



ONLINE ANALYTICAL PROCESSING

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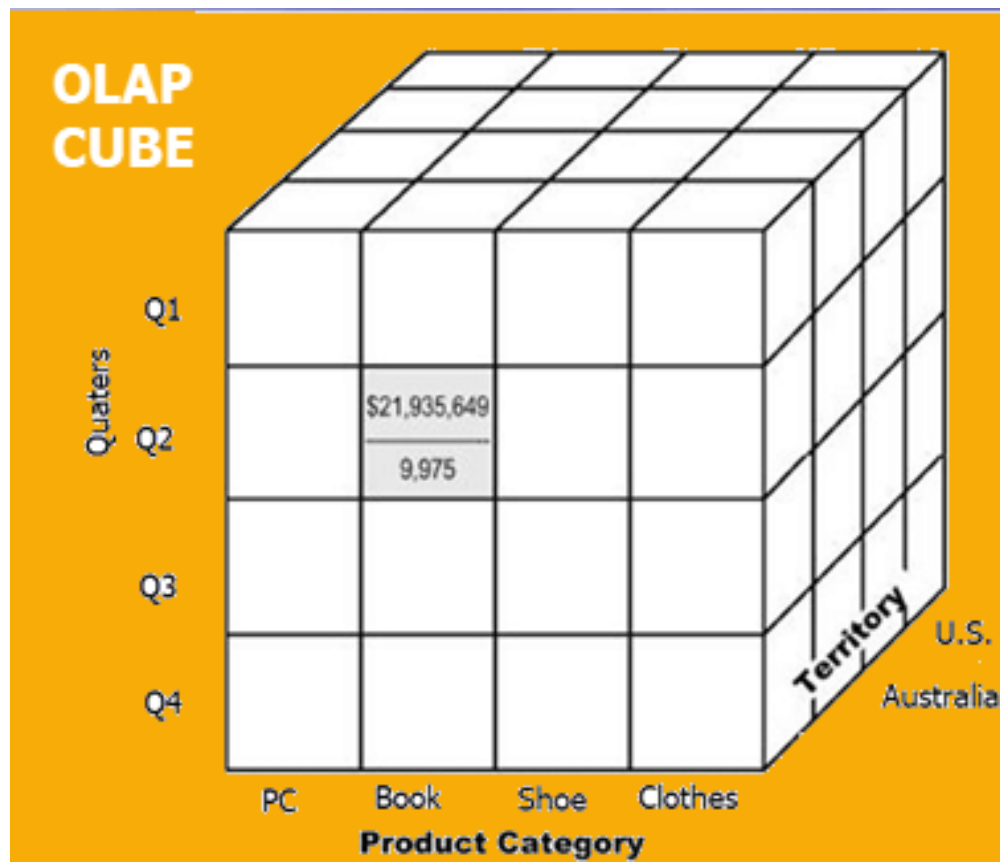


Introduction

- 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.



