Consultas MDX

Como calcular a seletividade?

1. É necessário pegar o número de valores que cada atributo pode assumir. Por exemplo: p_mfgr pode assumir os seguintes valores (MFGR#1, MFGR#2, MFGR#3, MFGR#4, MFGR#5). Então a seletividade deste atributo numa consulta é de 1/5
2. Cada operação de AND representa a operação de multiplicação.
3. Operações de OR é uma soma.

Número de valores distintos que cada um dos atributos pode assumir considerando a base 10:

S_Region	5
S_Nation	25
S_City	250
C_Region	5
C_Nation	25
C_City	250
P_MFGR	5
P_category	25
P_brand1	1000
P_color	92
P_type	150
P_size	50
P_container	40
P_name	8372
D_sellingseason	5
D_Year	7
D_yearmonthnum	84
D_weeknuminyear	53

SSB Range [7.6e-7; 3.4e-2]

Nosso Range [7.6e-7; 3.4e-2]

OBS: As consultas em laranja são consultas mapeadas para mdx trazida do SSB. As consultas em lilás foram criada a partir de consultas laranja, no intuito de aumentar a variabilidade de visões, mas de forma a preservar a seletividade da consulta laranja.

1 Dimensão por Consulta (8)			
MDX	**Níveis Envolvidos**	**Filtros**	**Seletividade**
1. SELECT [Measures].[Lo Revenue] ON 0, [PART.PART COLOR].[P COLOR].[white] ON 1 FROM [LINEORDER]	[PART. PART COLOR].[P COLOR]	*p_color = 'white'*	1.08e-2
2. SELECT [Measures].[Lo Revenue] ON 0, [PART].[P BRAND1].[MFGR#111] ON 1 FROM [LINEORDER]	[PART].[P BRAND1]	*p_brand1 = 'MFGR#111'*	1.0e-3
3. SELECT [Measures].[Lo Revenue] ON 0, [PART.PART CONTAINER].[P CONTAINER].[MED CAN]ON 1 FROM [LINEORDER]	[PART. PART CONTAINER].[P CONTAINER]	*p_container = 'MED CAN'*	2.5e-2
4. SELECT [Measures].[Lo Revenue] ON 0, [SUPPLIER].[S CITY].[BRAZIL 4]. Children ON 1 FROM [LINEORDER]	[SUPPLIER].[S NAME]	*s_city = 'BRAZIL 4'*	4.0e-3
5. SELECT [Measures].[Lo Revenue] ON 0, [CUSTOMER].[C CITY].[CHINA 5].Children ON 1 FROM [LINEORDER]	[CUSTOMER].[C NAME]	*c_city = 'CHINA 5'*	4.0e-3
6. SELECT [Measures].[Lo Revenue] ON 0, [COMMITDATE.SEASON MONTH].[D SEASON].[Winter].[January] ON 1 FROM [LINEORDER]	[COMMITDATE.SEASON MONTH].[D MONTH]	*d_sellingseason = 'Winter' and d_month = 'January'*	1.67e-2
7. SELECT [Measures].[Lo Revenue] ON 0, [DATE.SEASON MONTH].[D SEASON].[Winter].[January] ON 1 FROM [LINEORDER]	[DATE.SEASON MONTH].[D MONTH]	*d_sellingseason = 'Winter' and d_month = 'January'*	1.67e-2
8. SELECT [Measures].[Lo Revenue] ON 0, { [DATE.DATE WEEKNUMINYEAR].[D Year].[1994].[6]} ON 1 FROM [LINEORDER]	[DATE.DATE WEEKNUMINYEAR].[D WEEKNUMINYEAR]	*d_*weeknuminyear = 6 and *d_year = '1994'*	2.6e-3

