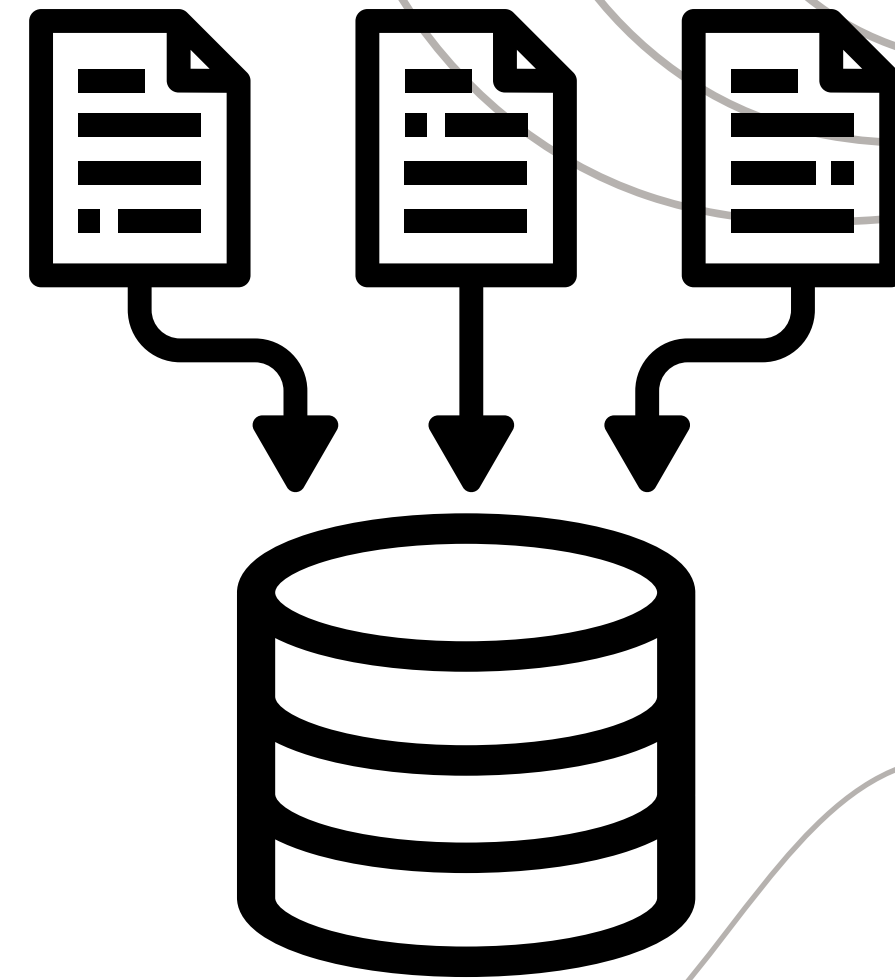


Data modelling techniques

Presented by Olena Popova

What is data modelling?

- Data modelling is the process of discovering, analyzing, and representing data requirements for business operations and software applications.



Benefits of data modelling



Standardizes data language

Documents essential data and
system info

Make communication in
projects easier

Provides foundation for
system work

Levels of data abstraction

Conceptual Level

Defines high-level entities and relationships in data model

Logical Level

Specifies relationships and constraints between data objects in detail

Physical Level

Determines specific storage details including data types, indexes, and technical specifications

Features of different data models

FEATURES	CONCEPTUAL	LOGICAL	PHYSICAL
ENTITY NAMES	+	+	
RELATIONSHIPS	+	+	
ATTRIBUTES		+	
PRIMARY KEYS		+	+
FOREIGN KEYS		+	+
TABLE NAMES			+
COLUMN NAMES			+
COLUMN DATA TYPES			+

Relational Data Model

Table:

Column 1	Column 2	Column 3	Column 4
Roll No.	Name	Age	Gpa
1	Aryan	21	3
2	Sachin	25	4
3	Prince	20	2.5
4	Anuj	21	3.5