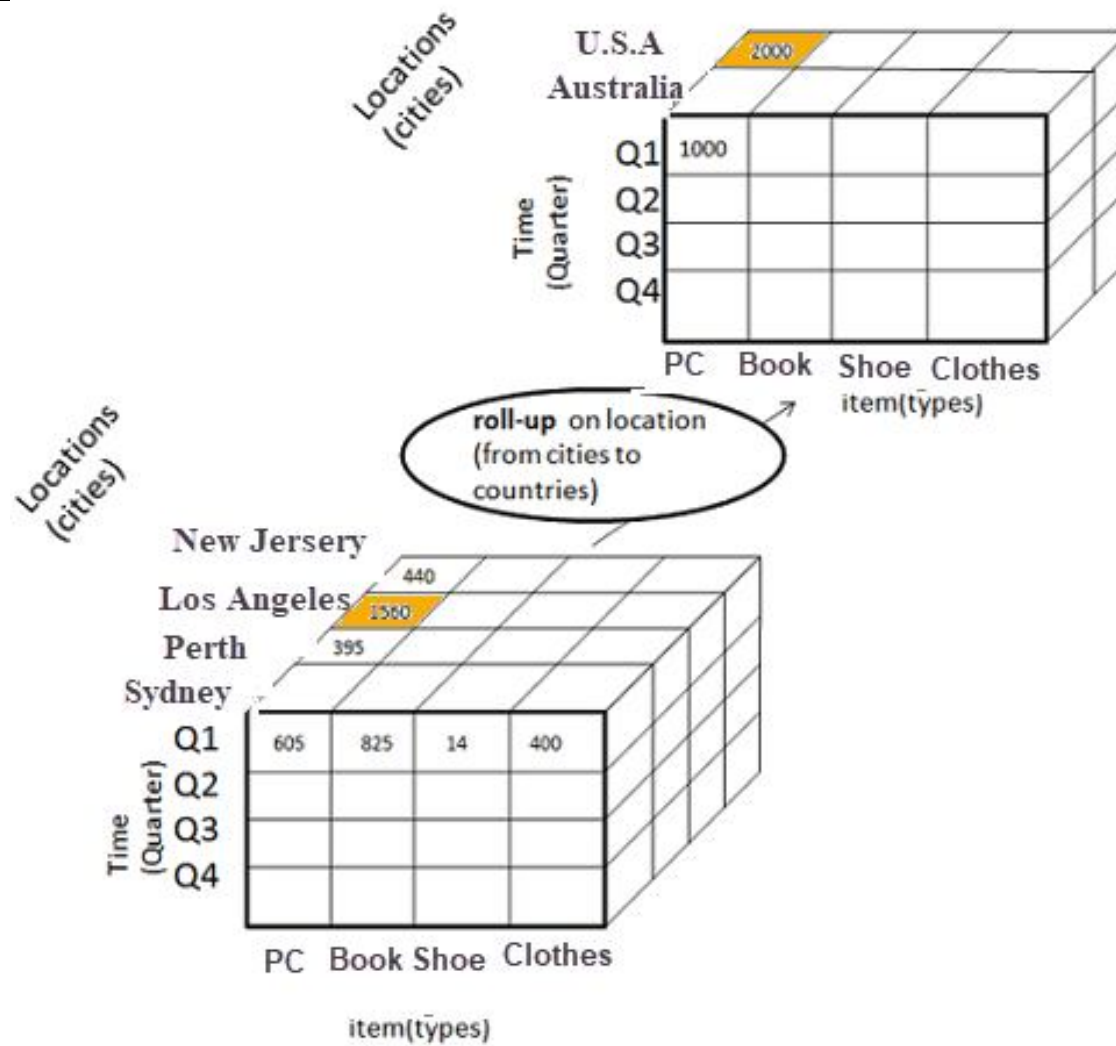
- The OLAP Cube consists of numeric facts called **measures** which are categorized by dimensions.
- OLAP Cube is also called the **hypercube**.
- <https://www.youtube.com/watch?v=2ryG3Jy6eIY>





