Bikes
      - Road Bikes ← Children
      - Touring Bikes
    - Clothing
    - Components

```
([Measures].[Sales Amount],
[Order Date].[Calendar].PREVMEMBER)
```

Tuple

Calculation Tools: Templates

Calculation Tools

Metadata | Functions | Templates

- ⊞ 📁 (All)
- ⊞ 📁 Analytics
- ⊟ 📂 Financial
  - Budget Variance
  - Days Sales Outstanding (DSO)
  - Economic Value Added (EVA)
  - Future Value
  - Gross Profit
  - **Gross Profit Margin**
  - Net Income
  - Net Profit Margin
  - Net Sales
  - Present Value
- ⊟ 📂 Time Series
  - Closing Period Balance
  - Moving Average
  - Opening Period Balance
  - Period over Period
  - Period over Period Growth
  - Periods to Date

Script View

```
CREATE MEMBER
CURRENTCUBE.[Measures].[Gross Profit Margin]
AS <<Net Sales>> - <<Cost of Goods Sold>>
/
<<Net Sales>>
                              ,
FORMAT_STRING = "Standard";
```

Form View

```
([Measures].[Sales Amount] – [Measures].[Cost])
/
[Measures].[Sales Amount]
```

pluralsight
see what you can learn

Color and Font Expressions

iif([Measures].[Profit Margin Percent]< .1,255 /*Red*/,0 /*Black*/)

Summary

- **Calculation Designer**
  - Metadata, functions, templates
- **Calculations**
  - Mathematical operations, tuples, ratios
- **Color and Font Expressions**
  - Conditional expressions, color and font codes

References

- **Defining Calculations**
  - http://msdn.microsoft.com/en-us/library/ms175362.aspx
- **Stairway to MDX**
  - http://www.sqlservercentral.com/stairway/72404/