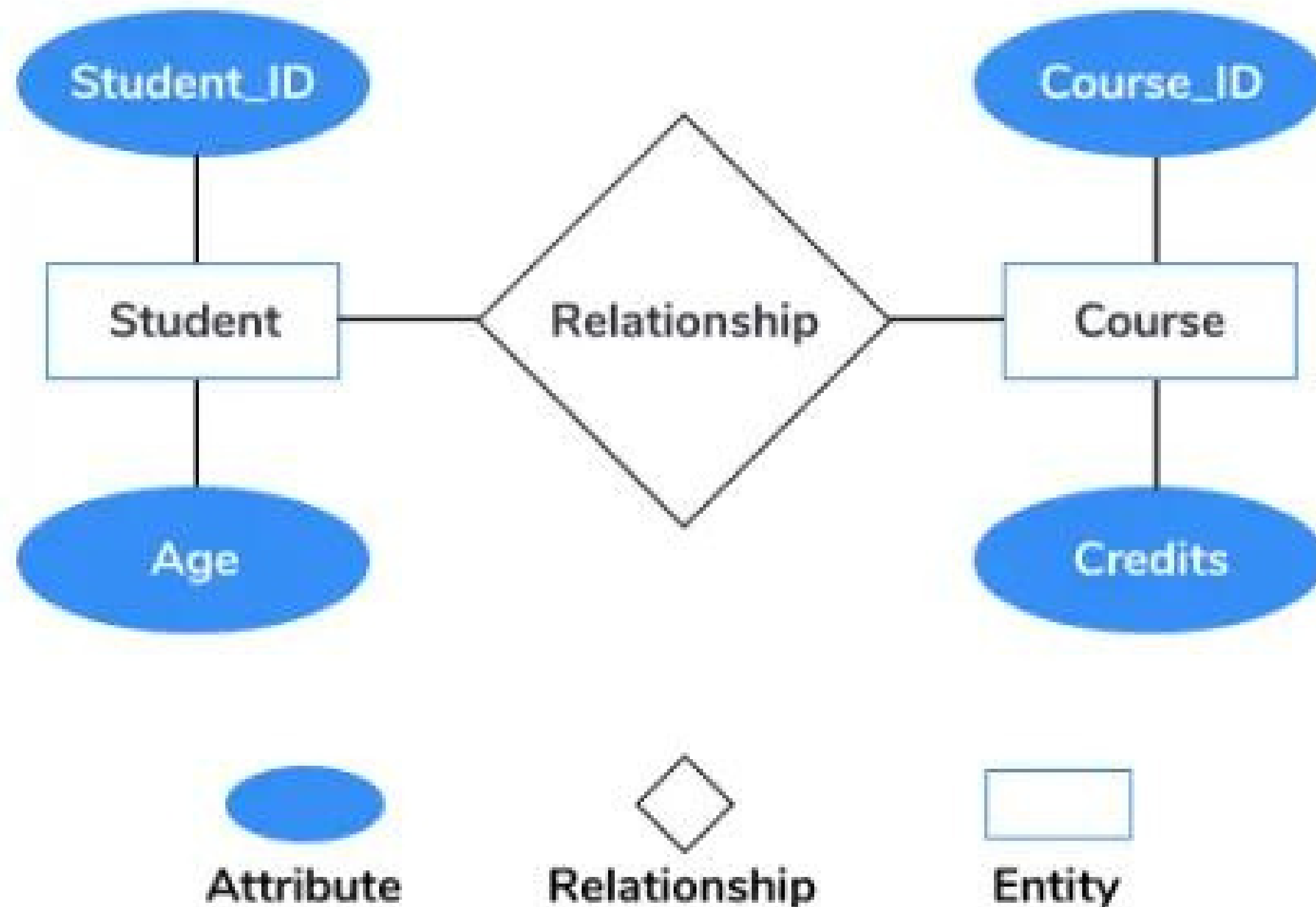
Row 1

Row 2

