

MDX calculated members and named sets

- Calculated members omogućavaju da se u MDX-u definišu posebna izračunavanja
- Imenovani skupovi su skupovi torke koji se definišu u upitu i koji kasnije mogu da se koriste u pozivima funkcija i selekcijama

Calculated members

- Definicija sa WITH
- Sekcija WITH je opcionalna, navodi se prije SELECT

Primjer 1

- Primjer1: izračunati vrijednost prodaje, broj prodanih primjeraka i prosječnu vrijednost prodaje u prva dva kvartala 2005.

	Dollar Sales	Unit Sales	Avg Sales Price
Q1, 2005	96,949.10	3,866	25.1
Q2, 2005	104,510.20	4,125	25.3

Primjer 1, rješenje

```
WITH
MEMBER [Measures].[Avg Sales Price] AS
' [Measures].[Dollar Sales] / [Measures].[Unit Sales] '
SELECT
{ [Measures].[Dollar Sales], [Measures].[Unit Sales],
  [Measures].[Avg Sales Price]
}
on columns,
{ [Time].[Q1, 2005], [Time].[Q2, 2005] }
on rows
FROM Sales
WHERE ([Customer].[MA])
```

Sintaksa za MEMBER

- MEMBER Identifier AS ' member-formula ' [, properties ...]
- Identifier specificuje ime, dimenziju, poziciju u hijerarhiji
- Formula određuje izračunavanje

Svojstva definisanih članova

- Član (member) mora da bude “vezan” za dimenziju, pa definicija člana mora da sadrži ime dimenzije
- Ako je definisani član potomak nekog drugog, onda se mora navesti i roditelj.
[Measures].[Ratios].[Avg Sales Price]
- Nije dozvoljeno da definisani član bude potomak drugog definisanog člana

Opseg važenja

- Ako je član definisan sa WITH opseg važenja je upit
- Neki serveri omogućavaju definisanje članova na serveru, pa je njih moguće koristiti iz više upita

Primjer 2

- Primjer 2: napisati upit koji računa vrijednost prodaje i broj prodatih primjeraka u prva dva kvartala 2005., kao i razliku tako dobijenih vrijednosti

	Dollar Sales	Unit Sales
Q1, 2005	96,949.10	3,866
Q2, 2005	104,510.20	4,125
Q1 to Q2 Growth	7,561.10	259

Primjer 2, rješenje

```
WITH
MEMBER [Time].[Q1 to Q2 Growth] AS
' [Time].[Q2, 2005] - [Time].[Q1, 2005]'
SELECT
{ [Measures].[Dollar Sales], [Measures].[Unit Sales] }
on columns,
{ [Time].[Q1, 2005], [Time].[Q2, 2005], [Time].[Q1 to Q2 Growth] }
on rows
FROM Sales
WHERE ([Customer].[MA])
```

SOLVE ORDER

	Dollar Sales	Unit Sales	Avg Sales Price
Q1, 2005	96949.1	3866	25.1
Q2, 2005	104510.2	4125	25.3
Q1 to Q2 Growth	7561.1	259	0.3 or 29.19

SOLVE ORDER (2)

```
WITH
MEMBER [Measures].[Avg Sales Price] AS
 '[Measures].[Dollar Sales] / [Measures].[Unit Sales]',
SOLVE_ORDER = 0
MEMBER [Time].[Q1 to Q2 Growth] AS
 '[Time].[Q2, 2005] - [Time].[Q1, 2005]',
SOLVE_ORDER = 1
SELECT
 { [Measures].[Dollar Sales], [Measures].[Unit Sales],
   [Measures].[Avg Sales Price]
 }
on columns,
 { [Time].[Q1, 2005], [Time].[Q2, 2005], [Time].[Q1 to Q2 Growth] }
on rows
FROM [Sales]
WHERE ([Customer].[MA])
```

Aritmetičke operacije

FUNCTION OR OPERATOR	CALCULATES:
+ - * /	Addition, subtraction, multiplication, and division
-	For unary negation
()	Parentheses for grouping operations
^	For "raised-to-the-power-of" (Microsoft-only)

Funkcija AVG()

- Sintaksa

```
Avg ( set [, numeric_value_expr] )
```

```
Avg (  
    { [Product].[Tools],  
      [Product].[Toys],  
      [Product].[Indoor, Outdoor Games] },  
    [Measures].[Dollar Sales]  
)
```

Funkcija COUNT()

- Sintaksa

```
Count ( set, [ INCLUDEEMPTY ] )
```

```
Count (
    CrossJoin (
        { [Measures].[Unit Sales] },
        [Product].[Tools].Children
    )
)
```

Funkcija DISTINCTCOUNT

- Sintaksa

```
DistinctCount ( set )
```

```
DistinctCount (  
    [Measures].[Dollar Sales] *  
    { [Product].[Tools], [Product].[Toys],  
      [Product].[Indoor, Outdoor Games]  
    }  
)
```


Funkcija SUM

- Sintaksa

```
Sum (set [, numeric_value_expr ] )
```

```
Sum (  
    {[Product].[Tools],  
     [Product].[Toys],  
     [Product].[Indoor, Outdoor Games] },  
    [Measures].[Dollar Sales]  
)
```

Funkcija MAX

- Sintaksa

```
Max (set, [ numeric_value_expr ] )
```

```
Max (  
    {[Product].[Tools],  
     [Product].[Toys],  
     [Product].[Indoor, Outdoor Games] },  
    [Measures].[Dollar Sales]  
)
```

Funkcija MEDIAN

- Sintaksa

```
Median (set [, numeric_expr ] )
```

```
Median (  
    [Product].[Tools].Children,  
    [Measures].[Dollar Sales]  
)
```

Funkcija MIN

- Sintaksa

```
Min ( set [, numeric_expr ] )
```

```
Min (  
    [Product].[Tools].Children,  
    [Measures].[Dollar Sales]  
)
```

Imenovani skupovi

- Za imenovanje skupa koji može da se kasnije koristi u upitima
- Koristi se u definisanju članova ili osa

Primjer 3

```
WITH SET [User Selection] AS
'{ [Product].[Action Figures], [Product].[Dolls] }'
MEMBER [Product].[UserTotal] AS
'Sum ( [User Selection] )'
SELECT
{ [Time].[Jan, 2005],
  [Time].[Feb, 2005]
}
ON COLUMNS,
{ [Product].[Toys],
  [User Selection],
  [Product].[UserTotal]
}
ON ROWS
FROM Sales
WHERE ([Measures].[Unit Sales]
```

	Jan, 2005	Feb, 2005
Toys	1,989	1,695
Action Figures	405	352
Dolls	28	30
UserTotal	433	382

Imenovani skupovi sinaksa

- Sintaksa

```
SET Identifier AS ' set-formula '
```

Primjer 4

WITH

SET [User Selection 1] AS '...'

SET [User Selection 2] AS '...'

MEMBER [Measures].[M1] AS '...'

SET [User Selection 3] AS '...'

MEMBER [Product].[P1] AS '...'