

Chapter 03:

OLAP Operations

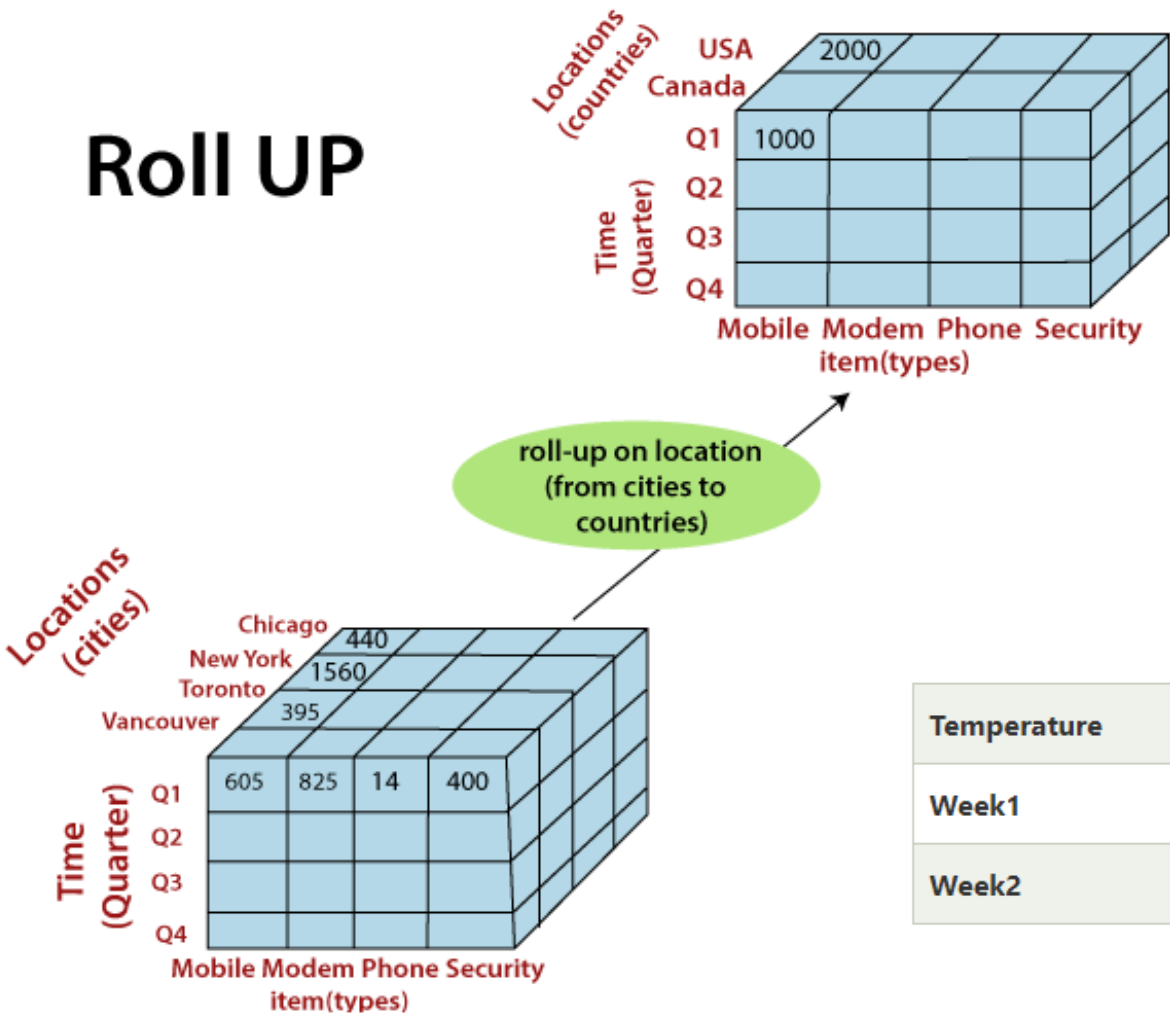
in the Multidimensional Data Model

ROLL-UP / DRILL - UP

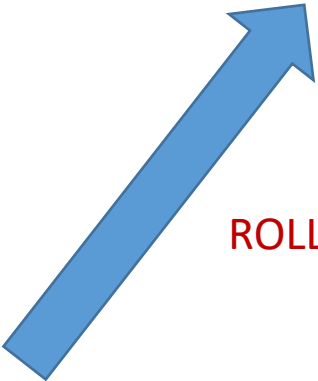
ZOOMING-OUT the CUBE

- Use the concept of hierarchy
 - High data abstraction

Roll UP



Temperature	cool	mild	hot
Week1	2	1	1
Week2	2	1	1



ROLL-UP ON TEMPERATURE to CATEGORY

Temperature	64	65	68	69	70	71	72	75	80	81	83	85
Week1	1	0	1	0	1	0	0	0	0	0	1	0
Week2	0	0	0	1	0	0	1	2	0	1	0	0

ROLL-UP ON [DIMENSION] TO [DIMENSION.LEVEL]

DRILL-DOWN

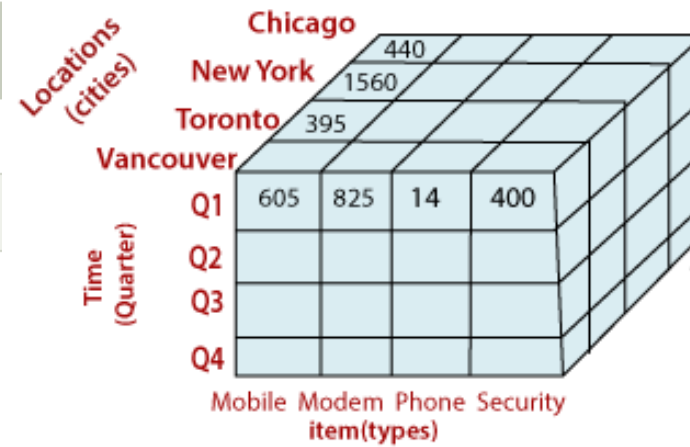
ZOOMING-IN the CUBE

- Reverse of ROLL-UP
