Business School
UNIVERSITY OF COLORADO DENVER

Information Systems Program

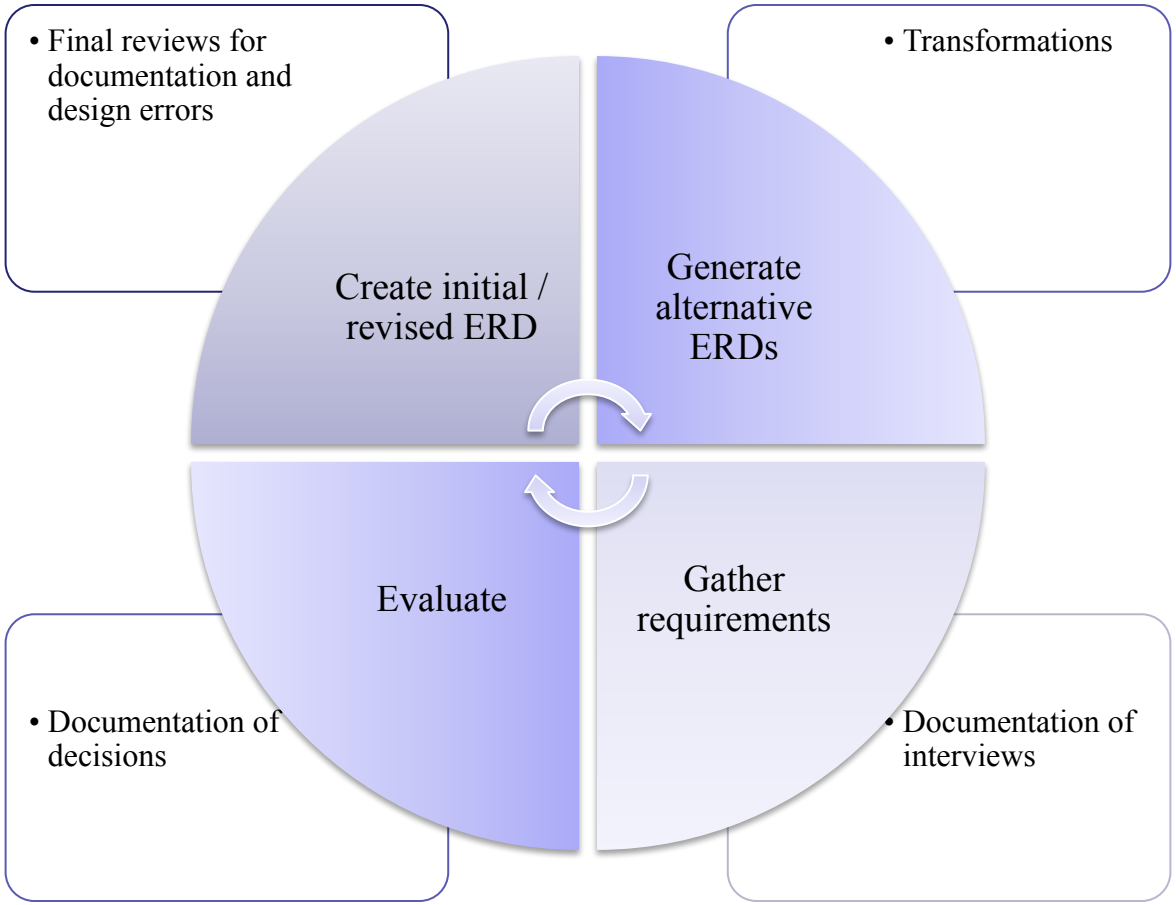
Module 9
Data Modeling Problems and Design Errors

Lesson 3: Finalizing an ERD

Lesson Objectives

- Appreciate the importance of documentation
- Appreciate the difficulty of detecting and resolving diagram errors
- Gain practice with analysis of an ERD for design errors