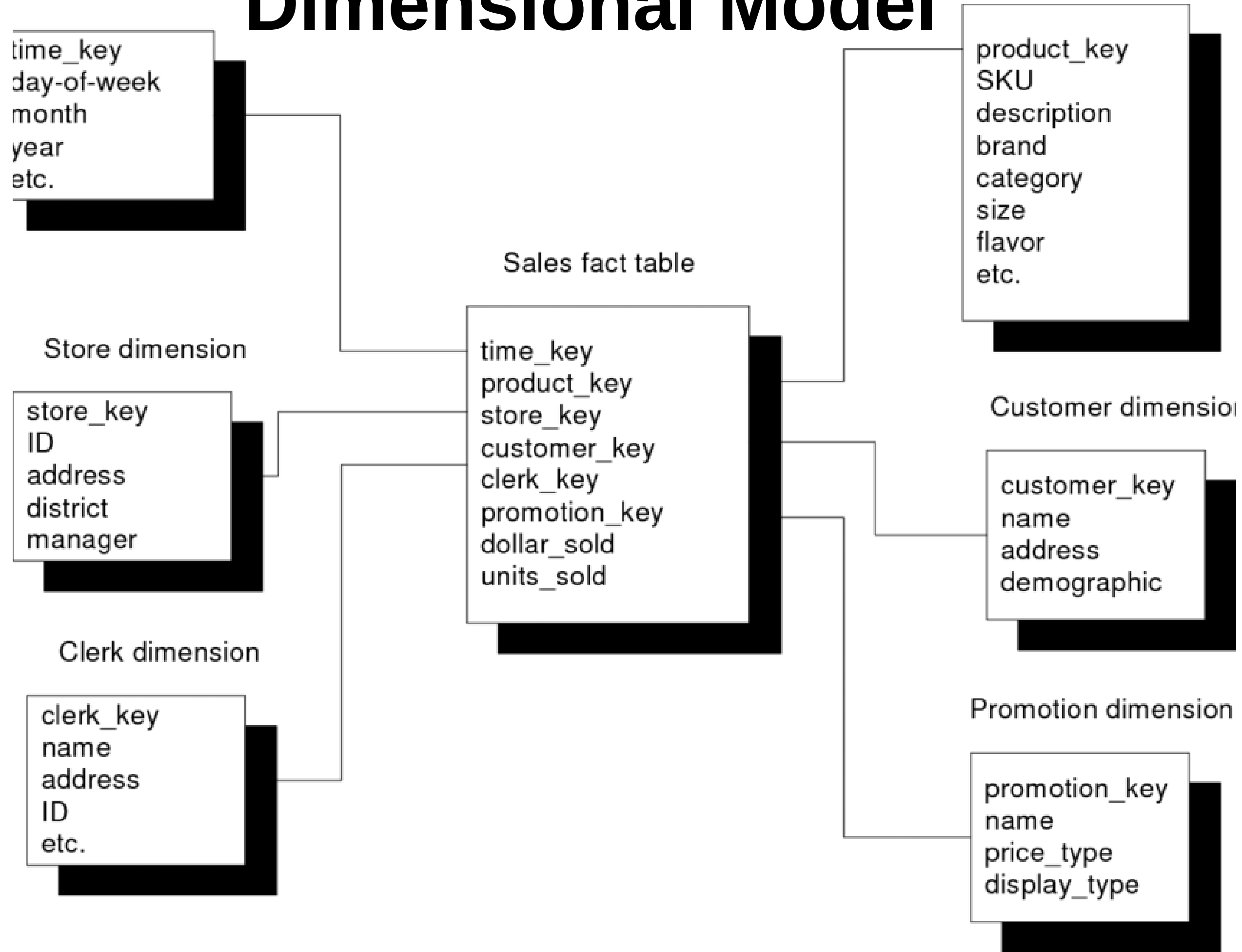
Row 3

Row 4

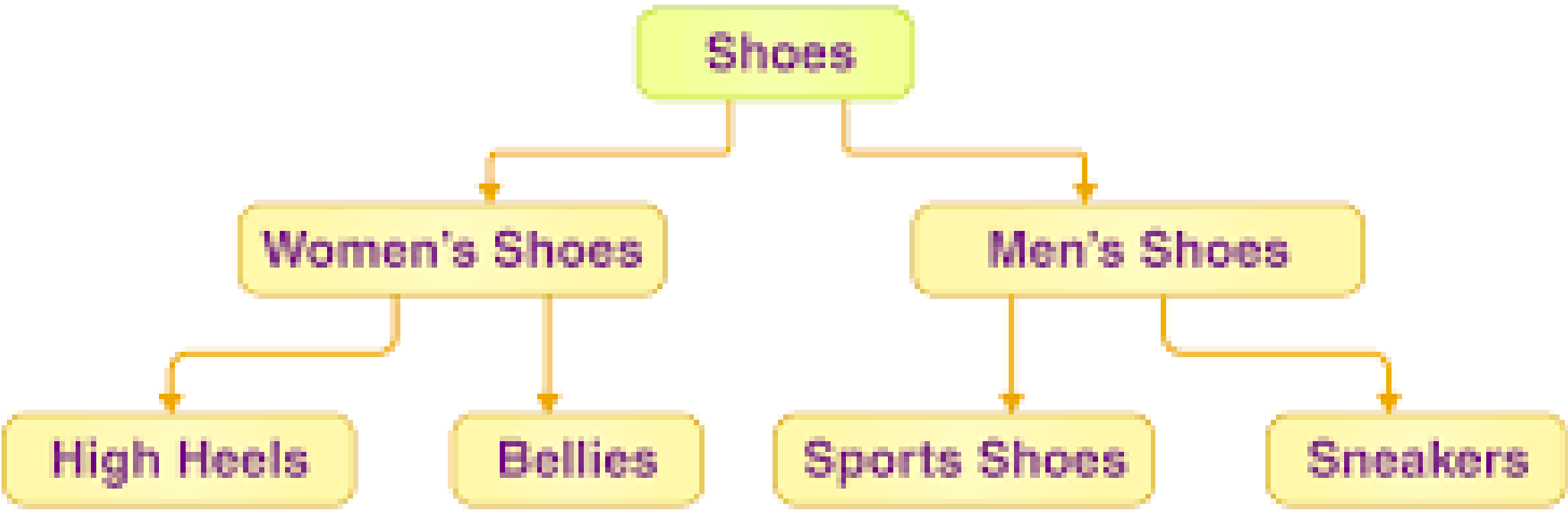