- Low data abstraction (data is drilled down)

Temperature	cool	mild	hot
Week1	2	1	1
Week2	2	1	1

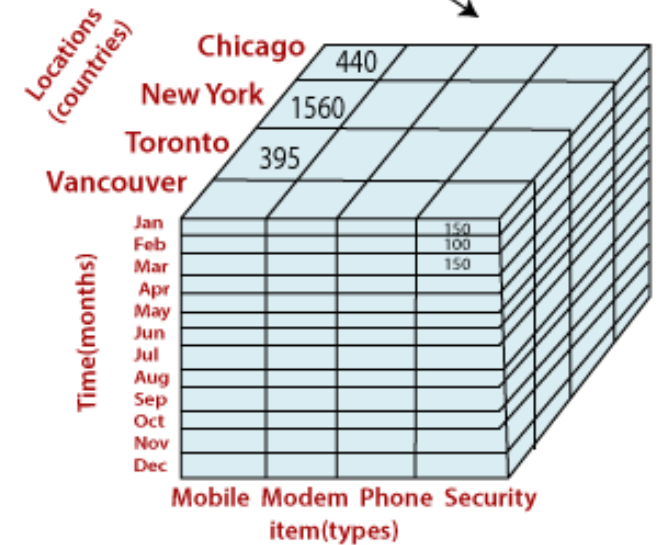
DRILL-DOWN ON WEEK to DAY

Temperature	cool	mild	hot
Day 1	0	0	0
Day 2	0	0	0
Day 3	0	0	1
Day 4	0	1	0
Day 5	1	0	0
Day 6	0	0	0



Drill Down

Drilldown on time(from quarters to month)



DRILL-DOWN ON [DIMENSION] TO [DIMENSION.LEVEL]

SLICING

DIVIDING/SUBSET of THE CUBE

SELECTION / FILTERING on ONE SINGLE VALUE of ONE DIMENSION

01 Condition & 01 Dimension

Temperature	cool	mild	hot
Day 1	0	0	0
Day 2	0	0	0
Day 3	0	0	1
Day 4	0	1	0
Day 5	1	0	0
Day 6	0	0	0