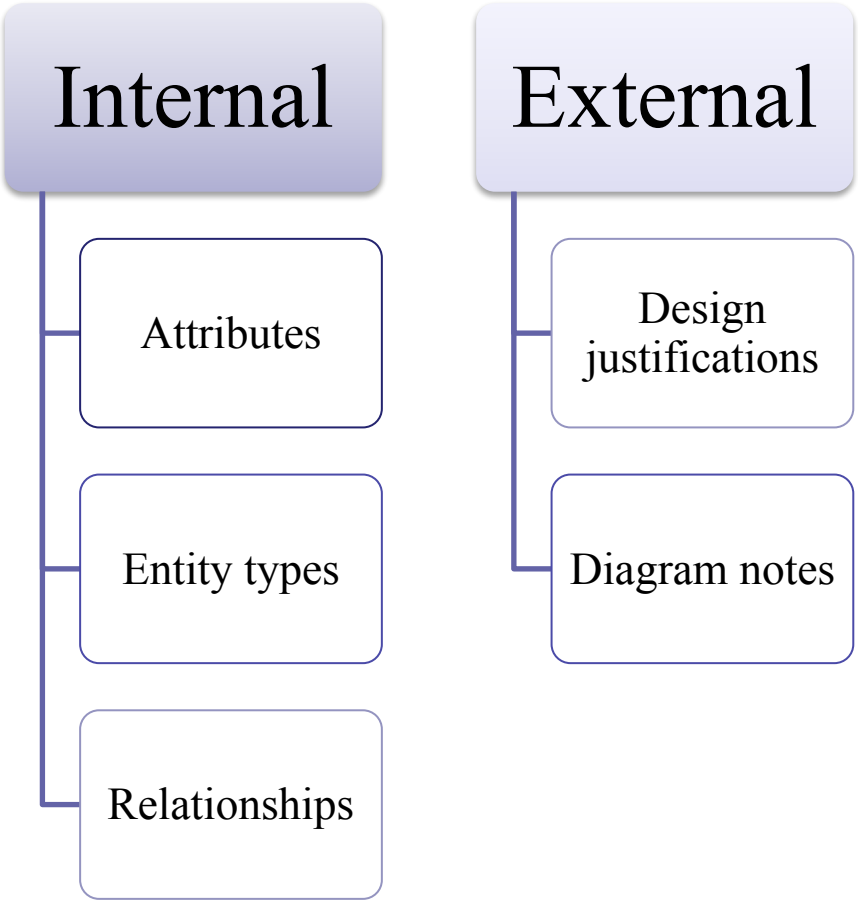
Finishing Steps



Documenting an ERD

- Important for resolving questions and communicating a design
- Identify inconsistency and incompleteness in a specification
- Identify situations when more than one feasible alternative exists
- Do not repeat the details of the ERD
- Incorporate documentation into the ERD