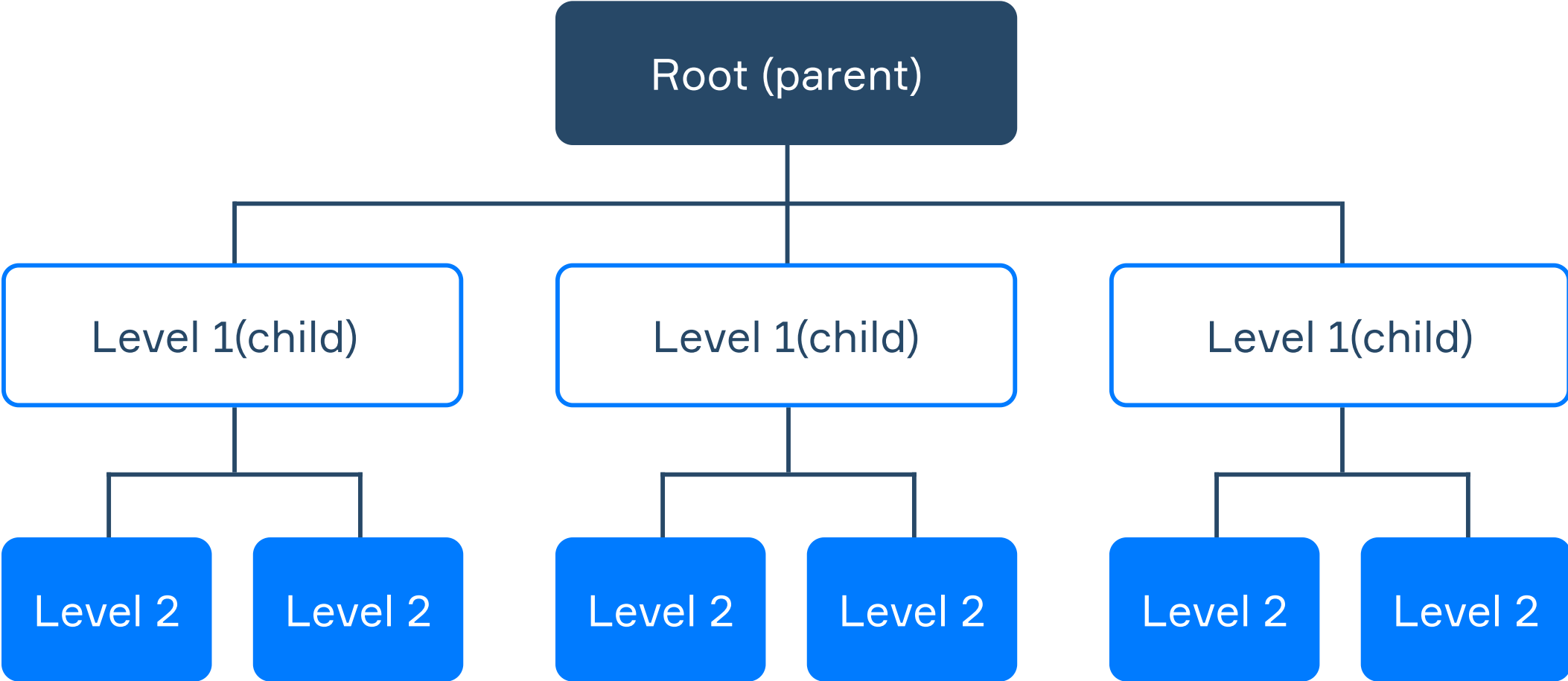
Entity Relationship Model



