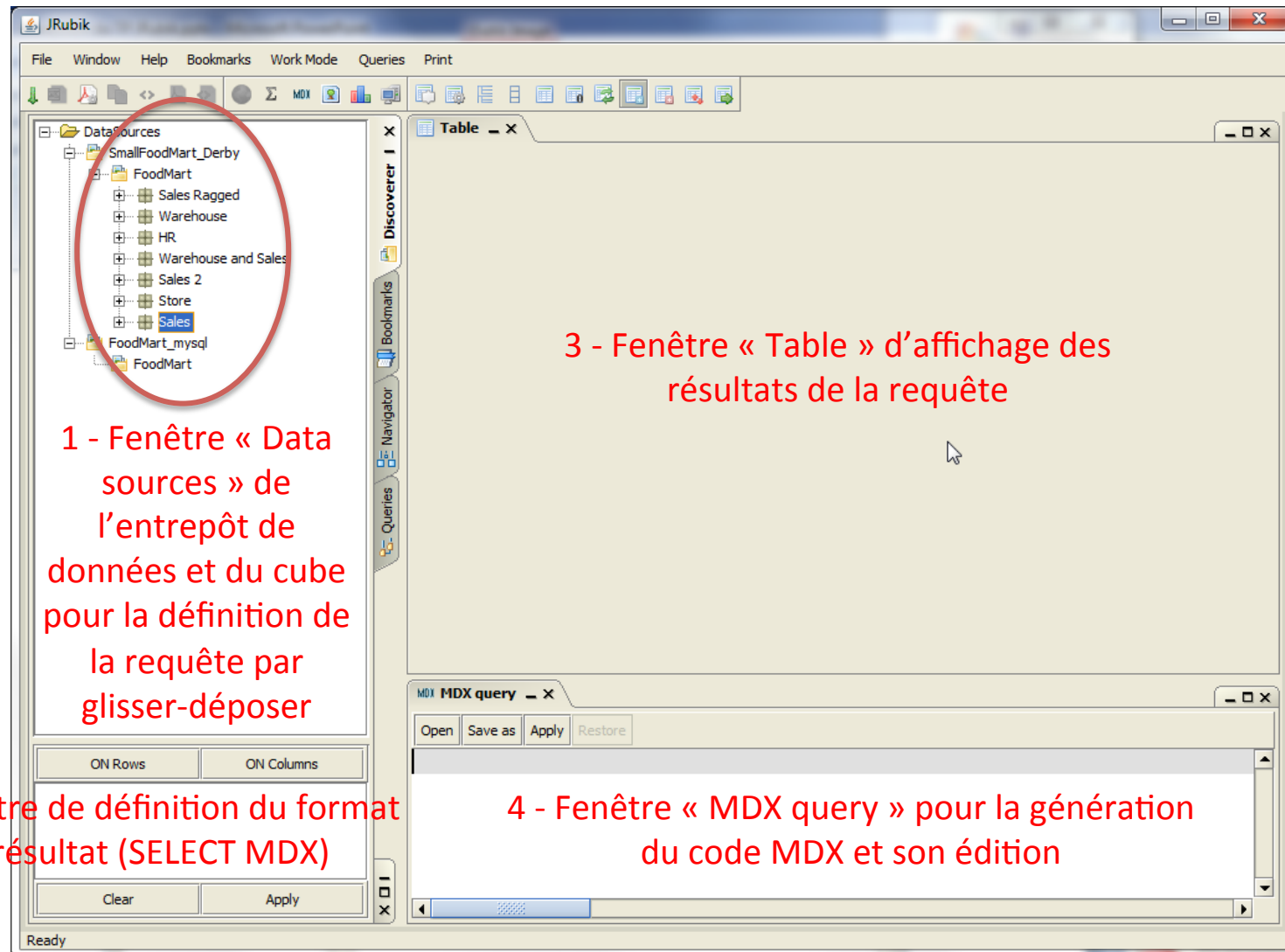


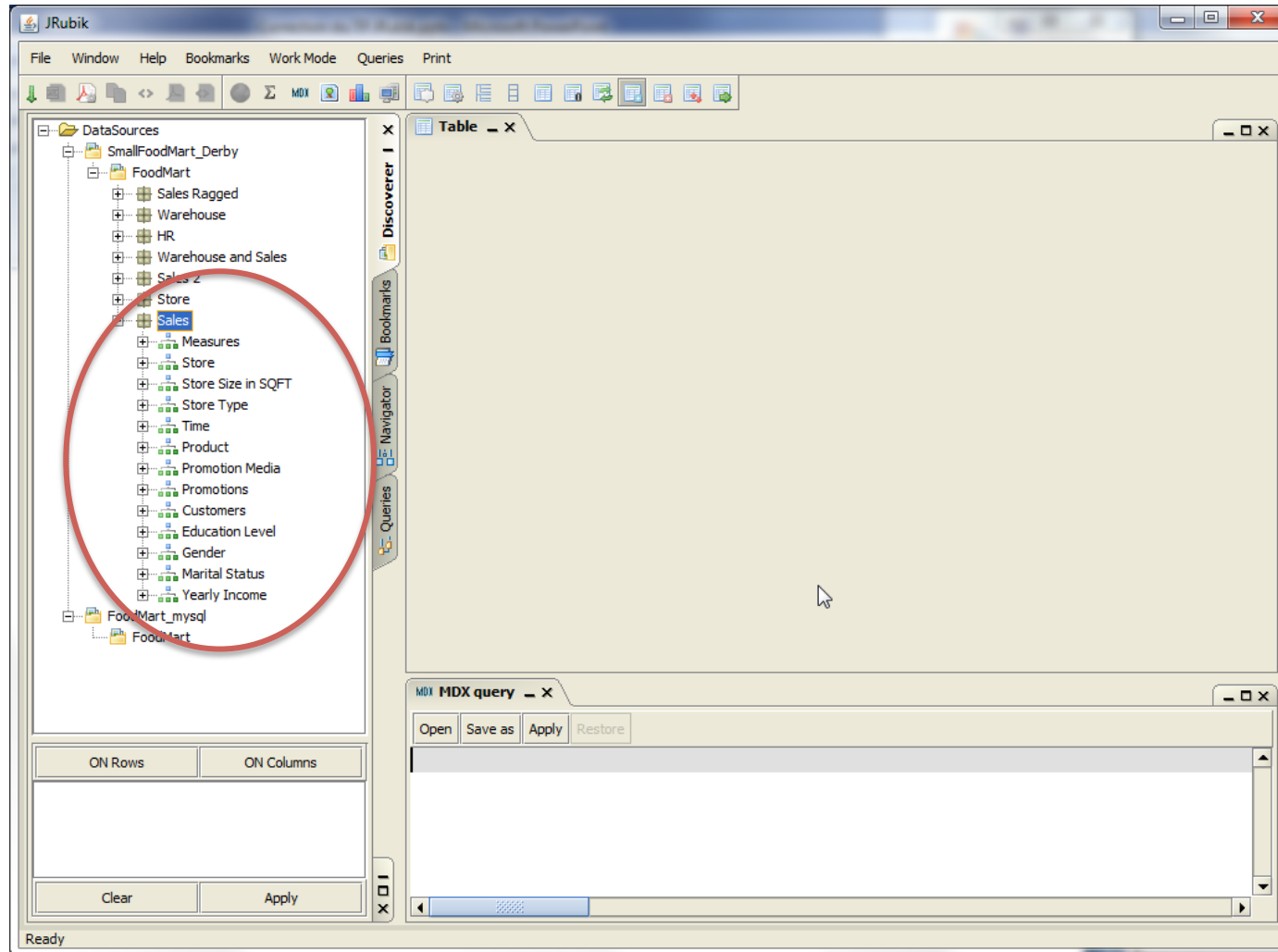
# Utilisation de Jrubik en 20 figures

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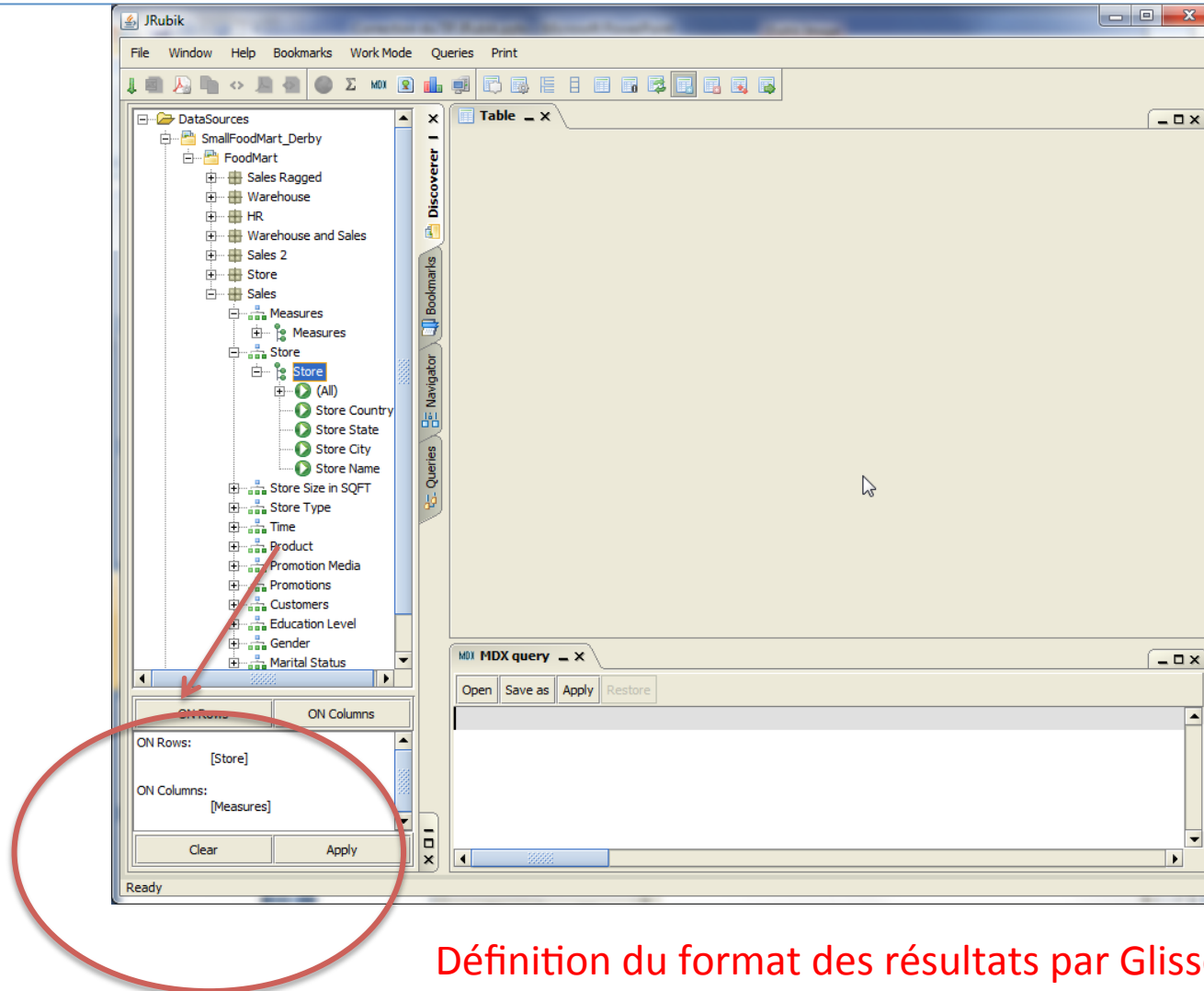
# 1 – Fenêtres de Jrubik



## 2 – Définition du Cube « sales »



### 3. Définition du format des résultats (SELECT MDX)



Définition du format des résultats par Glisser-Déposer

## 4 – Exécution de la requête

The screenshot shows the JRubik software interface. On the left is a tree view of data sources. The main area is divided into two windows: 'Table' and 'MDX query'. The 'Table' window displays the results of the query, and the 'MDX query' window shows the query code. Red circles highlight the 'Table' window and the 'Apply' button in the 'MDX query' window.

