Dimensional Data Modeling

Introduction of Data Modelling and Data Models

Data Modeling
Importance and Characteristics of a Good Data Model Types of Data Models

Introducing Dimensional Modelling

Dimensional Modeling
Comparison of Dimensional Modeling with E-R Modeling or Normalized Modeling
 Benefits of Dimensional Modeling

Dimensional Modeling Building Blocks

Learn about all basic building blocks of Dimensional Modeling

Fact Tables
Fact Table Keys
Fact Table Granularity
Dimension Tables
Dimension Features
The Basic Structure of a Dimension
Dimension Table Keys
Conformed Dimensions
Grain
Sparsity
Degenerate Dimensions
Role-Playing Dimensions
Junk Dimensions
Date and Time Dimensions
Bus Architecture
Dimensional Design Process

Slowly Changing Dimensions

Learn why Slowly Changing Dimensions is an important concept in Data warehousing and how to deal with

various types of Slowly Changing Dimensions.

Slowly Changing Dimensions
Type 1: Overwrite the Dimension Attribute
Type 2: Add a New Dimension Row
Type 3: Add a New Dimension Attribute
Hybrid Slowly Changing Dimension Techniques
Conflicting Requirements
 Frozen Attributes
Time-Stamped Dimensions

Snowflake, Outriggers, Hierarchy and Bridge Table

Learn about Snowflake, Outriggers, Hierarchy and Bridge Table.

Snowflake
Outrigger
Eliminating Repeating Groups with Outriggers
Outriggers and Slow Change Processing
Hierarchies
Fixed Hierarchies
Variable Depth Hierarchies
Many-Valued Dimensions with Bridge Tables
Time-Varying Bridge Tables.

Late-Arriving Dimension Records and Correcting Bad Data

Learn how to handle when fact data arrives first and dimension data arrives later. This can create an integrity

issue if not dealt with properly.

Dimension Data Value arrives after Fact Value is loaded
A Correction in Dimension Data Value arrives late.

More on Facts

Learn in detail about Fact tables and how to deal with complex types of Fact tables.

Three Fundamental Grains
Transaction Fact Tables
Periodic Snapshot Fact Tables
Accumulating Snapshot Fact Tables
Facts of Differing Granularity and Allocation
Multiple Currencies and Units of Measure
Fact less Fact Tables
Consolidated Fact Tables.

Designing the Dimensional Model

Learn how to create a Dimensional Model.

Prerequisite
Modeling Tools
Naming Conventions
Provision for Source Data Research and Profiling
Design the Dimensional Model,
Build the High Level Dimensional Model
Conduct the Initial Design Session
Document the High Level Model Diagram
Identify the Attributes and Metrics
Develop the Detailed Dimensional Model

Identify the Data Sources
Understand Candidate Data Sources
Profile and Select the Data Sources
Establish Conformed Dimensions
Identify Base Facts and Derived Facts
Document the Detailed Table Designs
Update the Bus Matrix , Review and Validate the Model
Finalize the Design Documentation

A Fact Table for Each Process

Learn how it is important to have a separate fact table for each process and what complications can occur if

this is not followed.

Example of Events occurring at different times
Example of Facts having different Grains
How to compare and analyze facts from multiple fact tables

Hierarchies

Learn why Hierarchies are an important concept for Data warehousing. Learn various forms of Hierarchies.

Drilling
Attribute Hierarchies and Drilling
Drilling Within an Attribute Hierarchy
Other Ways to Drill
Multiple Hierarchies in a Dimension
Cube Design and Management

Multi-Valued Dimensions and Bridges

Learn about Multi-Valued Dimensions and Bridges and why should they be managed properly to avoid any

kind of double counting.

Standard One-to-Many Relationships,
Simple Solution,Using a Bridge for Multi-Valued Dimensions
Resolving the Many-to-Many Relationship,
Multi-Valued Attributes,
Simplifying the Multi-Valued Attribute,
Using an Attribute Bridge,
Double-Counting, Primary Member and Hiding the Bridge
The Impact of Changes,
Resolving the Many-to-Many Relationship

Apart from the above standard content, below will be covered as mentioned by the team:

Types of Business Systems: Operational /OLTP and Analytical /OLAP. Characteristics and comparison.

- Need of Business Intelligence systems.

- Fundamentals of Database types and Database design. Why RDB and SQL.

- Conceptual, Logical & Physical Modeling Basics

- Overview of ER Modelling in OLTP, Effort estimation for ER model

- Business scenario and Creating ER Model with examples.

- Identifying & Non Identifying Entities and Relationships.

- Types of relationships. Cardinalities (1-1, 1-M, M-M)