



ONLINE ANALYTICAL PROCESSING

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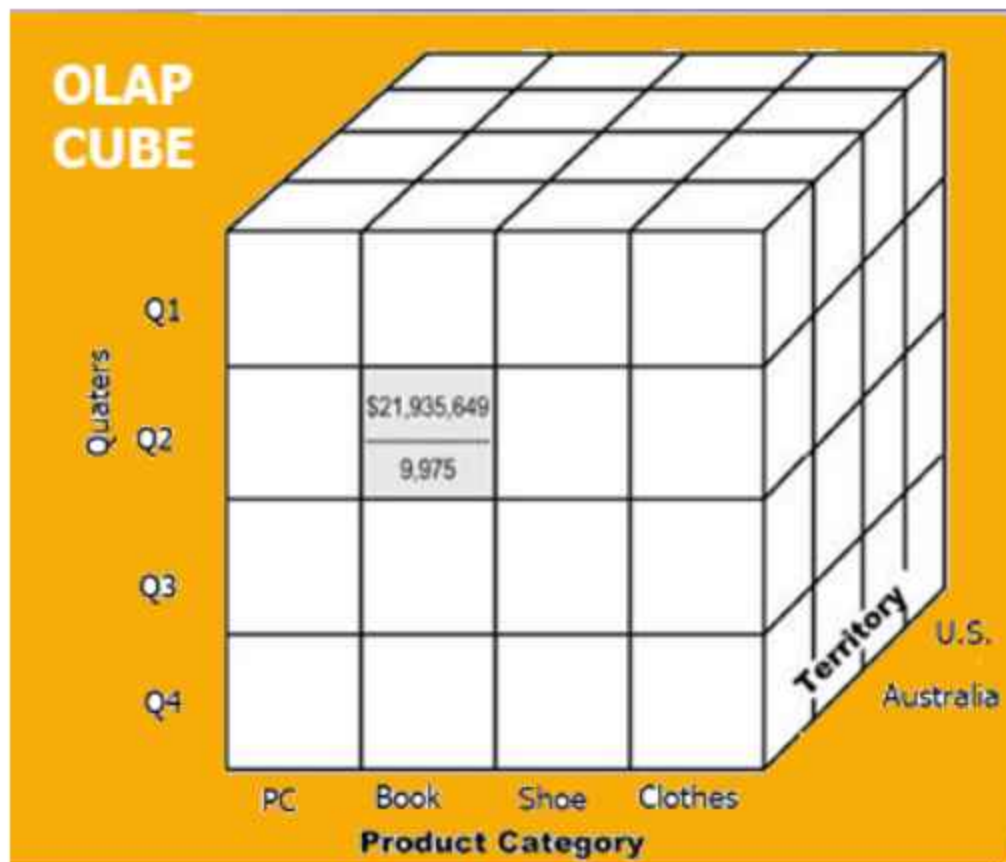


Introduction

- software that allows users to analyze information from multiple database systems at the same time.
- technology that enables analysts to extract and view business data from different points of view.
- Analysts frequently need to group, aggregate and join data. These operations in relational databases are resource intensive. With OLAP data can be pre-calculated and pre-aggregated, making analysis faster.
- OLAP databases are divided into one or more cubes.
- The cubes are designed in such a way that creating and viewing reports become easy.