Basic analytical operations of OLAP

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





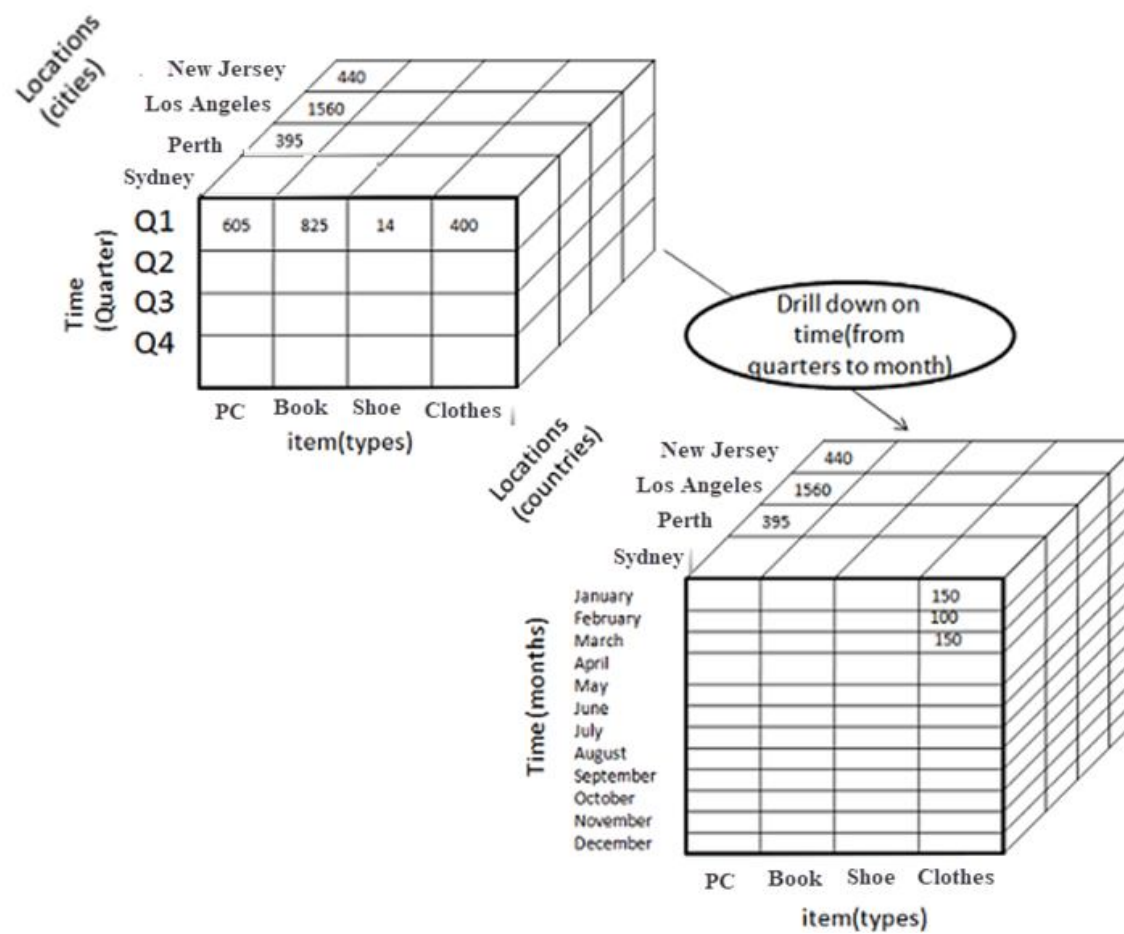
Roll-up:

- 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

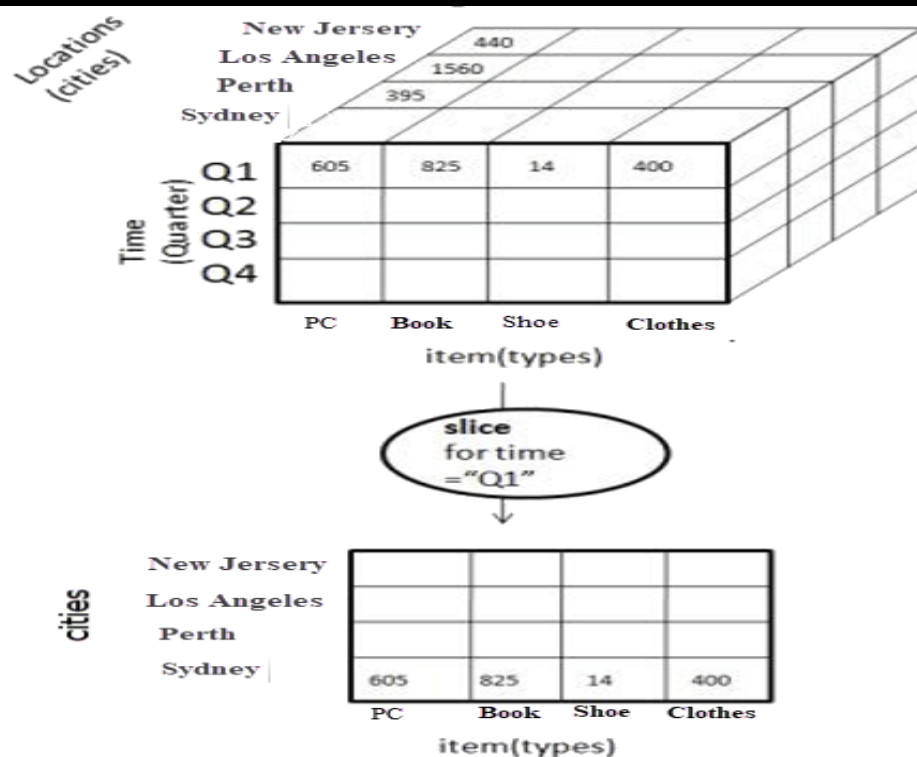
- In drill-down data is fragmented into smaller parts. It is the opposite of the rollup process.
- It can be done via
 - Moving down the concept hierarchy
 - Increasing a dimension





