Physical Data Modeling

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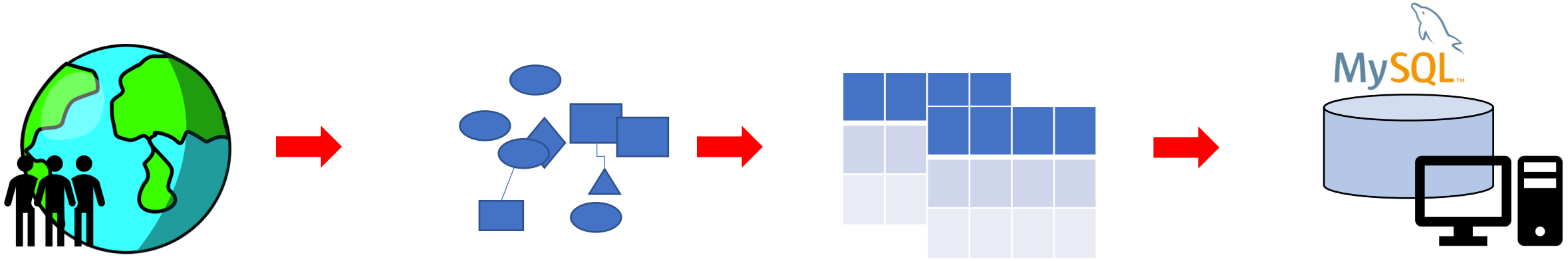
Learning Objectives

By the end of this video, you will be able to:

- Define and give examples of physical data models.
- Explain the differences between conceptual and physical data modeling.

Data Modeling Process



Real World

ER Model (Diagrams)

Relational Model (Tables)

DBMS

Conceptual

Physical

The process of data modeling for creating a database

What Is a Physical Data Model?

A model used by an actual database system.

- IMS: Hierarchical model.
- **MySQL: Relational model (our focus).**
- Objectivity/DB : Object-oriented.
- PostgreSQL: Object-relational model.
- Sedna: XML model.
- MongoDB: Document (JSON) model.
- Redis: Key-value model.
- Neo4j: Graph model.

Example database systems

Conceptual vs. Physical: ER Model vs. Relational Model

- Both are used to model data.
- ER model
  - Has more concepts: Entities, relationships.
  - Close to how we view the real world, and thus good for conceptualizing.
  - Does not have computation/operations on its structures.
- Relational model
  - Just one concept: relation.
  - Good for efficient storage/manipulations on computers.
  - Equipped with algebra/operations to define computation on data.