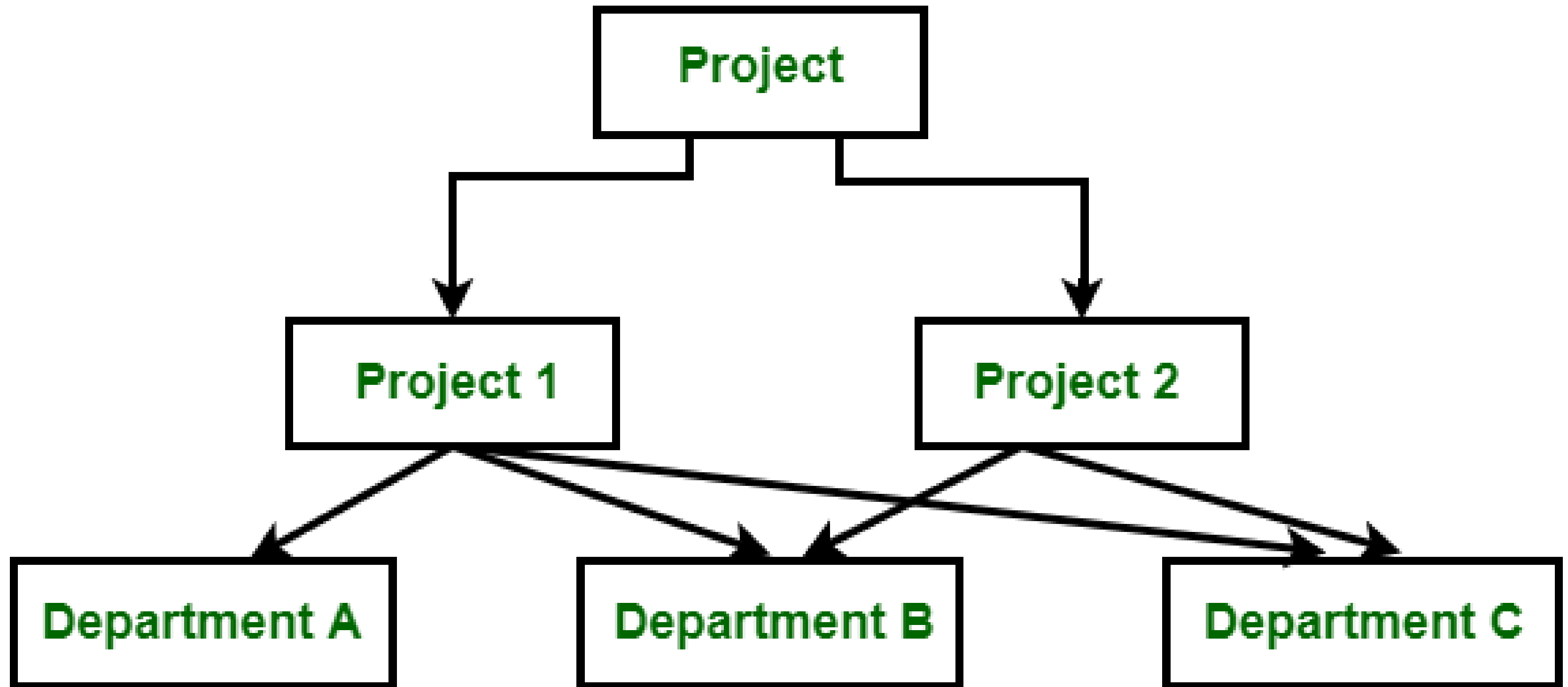
Dimensional Model



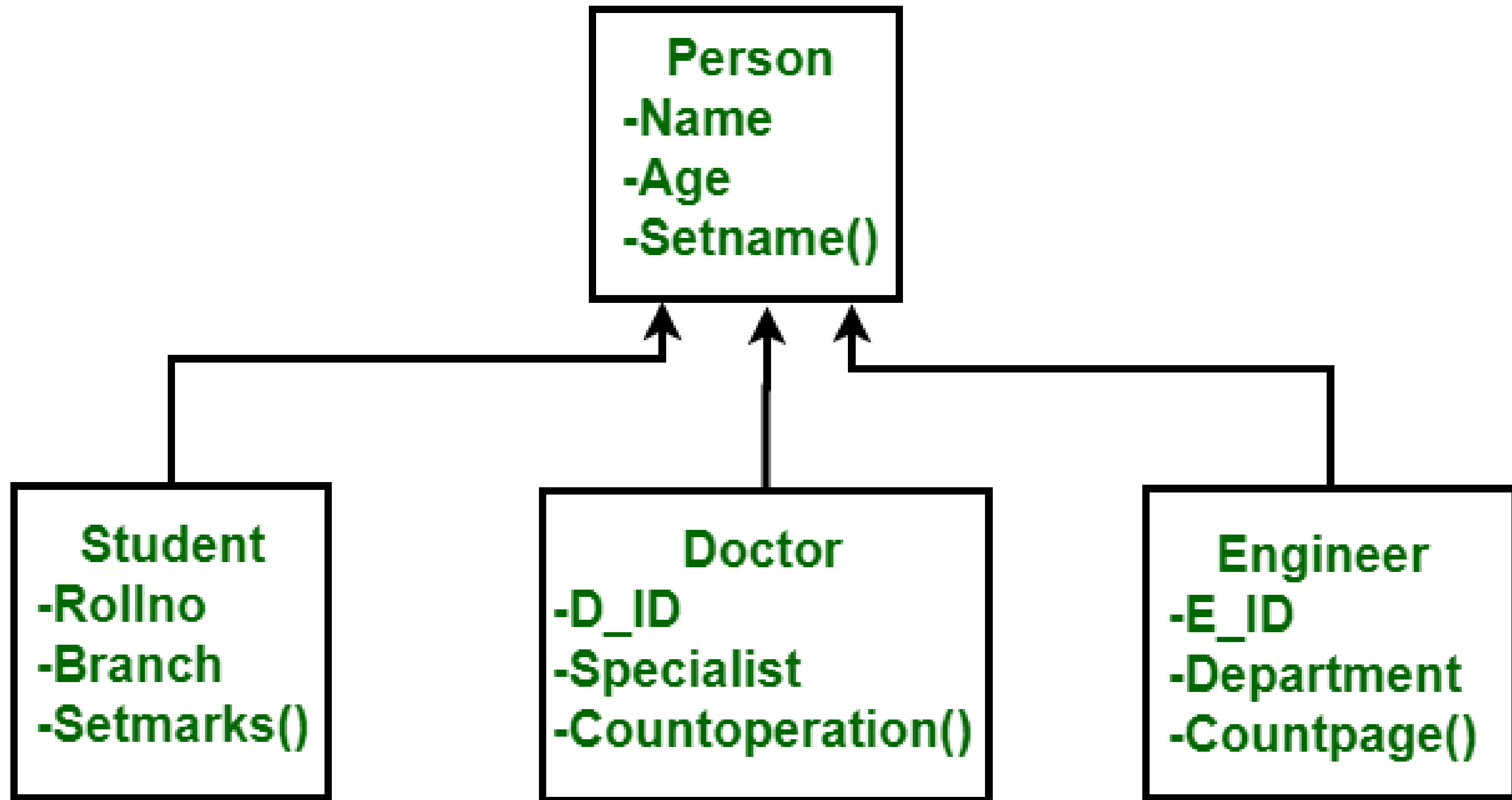
The Hierarchical Database Model



Network Database Model



Object-Oriented Model



Resources

- <https://www.altexsoft.com/blog/data-modeling/>
- <https://www.simplilearn.com/what-is-data-modeling-article>
- <https://www.velvetechnology.com/blog/data-modeling-techniques/>