Slice:

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

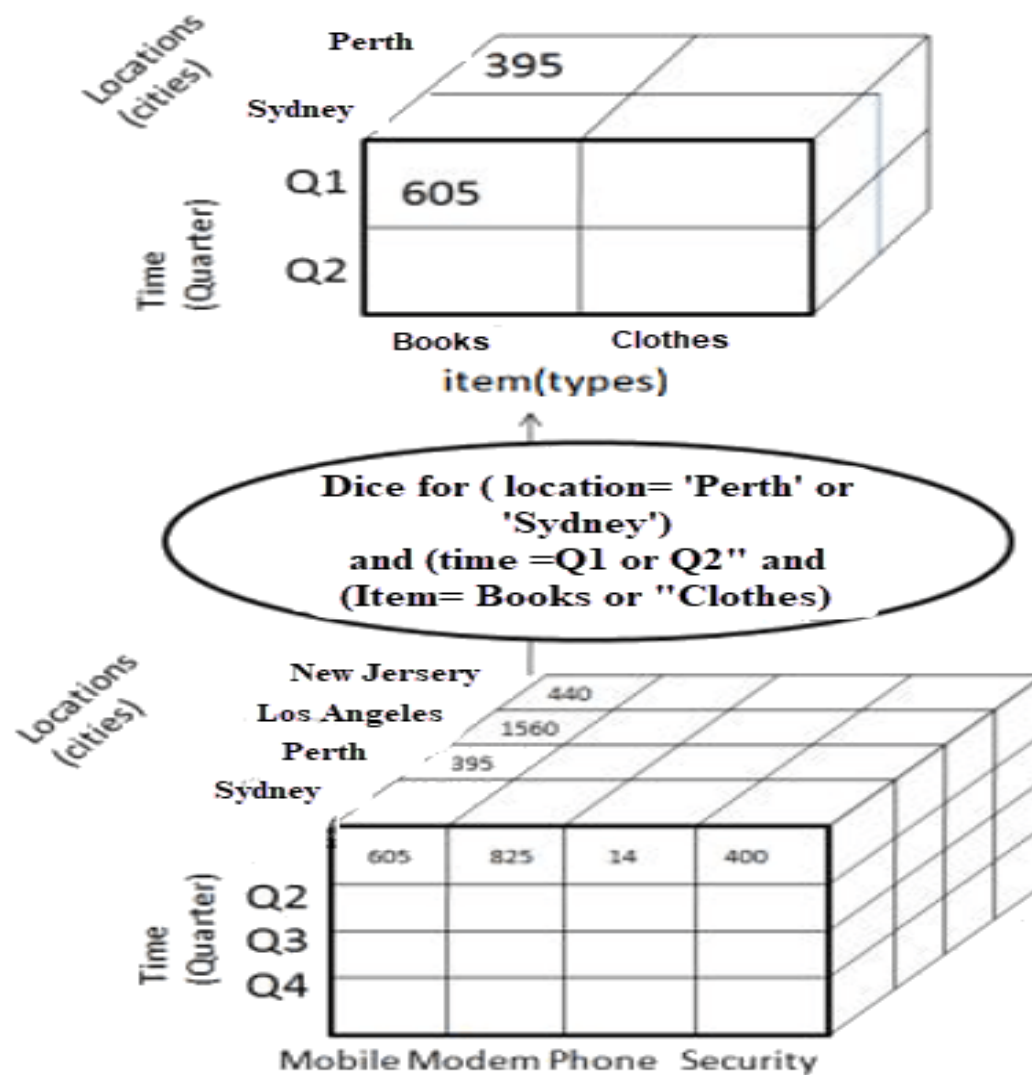


- Dimension Time is Sliced with Q1 as the filter.
- A new cube is created altogether.



Dice:

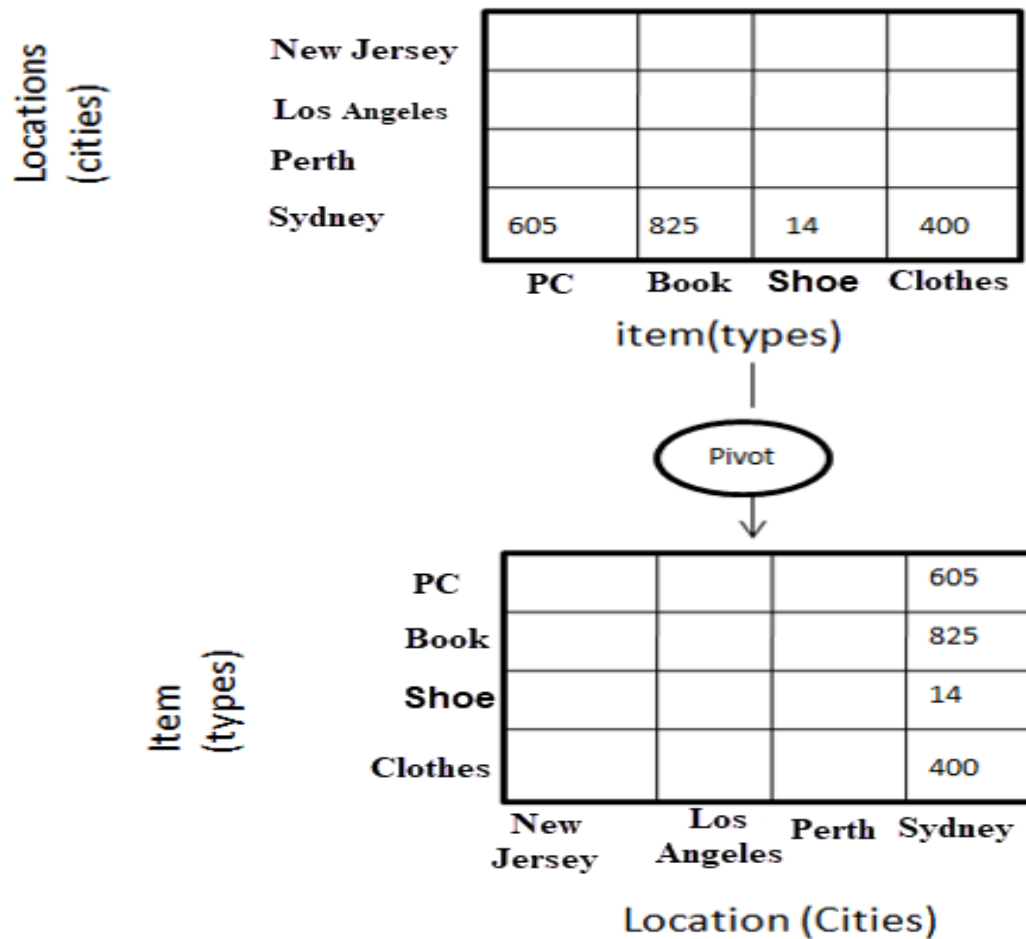
- This operation is similar to a slice. The difference in dice is you select 2 or more dimensions that result in the creation of a sub-cube.





Pivot

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





Thank You...