2 Dimensões por Consulta (8)			
MDX	**Níveis Envolvidos**	**Filtros**	**Seletividade**
1. SELECT [Measures].[Lo Revenue] ON 0, {[PART].[P MFGR].[MFGR#3]. Children}* {[SUPPLIER].[S NATION].[BRAZIL]. Children } ON 1 FROM [LINEORDER]	• [PART].[P CATEGORY] • [SUPPLIER].[S CITY]	*p_mfgr = 'MFGR#3' and s_nation = 'BRAZIL'*	8.0e-3
2. SELECT [Measures].[Lo Revenue] ON 0, {[PART].[P CATEGORY].[MFGR#11]. Children} * {[SUPPLIER].[S CITY].[BRAZIL 4]. Children} ON 1 FROM [LINEORDER]	• [PART].[P BRAND1] • [SUPPLIER].[S NAME]	*p_category = 'MFGR#11' and s_city = 'BRAZIL 4'*	1.6e-4
3. SELECT [Measures].[Lo Revenue] ON 0, {[SUPPLIER].[S NATION].[BRAZIL]. Children}*{ [CUSTOMER].[C CITY].[CHINA 5].Children } ON 1 FROM [LINEORDER]	• [CUSTOMER].[C NAME] • [SUPPLIER].[S CITY]	*s_nation = 'BRAZIL' and c_city = 'CHINA 5'*	1.6e-4
4. SELECT [Measures].[Lo Revenue] ON 0, {[SUPPLIER].[S CITY].[BRAZIL 4]. Children}*{[CUSTOMER].[C NATION].[CHINA].Children} ON 1 FROM [LINEORDER]	• [CUSTOMER].[C CITY] • [SUPPLIER].[S NAME]	*s_city = 'BRAZIL 4' and c_nation = 'CHINA'*	1.6e-4
5. SELECT [Measures].[Lo Revenue] ON 0,{ [CUSTOMER].[C NATION].[CHINA].Children} * {[DATE.DATE YEARMONTHNUM].[D YEARMONTHNUM].[199401] } ON 1 FROM [LINEORDER]	• [CUSTOMER].[C CITY] • [DATE.DATE YEARMONTHNUM].[D YEARMONTHNUM]	*c_nation = 'CHINA' and d_*yearmonthnum = '199401'	4.76e-4
6. SELECT [Measures].[Lo Revenue] ON 0, {[CUSTOMER].[C CITY].[CHINA 5].Children} * { [DATE.DATE WEEKNUMINYEAR].[D Year].[1994].[6] } ON 1 FROM [LINEORDER]	• [CUSTOMER].[C NAME] • [DATE.DATE WEEKNUMINYEAR].[D WEEKNUMINYEAR]	*c_city = 'CHINA 5' and d_*weeknuminyear = 6 and *d_year = '1994'*	1.05e-5
7. SELECT [Measures].[Lo Revenue] ON 0, {[COMMITDATE.SEASON MONTH].[D SEASON].[Winter].Children} * { [PART].[P CATEGORY].[MFGR#11]. Children } ON 1 FROM [LINEORDER]	• [PART].[P BRAND1] • COMMITDATE.SEASON MONTH].[D MONTH]	*d_sellingseason = 'Winter' and p_category = 'MFGR#11'*	8.0e-3
8. SELECT [Measures].[Lo Revenue] ON 0, {[DATE].[D YEAR].[1993].Children} * { [COMMITDATE.SEASON MONTH].[D SEASON].[Winter].Children } ON 1 FROM [LINEORDER]	• [DATE].[D YEARMONTH] • [COMMITDATE.SEASON MONTH].[D MONTH]	*d_year = '1993' AND d_sellingseason = 'Winter'*	2.85e-2

OBS: A consulta Q3.2 em mdx não foi adicionada, pois ela está associada a mesma visão das consulta q3.3, e também, não seria possível modificá-la sem alterar os filtros. Visto que, alteração do filtro alteraria a seletividade.