Store	Unit Sales
+ All Stores	49 339

```
select {[Measures].[Unit Sales]}
ON COLUMNS,
  Hierarchize({[Store].[All Stores]})
ON ROWS
from [Sales]
```

Affichage des résultats de la requête dans la fenêtre « Table »

Génération du code MDX dans la fenêtre du code MDX (éditeur)

Exécution de la requête (Apply)

## 5 – Fenêtre MDX et fenêtre de résultats

The screenshot shows the JRubik software interface. On the left is a tree view of data sources. The main area is divided into two windows:

- Table**: A window displaying a table of results with columns 'Store' and 'Unit Sales'. The data is as follows:

Store	Unit Sales
All Stores	49 339
Canada	
BC	
Mexico	
DF	
Guerrero	
Jalisco	
Veracruz	
Yucatan	
Zacatecas	
USA	49 339
CA	14 221
OR	12 568
WA	22 550

- MDX query**: A window displaying the following MDX query:

```
select {[Measures].[Unit Sales]}
ON COLUMNS,
  Hierarchize (Union (Union (Union (Union ([Store].[All Stores],
[Store].[All Stores].Children),
[Store].[All Stores].[Mexico].Children),
[Store].[All Stores].[USA].Children),
[Store].[All Stores].[Canada].Children))
ON ROWS
from [Sales]
```

Two red arrows point from the text on the right to the 'Table' and 'MDX query' windows, indicating that the query in the MDX window is reflected in the results table.

La fenêtre « MDX query » reflète les modifications qui sont faites dans la fenêtre de résultats « table » et inversement

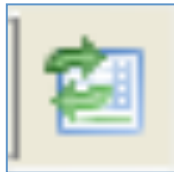
## 6 – Interaction entre fenêtres « Table » et « MDX query »

The screenshot shows two windows from a Business Intelligence tool. The top window, titled 'Table', displays a table with two columns: 'Store' and 'Unit Sales'. The data is hierarchical, showing sales for various regions and specific stores. The bottom window, titled 'MDX query', contains an MDX script that uses the 'Hierarchize' function to generate the same hierarchy as shown in the table.

Store	Unit Sales
All Stores	49 339
Canada	
BC	
Vancouver	
Store 19	
Victoria	
Store 20	
Mexico	
USA	49 339
CA	14 221
Alameda	
HQ	
Beverly Hills	4 051
Store 6	4 051
Los Angeles	4 876
San Diego	4 886
San Francisco	408
Store 14	408
OR	12 568
Portland	4 837
Salem	7 731

```
select {[Measures].[Unit Sales]}
ON COLUMNS,
  Hierarchize (Union (Union (Union (Union (Union (Union (Union (Union (Union (Union (Unio
[Store].[All Stores].Children),
[Store].[All Stores].[Canada].Children),
[Store].[All Stores].[USA].Children),
[Store].[All Stores].[USA].[CA].Children),
[Store].[All Stores].[USA].[CA].[Alameda].Children),
[Store].[All Stores].[Canada].[BC].Children),
[Store].[All Stores].[Canada].[BC].[Victoria].Children),
[Store].[All Stores].[USA].[CA].[Beverly Hills].Children),
[Store].[All Stores].[Canada].[BC].[Vancouver].Children),
[Store].[All Stores].[USA].[CA].[San Francisco].Children),
[Store].[All Stores].[USA].[OR].Children),
[Store].[All Stores].[USA].[OR].[Salem].Children)
ON ROWS
from [Sales]
```

## 7 – Permutation d'axes d'analyse: PIVOT



			Product			
Store	Mesures	Education Level	- All Products	+ Drink	+ Food	+ Non-Consumable
- All Stores	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300
+ Canada	Unit Sales	+ All Education Levels				
+ Mexico	Unit Sales	+ All Education Levels				
+ USA	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300