Documentation with the ER Assistant

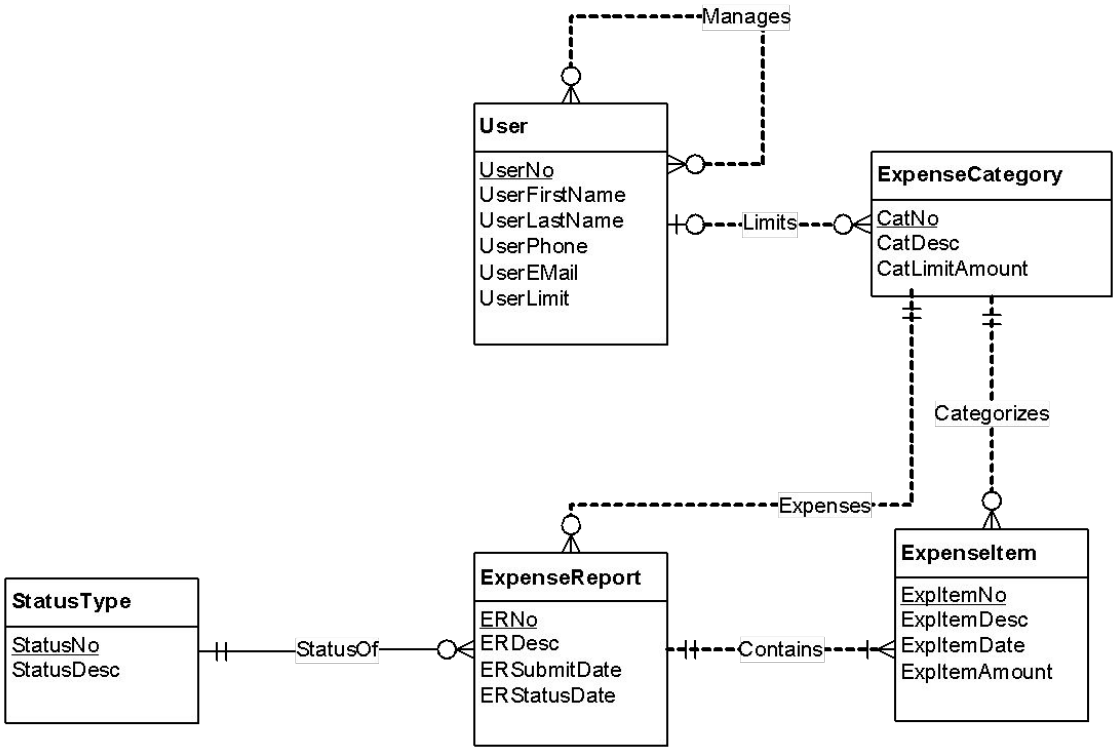


Documentation with Visual Paradigm

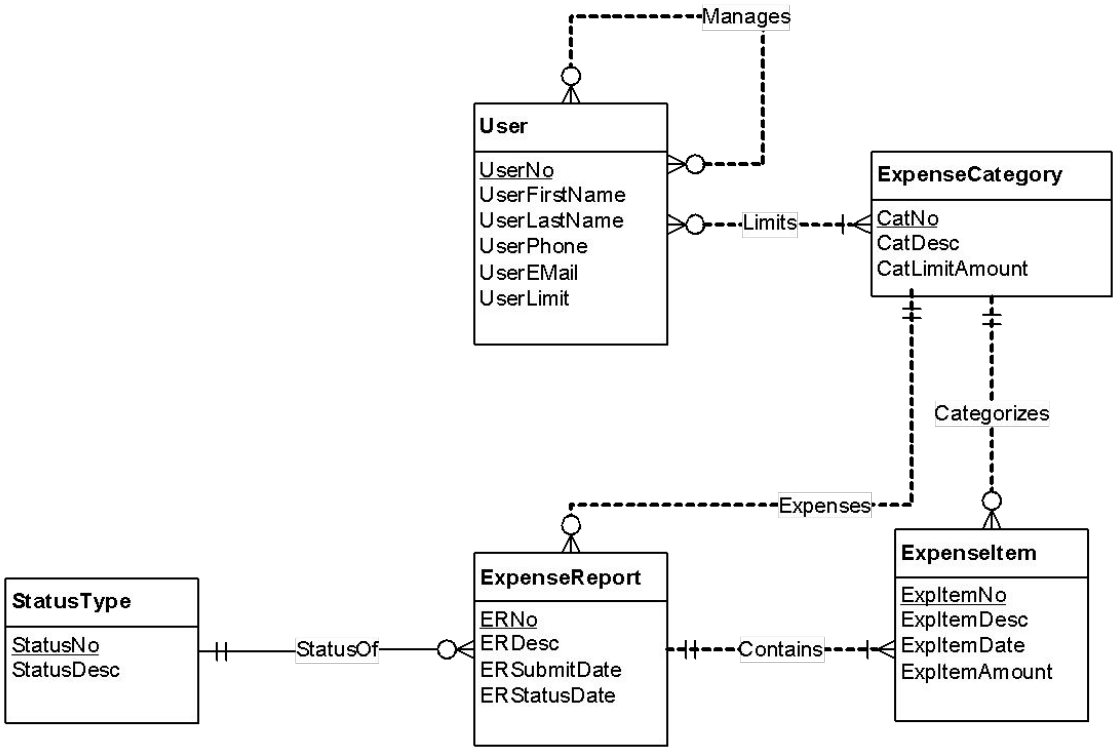
Common Design Errors

- Misplaced relationships: wrong entity types connected
- Missing relationships: entity types should be connected directly
- Incorrect cardinalities: typically using a 1-M relationship instead of a M-N relationship
- Overuse of specialized modeling constructs
  - Identification dependency
  - Self-referencing relationships
  - M-way associative entity types
- Redundant relationships: derived from other relationships

Problem 2 about Design Errors



Partial Solution for Problem 2



Summary

- Document an ERD carefully especially to justify important design decisions
- Check for design errors throughout the design process
- Conduct design reviews with peers