3 Dimensões por Consulta (8)			
MDX	**Níveis Envolvidos**	**Filtros**	**Seletividade**
1. SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } } ON COLUMNS, NON EMPTY { Order (Order ({ {[CUSTOMER].[C City].[UNITED KI1],[CUSTOMER].[C City].[UNITED KI5] } * {[SUPPLIER].[S City].[UNITED KI1],[SUPPLIER].[S City].[UNITED KI5] } * {[DATE].[D Yearmonth].[Dec1997]}} , [Measures].[Lo Revenue] , BDESC) , [DATE].CurrentMember.Name , BASC) } ON ROWS FROM [LINEORDER]	• [CUSTOMER].[C CITY] • [SUPPLIER].[S CITY] • [DATE].[D YEARMONTH]	*and (c_city='UNITED KI1' or c_city='UNITED KI5')* *and (s_city='UNITED KI1' or s_city='UNITED KI5')* *and d_yearmonth = 'Dec1997'*	**Q3.4** = 7.6e-7
2. SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } } ON COLUMNS, NON EMPTY { {[CUSTOMER].[C REGION].Members } * { [PART].[P Category].[MFGR#12].Children } } ON ROWS FROM [LINEORDER] WHERE [SUPPLIER].[S Region].[AMERICA]	• [PART].[P BRAND1] • [SUPPLIER].[S City] • [CUSTOMER].[C REGION]	*and p_category = 'MFGR#12'* *and s_region = 'AMERICA'*	**MQ2.1** = 8.0e-3
3. SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } } ON COLUMNS, NON EMPTY { Order (Order ({ {[CUSTOMER].[C Region].[ASIA].Children} * {[SUPPLIER].[S Region].[ASIA].Children} * {[DATE].[D Year].[1992]:[DATE].[D Year].[1997]}} , [Measures].[Lo Revenue] , BDESC) , [DATE].CurrentMember.Name , BASC) } ON ROWS FROM [LINEORDER]	• [CUSTOMER].[C NATION] • [SUPPLIER].[S NATION] • [DATE].[D YEAR]	*and c_region = 'ASIA' and s_region = 'ASIA'* *and d_year >= 1992 and d_year <= 1997*	**Q3.1** = 3.4e-2
4. SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } } ON COLUMNS, NON EMPTY { Order (Order ({ {[CUSTOMER].[C City].[UNITED KI1],[CUSTOMER].[C City].[UNITED KI5] } * {[SUPPLIER].[S City].[UNITED KI1],[SUPPLIER].[S City].[UNITED KI5] } * {[DATE].[D Year].[1992]:[DATE].[D Year].[1997]}} , [Measures].[Lo Revenue] , BDESC) , [DATE].CurrentMember.Name , BASC) } ON ROWS FROM [LINEORDER]	• [CUSTOMER].[C CITY] • [SUPPLIER].[S CITY] • [DATE].[D YEAR]	*and (c_city='UNITED KI1' or c_city='UNITED KI5')* *and (s_city='UNITED KI1' or s_city='UNITED KI5')* *and d_year >= 1992 and d_year <= 1997*	**Q3.3** = 5.5e-5
5. SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } }	• [PART].[BRAND1]	*and p_brand1 between*	**MQ2.2** = 1.6e-3