				↑ Store		
				↓ Canada	↓ Mexico	↓ USA
				Unit Sales	Unit Sales	Unit Sales
				Education Level	Education Level	Education Level
↑ Product	↓ All Education Levels	↓ All Education Levels	↓ All Education Levels			
↓ All Products						49 339
↓ Drink						4 493
↓ Food						35 546
↓ Non-Consumable						9 300



## 8 – Mode DRILL DOWN (1)



Table - X			Product			
Store	Mesures	Education Level	- All Products	+ Drink	+ Food	+ Non-Consumable
- All Stores	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300
+ Canada	Unit Sales	+ All Education Levels				
+ Mexico	Unit Sales	+ All Education Levels				
+ USA	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300

Mode DRILL:

- Quand on clique sur + on descend dans l'arborescence .
- On n'ouvre le niveau que localement.
- Ici on ne « descend » que sur "USA".



Table - X			Product			
Store	Mesures	Education Level	- All Products	+ Drink	+ Food	+ Non-Consumable
+ Canada	Unit Sales	+ All Education Levels				
+ Mexico	Unit Sales	+ All Education Levels				
+ USA	Unit Sales	- All Education Levels	49 339	4 493	35 546	9 300
		Bachelors Degree	13 301	1 198	9 513	2 590
		Graduate Degree	2 635	229	1 950	456
		High School Degree	14 380	1 291	10 367	2 722
		Partial College	4 997	487	3 617	893
		Partial High School	14 026	1 288	10 099	2 639

## 9 - Mode DRILL DOWN (2)



Table - X			Product			
Store	Mesures	Education Level	- All Products	+ Drink	+ Food	+ Non-Consumable
- All Stores	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300
+ Canada	Unit Sales	+ All Education Levels				
+ Mexico	Unit Sales	+ All Education Levels				
+ USA	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300



Table - X			Product			
Store	Mesures	Education Level	- All Products	+ Drink	+ Food	+ Non-Consumable
+ Canada	Unit Sales	- All Education Levels				
		Bachelors Degree				
		Graduate Degree				
		High School Degree				
		Partial College				
+ Mexico	Unit Sales	- All Education Levels				
		Bachelors Degree				
		Graduate Degree				
		High School Degree				
		Partial College				
+ USA	Unit Sales	- All Education Levels	49 339	4 493	35 546	9 300
		Bachelors Degree	13 301	1 198	9 513	2 590
		Graduate Degree	2 635	229	1 950	456
		High School Degree	14 380	1 291	10 367	2 722
		Partial College	4 997	487	3 617	893
		Partial High School	14 026	1 288	10 099	2 639

- Quand on clique sur + on descend dans l'arborescence .
- On ouvre tous les niveaux.

## 10 – Mode DRILL DOWN (3)



Table - X			Product			
Store	Mesures	Education Level	- All Products	+ Drink	+ Food	+ Non-Consumable
- All Stores	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300
+ Canada	Unit Sales	+ All Education Levels				
+ Mexico	Unit Sales	+ All Education Levels				
+ USA	Unit Sales	+ All Education Levels	49 339	4 493	35 546	9 300



- Le niveau qui est ouvert disparaît ... (ici All Education Levels)
- On perd le récapitulatif.

Table - X			↑ Product			
↑ Store	Mesures	↑ Education Level	↓ All Products	↓ Drink	↓ Food	↓ Non-Consumable
↓ Canada	Unit Sales	Bachelors Degree				
		Graduate Degree				
		High School Degree				
		Partial College				
		Partial High School				
↓ Mexico	Unit Sales	Bachelors Degree				
		Graduate Degree				
		High School Degree				
		Partial College				
		Partial High School				
↓ USA	Unit Sales	Bachelors Degree	13 301	1 198	9 513	2 590
		Graduate Degree	2 635	229	1 950	456
		High School Degree	14 380	1 291	10 367	2 722
		Partial College	4 997	487	3 617	893
		Partial High School	14 026	1 288	10 099	2 639