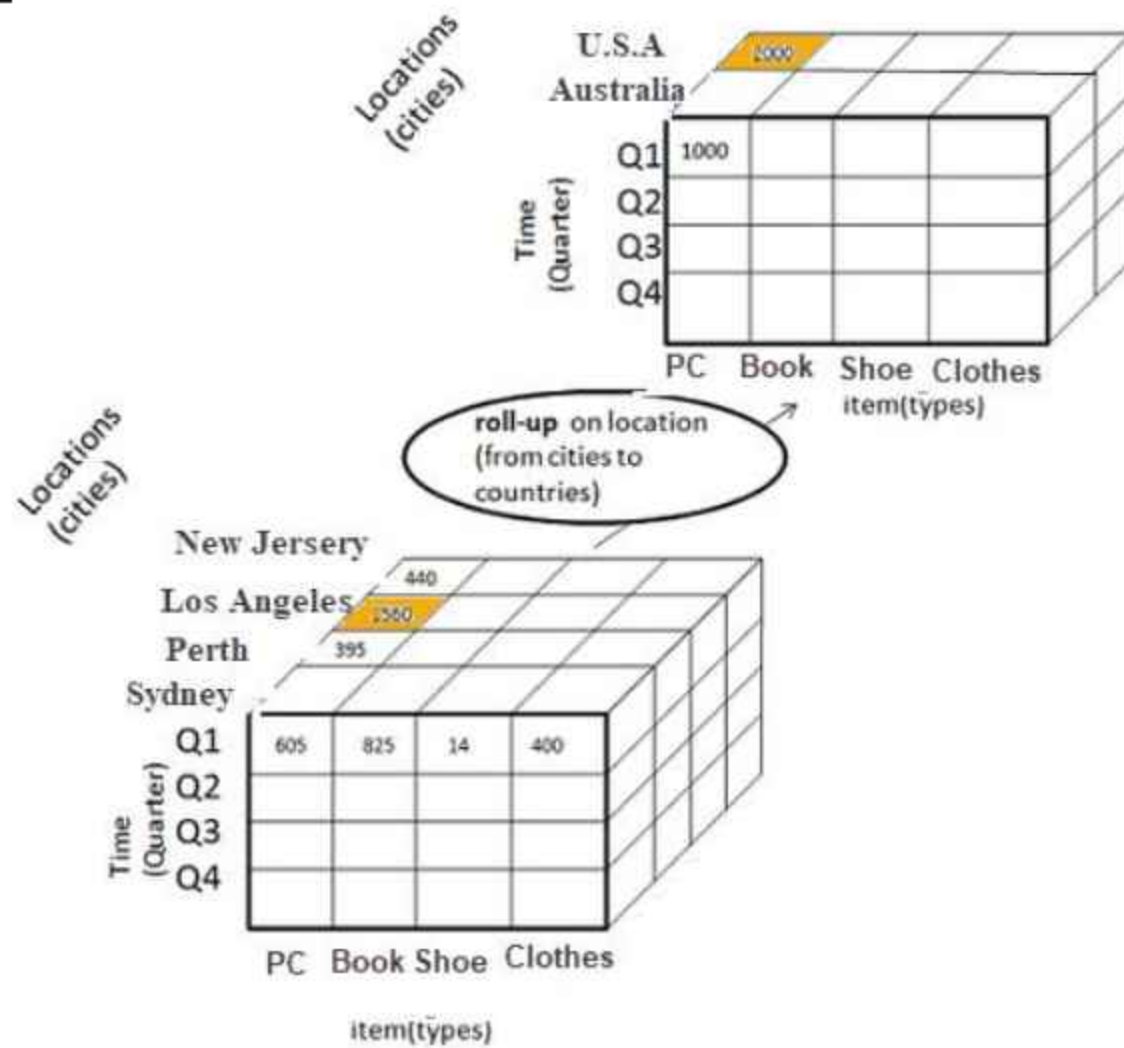
- The OLAP Cube consists of numeric facts called **measures** which are categorized by dimensions.
- OLAP Cube is also called the **hypercube**.
- <https://www.youtube.com/watch?v=2ryG3Jy6eIY>





Basic analytical operations of OLAP

- Four types of analytical operations in OLAP are:
 - Roll-up
 - Drill-down
 - Slice and dice
 - Pivot (rotate)