	ON COLUMNS, NON EMPTY { {[COMMITDATE.SEASON MONTH].[D SEASON].Members } * { [PART].[P Brand1].[MFGR#2221]:[PART].[P Brand1].[MFGR#2228] } } ON ROWS FROM [LINEORDER] WHERE [SUPPLIER].[S Region].[ASIA]	• [SUPPLIER].[S REGION] • [COMMITDATE.SEASON MONTH].[D SEASON]	*'MFGR#2221' and 'MFGR#2228' and s_region = 'ASIA'*	
6.	SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } } ON COLUMNS, NON EMPTY { {[COMMITDATE].[D Year].Members} * { [PART].[P Category].[MFGR#12].Children } } ON ROWS FROM [LINEORDER] WHERE [SUPPLIER].[S Region].[AMERICA]	• [PART].[P BRAND1] • [SUPPLIER].[S City] • [COMMITDATE].[D Year]	*and p_category = 'MFGR#12' and s_region = 'AMERICA'*	**MQ2.1** = 8.0e-3
7.	WITH MEMBER [Measures].[Profit] AS '[Measures].[Lo Revenue] - [Measures].[Lo Supplycost]' SELECT NON EMPTY { { {[Measures].[Profit]} } } ON COLUMNS, NON EMPTY { {[DATE].[D Year].[1997], [DATE].[D Year].[1998]} * {[SUPPLIER].[S Nation].[UNITED STATES].Children} * {[PART].[P Category].[MFGR#14].Children} } ON ROWS FROM [LINEORDER]	• [PART].[P BRAND1] • [SUPPLIER].[S City] • [DATE].[D Year]	*and c_region = 'AMERICA' and s_nation = 'UNITED STATES' and (d_year = 1997 or d_year = 1998) and p_category = 'MFGR#14'*	**Q4.3** = 9.1e-5
8.	SELECT NON EMPTY { { {[Measures].[Lo Revenue]} } } ON COLUMNS, NON EMPTY { {[DATE].[D Year].Members} * { [PART].[P Brand1].[MFGR#2239]} } ON ROWS FROM [LINEORDER] WHERE [SUPPLIER].[S Region].[EUROPE]	• [PART].[BRAND1] • [SUPPLIER].[S REGION] • [DATE].[D YEAR]	*and p_brand1 = 'MFGR#2221' and s_region = 'EUROPE'*	**Q2.3** = 2.0e-4

4 Dimensões por Consulta (8)			
MDX	**Níveis Envolvidos**	**Filtros**	**Seletividade**
1. SELECT [Measures].[Lo Revenue] ON 0, {[PART].[P MFGR].[MFGR#3]. Children}* {[SUPPLIER].[S NATION].[BRAZIL]. Children } *{[DATE].[D YEAR].[1994].Children } * {[COMMITDATE.SEASON MONTH].[D SEASON].[Winter].Children} ON 1 FROM [LINEORDER]	• [PART].[P CATEGORY] • [SUPPLIER].[S CITY] • [DATE].[D YEARMONTH] • COMMITDATE.SEASON MONTH].[D MONTH]	*p_mfgr = 'MFGR#3' and s_nation = 'BRAZIL' AND d_year = '1994' AND d_sellingseason = 'Winter'*	2.2e-4

