



# Information Capture and Representation

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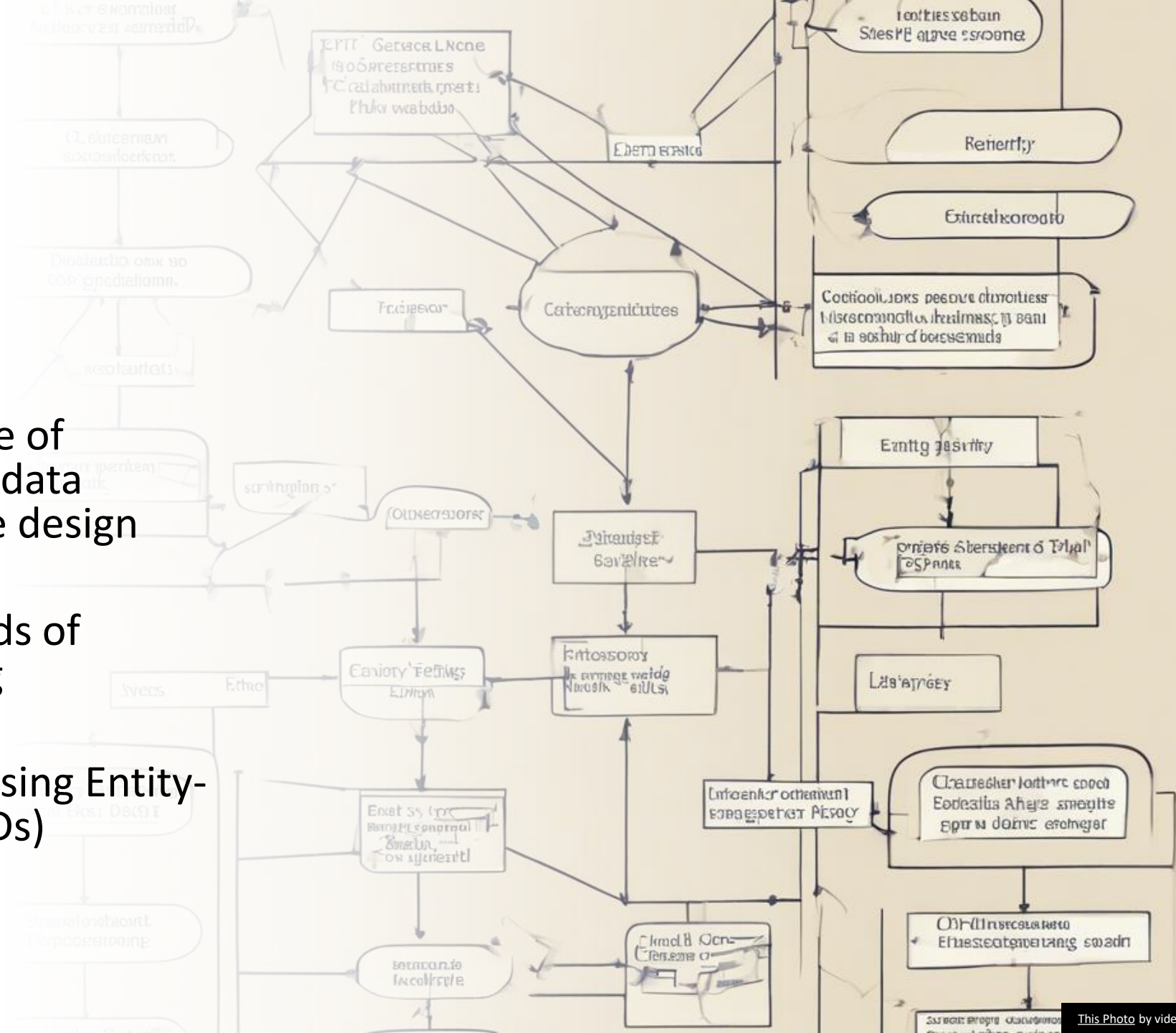
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# Learning Objectives

- Understand the importance of information capture in the data management and database design process
- Explore the various methods of capturing and representing information
- Learn how to model data using Entity-Relationship Diagrams (ERDs)



# Information Capture and Representation



- Information capture is the process of collecting data in form of paper documents, forms and e-documents, transforming them into accurate, retrievable information, and delivering the information into business applications and databases for immediate action.

# Importance of Information Capture

- Discuss the significance of capturing accurate and relevant information in the database design process
- Highlight how well-captured information forms the foundation for a robust and efficient database system

# Methods of Information Capture

- Interviews and Survey
- Observation and Document Analysis

# Entity-Relationship Model

Requirements, Collection and Analysis



Conceptual Design



Logical Design



Physical Design

A simplified description of the database design process

# ER Model describes data as

Entities

Relationship

Attributes

# ER Model describes data as entities, relationships and attributes

- Entity Types
  - Weak Entity Types
  - Entity Sets
  - Key Attributes of an Entity Type
  - Value sets (domains) of Attributes
  - Composite Attributes
  - Simple Attributes
- Multivalued Attributes
  - Stored Attribute
  - Derived Attribute
  - Null Values
  - Complex Attributes
  - Single-valued Attributes

# Entity Relationship Diagram

- Rectangles – entity sets
- Ellipses – attributes
- Diamonds – relationship sets
- Lines – links attributes to entity sets and entity sets to relationship sets