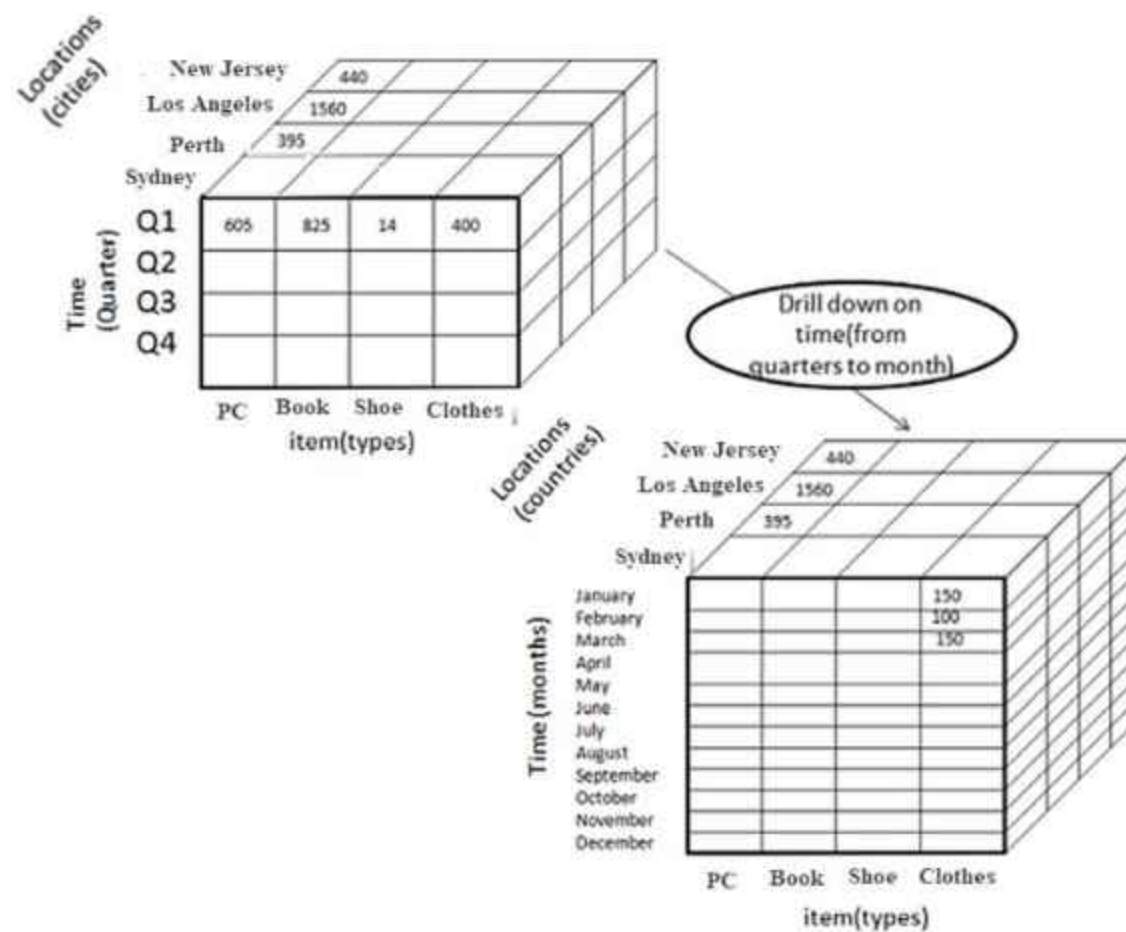
Roll-up:

- Roll-up is also known as "consolidation" or "aggregation."
- The Roll-up operation can be performed in 2 ways
 - Reducing dimensions
 - Climbing up concept hierarchy. Concept hierarchy is a system of grouping things based on their order or level.



Drill-down

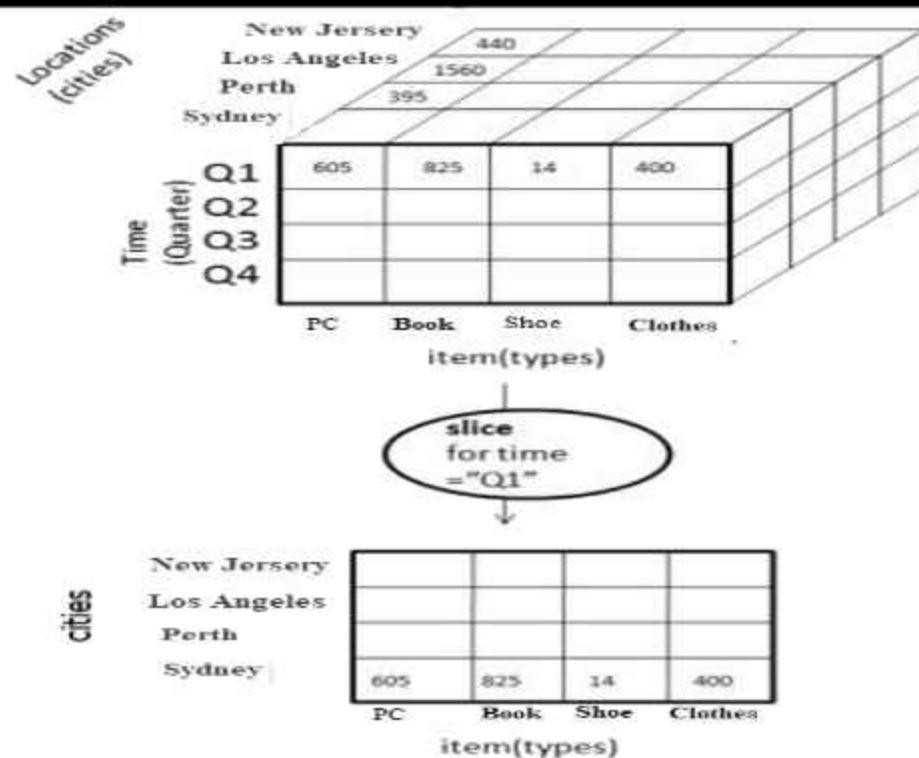
- In drill-down data is fragmented into smaller parts. It is the opposite of the rollup process.
- It can be done via
 - Moving down the concept hierarchy
 - Increasing a dimension





Slice:

- one dimension is selected, and a new sub-cube is created.