# 11 – Zoom au niveau des données

Table - X			↑ Product			
↑ Store	Mesures	↑ Education Level	↓ All Products	↓ Drink	↓ Food	↓ Non-Consumable
↓ Canada	Unit Sales	Bachelors Degree	↓	↓	↓	↓
		Graduate Degree	↓	↓	↓	↓
		High School Degree	↓	↓	↓	↓
		Partial College	↓	↓	↓	↓
		Partial High School	↓	↓	↓	↓
↓ Mexico	Unit Sales	Bachelors Degree	↓	↓	↓	↓
		Graduate Degree	↓	↓	↓	↓
		High School Degree	↓	↓	↓	↓
		Partial College	↓	↓	↓	↓
		Partial High School	↓	↓	↓	↓
↓ USA	Unit Sales	Bachelors Degree	↓ 13 301	↓ 1 198	↓ 9 513	↓ 2 590
		Graduate Degree	↓ 2 635	↓ 29	↓ 1 950	↓ 456
		High School Degree	↓ 14 380	↓ 1 291	↓ 10 367	↓ 2 722
		Partial College	↓ 4 997	↓ 487	↓ 3 617	↓ 893
		Partial High School	↓ 14 026	↓ 1 288	↓ 10 099	↓ 2 639



Zoom au niveau des données



Store Name	Store City	Store State	Store Country	Store Sqft	Store Type	Month	Quarter	Year	Product
Store 7	Los Angeles	CA	USA	23 598	Supermarket	7	Q3	1 997	Excellent
Store 13	Salem	OR	USA	27 694	Deluxe Supermarket	7	Q3	1 997	Excellent
Store 6	Beverly Hills	CA	USA	23 688	Gourmet Supermarket	4	Q2	1 997	Token Co
Store 6	Beverly Hills	CA	USA	23 688	Gourmet Supermarket	6	Q2	1 997	Token Co
Store 15	Seattle	WA	USA	21 215	Supermarket	7	Q3	1 997	Token Co
Store 13	Salem	OR	USA	27 694	Deluxe Supermarket	7	Q3	1 997	Token Die
Store 15	Seattle	WA	USA	21 215	Supermarket	6	Q2	1 997	Fabulous
Store 7	Los Angeles	CA	USA	23 598	Supermarket	6	Q2	1 997	Fabulous
Store 15	Seattle	WA	USA	21 215	Supermarket	7	Q3	1 997	Fabulous
Store 6	Beverly Hills	CA	USA	23 688	Gourmet Supermarket	4	Q2	1 997	Washingt
Store 16	Spokane	WA	USA	30 268	Supermarket	7	Q3	1 997	Washingt
Store 11	Portland	OR	USA	20 319	Supermarket	7	Q3	1 997	Excellent
Store 16	Spokane	WA	USA	30 268	Supermarket	4	Q2	1 997	Excellent
Store 11	Portland	OR	USA	20 319	Supermarket	12	Q4	1 997	Excellent
Store 13	Salem	OR	USA	27 694	Deluxe Supermarket	9	Q3	1 997	Token Or
Store 15	Seattle	WA	USA	21 215	Supermarket	6	Q2	1 997	Fabulous
Store 13	Salem	OR	USA	27 694	Deluxe Supermarket	3	Q1	1 997	Skinner O
Store 7	Los Angeles	CA	USA	23 598	Supermarket	2	Q1	1 997	Good Ligh
Store 11	Portland	OR	USA	20 319	Supermarket	6	Q2	1 997	Good Ligh
Store 11	Portland	OR	USA	20 319	Supermarket	2	Q1	1 997	Pearl Ligh
Store 7	Los Angeles	CA	USA	23 598	Supermarket	12	Q4	1 997	Portsmou
Store 16	Spokane	WA	USA	30 268	Supermarket	8	Q3	1 997	Top Meas
Store 14	San Francisco	CA	USA	22 478	Small Grocery	6	Q2	1 997	Top Meas
Store 15	Seattle	WA	USA	21 215	Supermarket	9	Q3	1 997	Good Cha
Store 13	Salem	OR	USA	27 694	Deluxe Supermarket	8	Q3	1 997	Good Whi
Store 3	Bremerton	WA	USA	39 696	Supermarket	6	Q2	1 997	Walrus Cl
Store 3	Bremerton	WA	USA	39 696	Supermarket	4	Q2	1 997	Walrus Cl