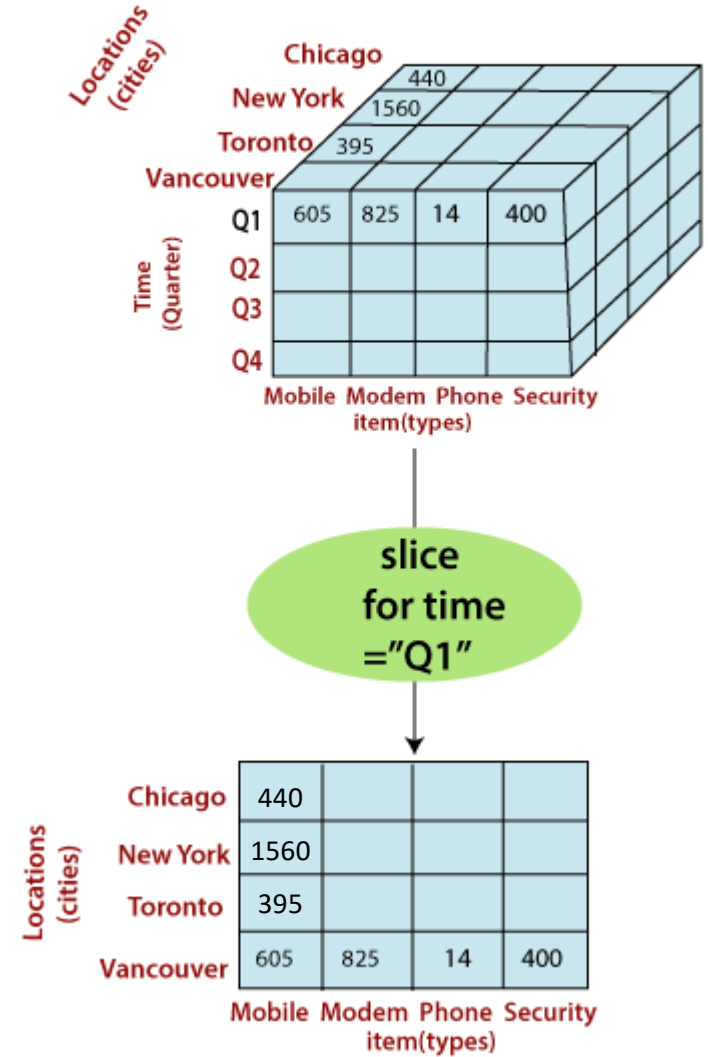


SLICE TEMPERATURE.CATEGORY = 'COOL'

Temperature	cool
Day 1	0
Day 2	0
Day 3	0
Day 4	0
Day 5	1
Day 6	1

SLICE [DIMENSION] = [VALUE]

Slice



DICING

DIVIDING / **SUBCUBE** of THE CUBE

SELECTION/FILTRING on SEVERAL VALUES of SEVERAL DIMENSIONS

'N' Conditions & 'N' Dimensions

Temperature	cool	mild	hot
Day 1	0	0	0
Day 2	0	0	0
Day 3	0	0	1
Day 4	0	1	0
Day 5	1	0	0
Day 6	0	0	0



DICE

(TEMPERATURE.CATEGORY = 'COOL' OR TEMPERATURE.CATEGORY = 'HOT')

AND

(TIME.DAY = 'DAY 3' OR TIME.DAY = 'DAY 4')

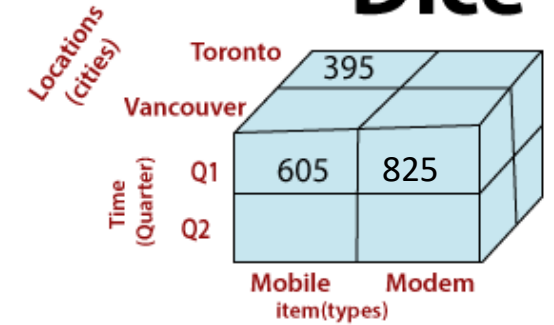
Temperature	cool	hot
Day 3	0	1
Day 4	0	0