2.	SELECT [Measures].[Lo Revenue] ON 0, {[PART].[P CATEGORY].[MFGR#11]. Children} * {[SUPPLIER].[S CITY].[BRAZIL 4]. Children} * {[DATE].[D YEAR].[1994].Children } * {[COMMITDATE.SEASON MONTH].[D SEASON].[Winter].Children} ON 1 FROM [LINEORDER]	• [PART].[P BRAND1] • [SUPPLIER].[S NAME] • [DATE].[D YEARMONTH] • [COMMITDATE.SEASON MONTH].[D MONTH]	*p_category = 'MFGR#11' and s_city = 'BRAZIL 4' AND d_year = '1994' AND d_sellingseason = 'Winter'*	4.5e-6
3.	SELECT [Measures].[Lo Revenue] ON 0, {[SUPPLIER].[S NATION].[BRAZIL]. Children}*{ [CUSTOMER].[C CITY].[CHINA 5].Children } *{[DATE].[D YEAR].[1994].Children} * {[COMMITDATE.SEASON MONTH].[D SEASON].[Winter].Children} ON 1 FROM [LINEORDER]	• [CUSTOMER].[C NAME] • [SUPPLIER].[S CITY] • [DATE].[D YEARMONTH] • [COMMITDATE.SEASON MONTH].[D MONTH]	*s_nation = 'BRAZIL' and c_city = 'CHINA 5' AND d_year = '1994' and d_sellingseason = 'Winter'*	4.5e-6
4.	SELECT [Measures].[Lo Revenue] ON 0, {[SUPPLIER].[S CITY].[BRAZIL 4]. Children}*{[CUSTOMER].[C NATION].[CHINA].Children} *{[DATE].[D YEAR].[1994].Children } * {[COMMITDATE.SEASON MONTH].[D SEASON].[Winter].Children} ON 1 FROM [LINEORDER]	• [CUSTOMER].[C CITY] • [SUPPLIER].[S NAME] • [DATE].[D YEARMONTH] • [COMMITDATE.SEASON MONTH].[D MONTH]	*s_city = 'BRAZIL 4' and c_nation = 'CHINA' AND d_year = '1994' and d_sellingseason = 'Winter'*	4.5e-6
5.	WITH MEMBER [Measures].[Profit] AS ' Sum ({ [PART].[P Mfgr].[MFGR#1] , [PART].[P Mfgr].[MFGR#2] } , [Measures].[Lo Revenue] - [Measures].[Lo Supplycost]) ' SELECT NON EMPTY { [Measures].[Profit] } ON COLUMNS, NON EMPTY { { {[COMMITDATE.SEASON MONTH].[D SEASON].Members} * {[CUSTOMER].[C Region].[AMERICA].Children} } } ON ROWS FROM [LINEORDER] WHERE [SUPPLIER].[S Region].[AMERICA]	[PART].[P Mfgr] [CUSTOMER].[S Nation] [SUPPLIER].[S Region] [COMMITDATE.SEASON MONTH].[D SEASON]	*and c_region = 'AMERICA' and s_region = 'AMERICA' and (p_mfgr = 'MFGR#1' or p_mfgr = 'MFGR#2')*	**MQ4.1** = 1.6e-2
6.	SELECT [Measures].[Lo Revenue] ON 0, {[CUSTOMER].[C REGION].[EUROPE].Children} * { [DATE.DATE WEEKNUMINYEAR].[D Year].[1994].[6] } *{[PART].[P MFGR].[MFGR#3]. Children} * { [SUPPLIER].[S NATION].[BRAZIL]. Children } ON 1 FROM [LINEORDER]	• [PART].[P CATEGORY] • [CUSTOMER].[C NATION] • [SUPPLIER].[S CITY] • [DATE.DATE WEEKNUMINYEAR].[D WEEKNUMINYEAR]	*c_region = 'EUROPE' and* d_weeknuminyear = 6 and *d_year = '1994'* and *p_mfgr = 'MFGR#3'* and *s_nation = 'BRAZIL'*	4,31e-6
7.	WITH MEMBER [Measures].[Profit] AS ' Sum ({ [PART].[P Mfgr].[MFGR#1] , [PART].[P	[PART].[P Mfgr] [CUSTOMER].[S Nation]	*and c_region = 'AMERICA' and s_region = 'AMERICA' and (p_mfgr*	**Q4.1** = 1.6e-2

	Mfgr].[MFGR#2] } , [Measures].[Lo Revenue] - [Measures].[Lo Supplycost]) ' SELECT NON EMPTY { [Measures].[Profit] } ON COLUMNS, NON EMPTY { { {[DATE].[D Year].Members} * {[CUSTOMER].[C Region].[AMERICA].Children} } } ON ROWS FROM [LINEORDER] WHERE [SUPPLIER].[S Region].[AMERICA]	[SUPPLIER].[S Region] [DATE].[D Year]	*= 'MFGR#1' or p_mfgr = 'MFGR#2')*	
8.	WITH MEMBER [Measures].[Profit] AS '[Measures].[Lo Revenue] - [Measures].[Lo Supplycost]' SELECT NON EMPTY { { {[Measures].[Profit]} } } ON COLUMNS, NON EMPTY { {[DATE].[D Year].[1997], [DATE].[D Year].[1998]} * {[SUPPLIER].[S Region].[AMERICA].Children} * {[PART].[P Mfgr].[MFGR#1].Children,[PART].[P Mfgr].[MFGR#2].Children } } ON ROWS FROM [LINEORDER] WHERE [CUSTOMER].[C Region].[AMERICA]	[PART].[P Category] [SUPPLIER].[S Nation] [CUSTOMER].[S Region] [DATE].[D Year]	*and c_region = 'AMERICA'* *and s_region = 'AMERICA'* *and (d_year = 1997 or d_year = 1998)* *and (p_mfgr = 'MFGR#1'* *or p_mfgr = 'MFGR#2')*	**Q4.2** = 4.6e-3