

## Concept Hierarchy

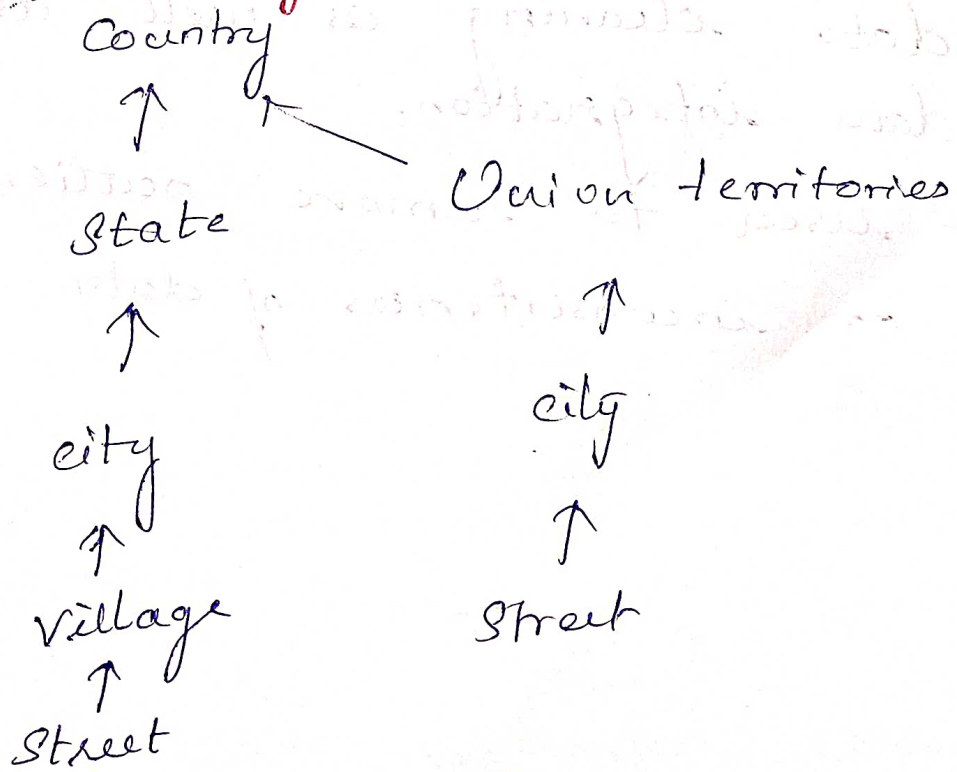
- represents a series of mappings from a set of low-level concepts to larger-level, more general concepts.
- Here, the information is organized in a hierarchical structure.
- it includes set of nodes organized as trees, where the nodes define the value of an attribute known as concepts.
- The level of root node is one.

## Types

- Schema hierarchy
- Set grouping hierarchy
- Operation derived hierarchy.

### 1) Schema Hierarchy

Eq. Location



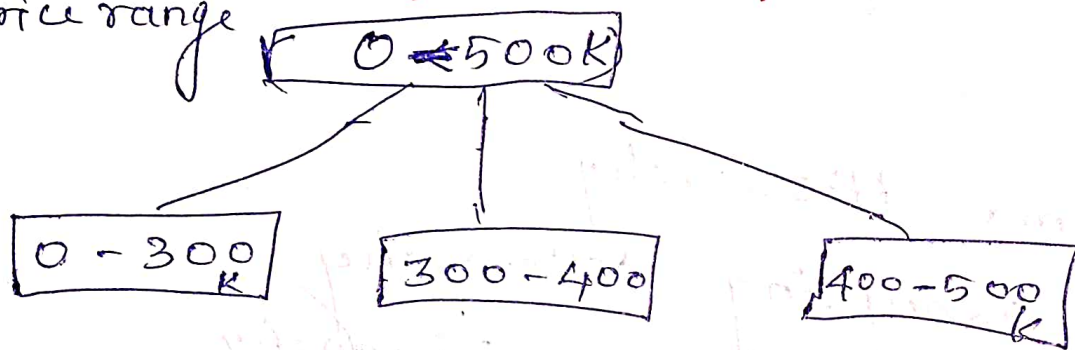
- used to organize the schema of a database in a logical way.

- organizes different types of data such as table, attributes, relationship etc.

- it is used when multiple sources need to be integrated into a single database.

## 2) Set - Grouping Hierarchy

Eg:- Price range



- based on set theory.

- used in data-preprocessing especially data cleaning as well as in data integration.

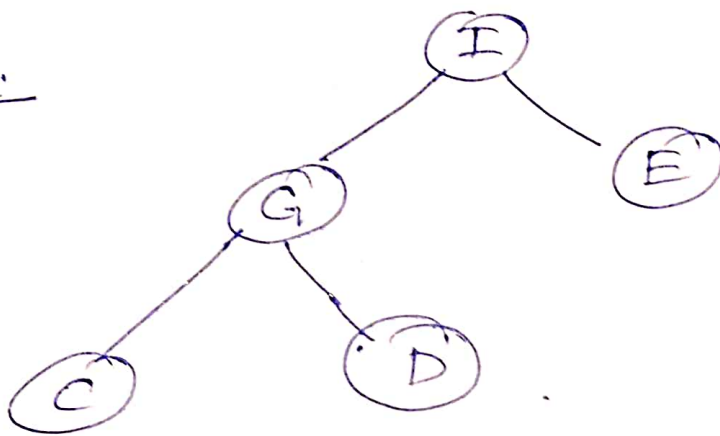
- used to remove outliers, noise or inconsistencies of data

# Operation-driven Concept Hierarchy

~~Concept~~ - defined by set of operations on the data

- these operations are defined by users of data mining system.
  - defined for numerical attributes
- Eg: data comparison, data clustering.

Eg:



Here, attributes with higher values are placed in the right side & with lower values are placed in the left child

## Rule-based Concept Hierarchy

Here, whole or a portion of concept hierarchy is defined by set of rules