## 12 – Permutation lignes/colonnes (1)

The screenshot shows the JRubik software interface. On the left, a tree view displays the data source structure for 'SmallFoodMart\_Derby', including 'FoodMart', 'Sales Ragged', 'Warehouse', 'HR', 'Warehouse and Sales', 'Sales 2', 'Store', 'Sales', 'Measures', and 'MeasuresLevel'. The 'MeasuresLevel' folder is expanded, showing 'Unit Sales', 'Store Cost', 'Store Sales', 'Sales Count', and 'Customer Count'. Below the tree are buttons for 'ON Rows', 'ON Columns', 'Clear', and 'Apply'. The main area is divided into two panes. The top pane, titled 'Table', displays a table with two columns: 'Store Type' and 'Unit Sales'. The first row shows 'All Store Types' and a value of 49,339. The bottom pane, titled 'MDX query', contains the following query:

```
select {[Measures]}  
ON COLUMNS,  
    {[Store Type]}  
ON ROWS  
from [Sales]
```

- En colonne : Measures
- En Ligne : Store Type

## 13 – Permutation lignes/colonnes (2)

The screenshot shows the JRubik software interface. On the left is a tree view of data sources under 'SmallFoodMart\_Derby'. The 'Measures' folder is expanded, showing 'Unit Sales', 'Store Cost', 'Store Sales', 'Sales Count', and 'Customer Co'. The 'Time' folder is also expanded, showing 'Year', 'Quarter', 'Month', '(All)', 'All Time.Weeklys', 'Week', and 'Day'. The 'Product' folder is partially visible. Below the tree are 'ON Rows' and 'ON Columns' buttons. The main window is titled 'Table' and displays a table with three columns: 'Product', 'Time', and 'Unit Sales'. The first row contains 'All Products', 'All Time.Weeklys', and '49 339'. Below the table is an 'MDX query' editor with the following text:

```
select {[Measures].[Unit Sales]}
ON COLUMNS,
  {[Product].[All Products],
 [Time.Weekly].[All Time.Weeklys]}
ON ROWS
from [Sales]
```

At the bottom of the interface are 'Clear' and 'Apply' buttons.

- En ligne : Product, Time
- En colonne : Measures

## 14 – Exemple de requêtes MDX (1)

---

- Q1: Unités de produits vendues au cours du 1<sup>er</sup> trimestre 2017

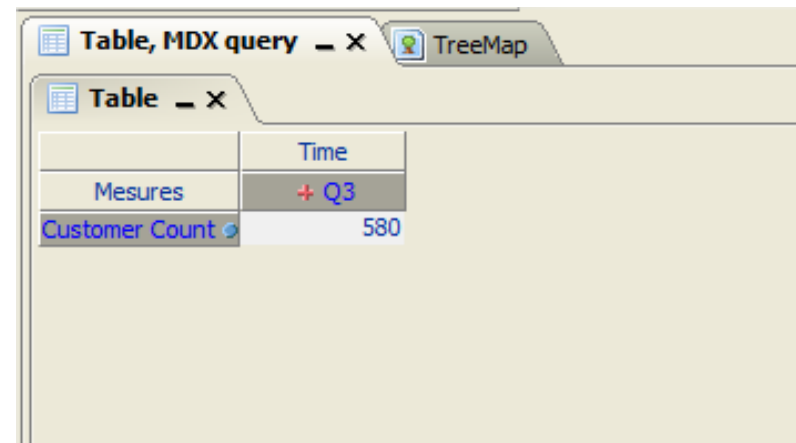
```
SELECT {[Time].[2017].[Q1]}  
ON COLUMNS,  
    {[Product].[All Products]}  
ON ROWS  
FROM [Sales]
```

## 15 – Exemple de requêtes MDX (2)

---

- Q2: Nombre de clients au cours du 3<sup>ème</sup> trimestre 2017

```
SELECT {[Time].[2017].[Q3]}  
ON COLUMNS,  
    {[Measures].[Customer Count]}  
ON ROWS  
FROM [Sales]
```



The screenshot shows a software interface with a window titled "Table, MDX query" and a "TreeMap" icon. Below the title bar is a tab labeled "Table". The main area displays a table with two columns: "Time" and "Mesures". The "Time" column has a value of "+ Q3". The "Mesures" column has a value of "580".