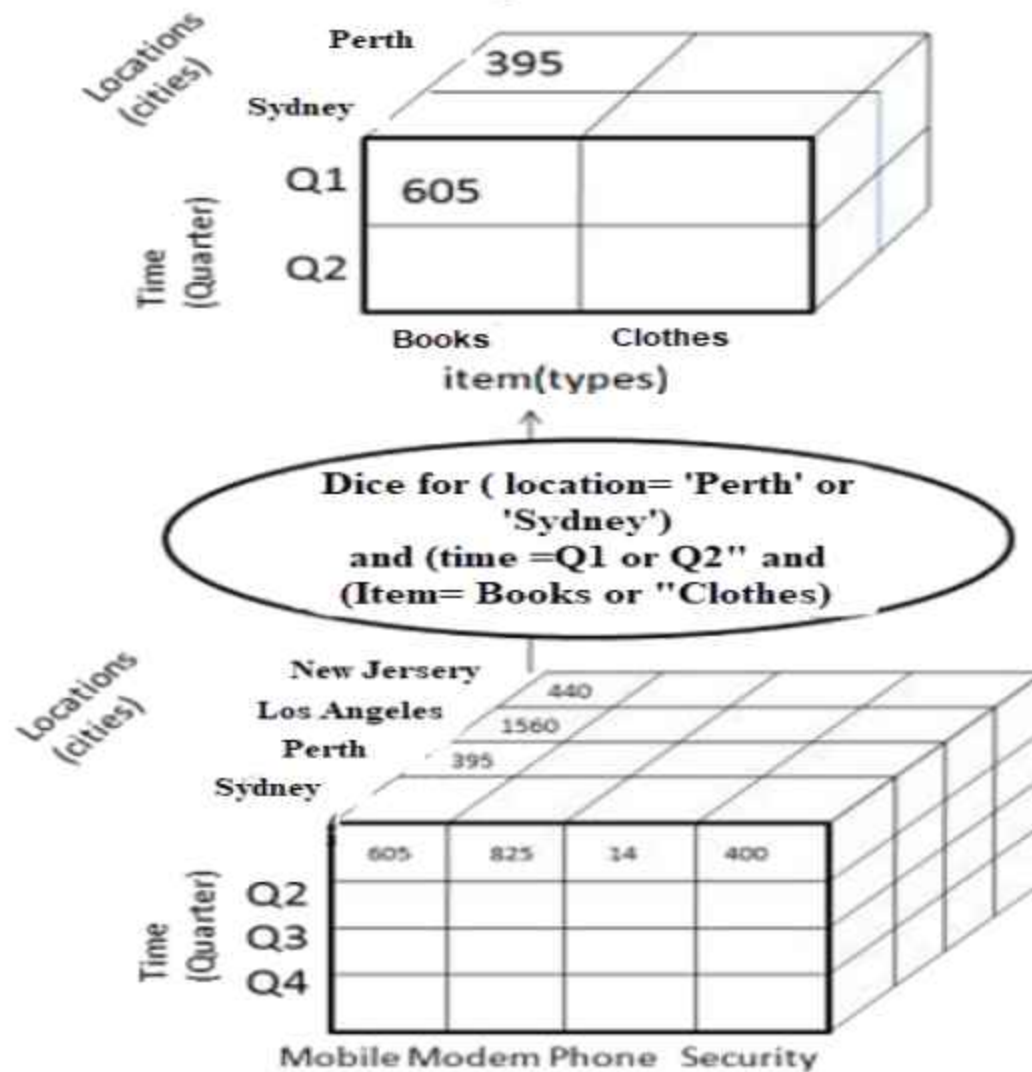


- Dimension Time is Sliced with Q1 as the filter.
- A new cube is created altogether.



Dice:

- This operation is similar to a slice. The difference in dice is you select 2 or more dimensions that result in the creation of a sub-cube.





Pivot

- you rotate the data axes to provide a substitute presentation of data.

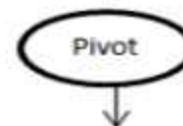


Locations
(cities)

New Jersey
Los Angeles
Perth
Sydney

605	825	14	400
PC	Book	Shoe	Clothes

item(types)



Item
(types)

PC			605
Book			825
Shoe			14
Clothes			400
	New Jersey	Los Angeles	Perth Sydney

Location (Cities)



Thank You...