DICE

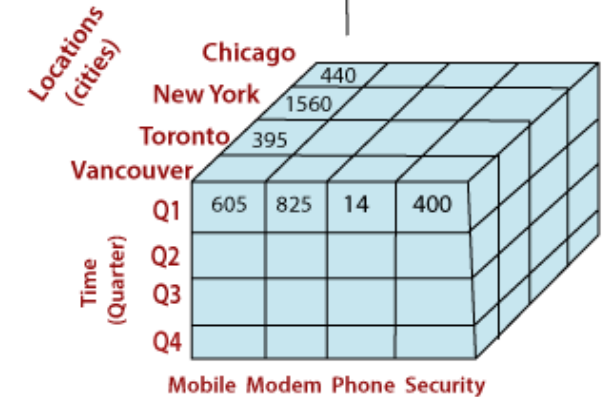
[DIMENSION₁] = [VALUE₁] OR/AND [DIMENSION₂] = [VALUE₂] OR/AND

..... OR/AND [DIMENSION_N] = [VALUE_N]

Dice



Dice for (location="Toronto" or "Vancouver") and (time="Q1" or "Q2") and (item="Mobile" or "Modem")



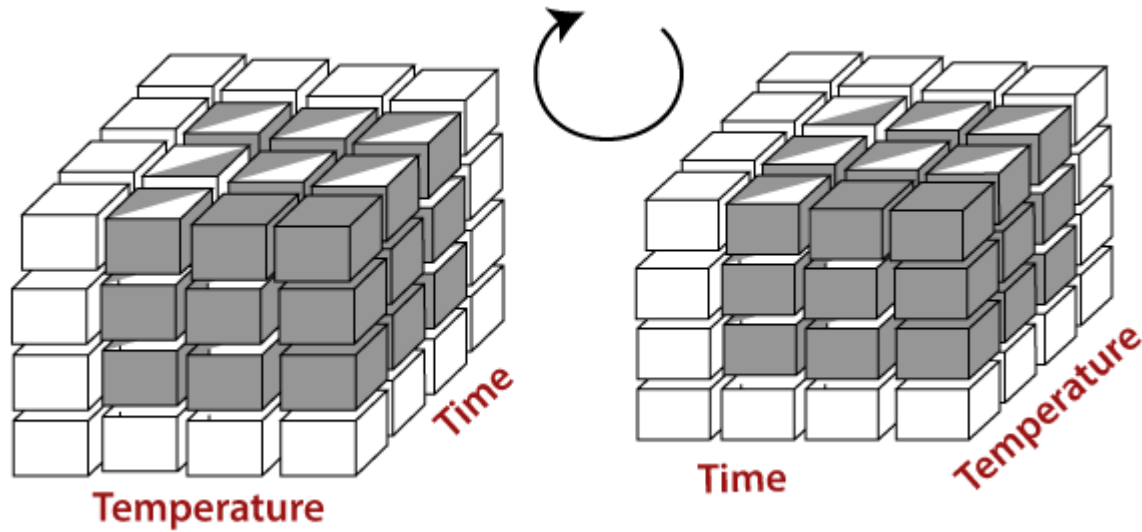
PIVOTING

ROTATION of THE CUBE

SWAP between DIMENSIONS

- Changing the axe of dimension

PIVOT (TEMPERATURE, TIME)



PIVOT ([DIMENSION₁] , [DIMENSION₂])

Pivot

Locations
(cities)

Chicago				
New York				
Toronto				
Vancouver	605	825	14	400
	Mobile	Modem	Phone	Security

item (types)



(ITEM , LOCATION)

Item
(types)

Mobile				605
Modem				825
Phone				14
Security				400
	Chicago	New York	Toronto	Vancouver

Location (cities)

Thank You

Chapter 3 : OLAP Operations
in the Multidimensional Data Model