	Time
Mesures	+ Q3
Customer Count	580



## 16 – Exemple de requêtes MDX (3)

---

- Q3: Nombre de produits vendus dans des supermarchés (Supermaret) au 2<sup>ième</sup> trimestre 2017

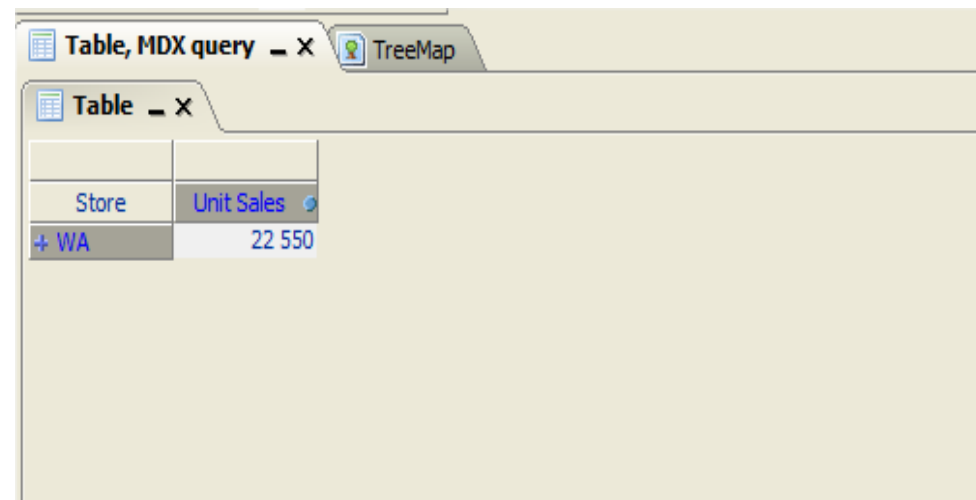
```
SELECT {[Time].[2017].[Q2]}  
ON COLUMNS,  
    {[Measures].[Sales Count]}  
ON ROWS  
FROM [Sales]
```

## 17 – Exemple de requêtes MDX (4)

---

- Q4: Nombre de produits vendus dans des supermarchés (Supermarket) dans l'état de l'Ouest (WA) des USA

```
SELECT {[Measures].[Unit Sales]}  
ON COLUMNS,  
  {[Store].[All Stores].[USA].[WA]}  
ON ROWS  
FROM [Sales]
```



The screenshot shows a BI tool interface with two tabs: 'Table, MDX query' and 'TreeMap'. The 'Table, MDX query' tab is active and displays a table with the following data:

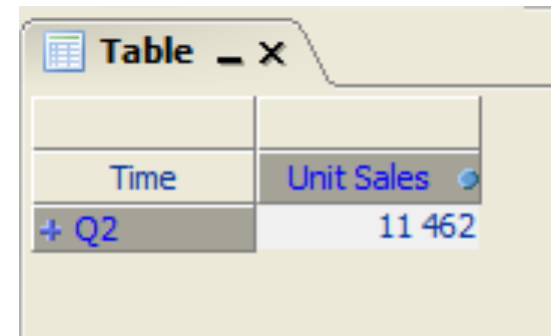
Store	Unit Sales
+ WA	22 550

## 18 – Exemple de requêtes MDX (5)

---

- Q5: Nombre de produits vendus dans des supermarchés (Supermarket) dans l'état de l'Ouest (WA) des USA au 2<sup>ème</sup> trimestre 2017

```
SELECT {[Measures].[Unit Sales]}  
ON COLUMNS,  
    {[Time].[2017].[Q2]}  
ON ROWS  
FROM [Sales]
```



Time	Unit Sales
+ Q2	11 462