Module 8
Developing Business Data Models
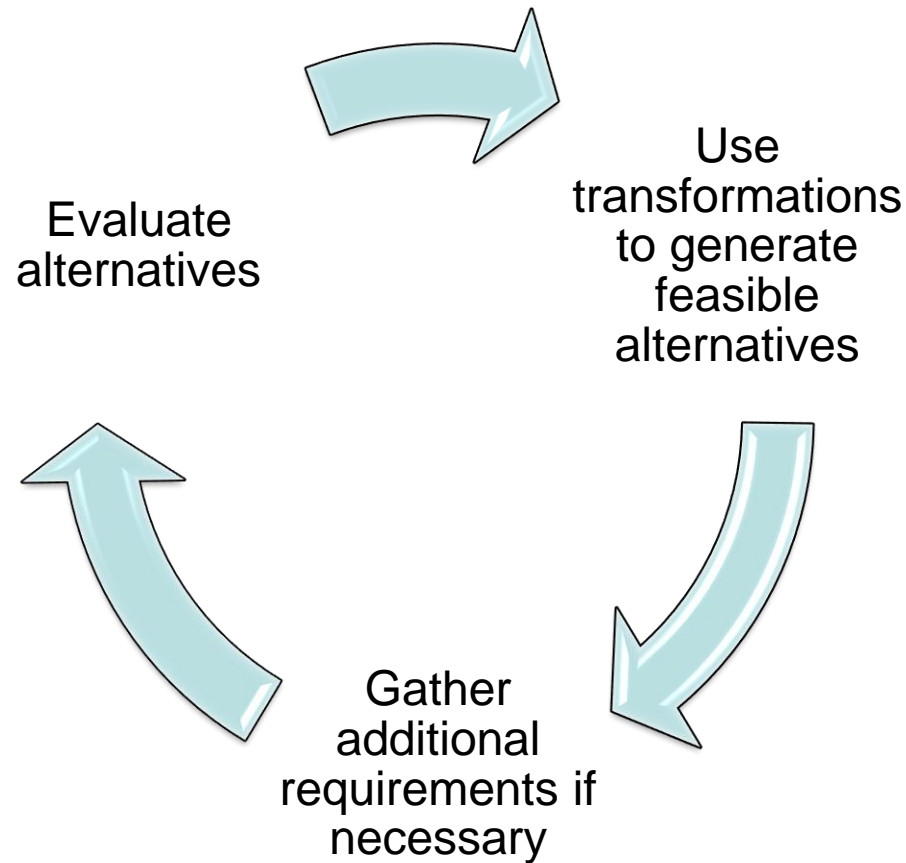
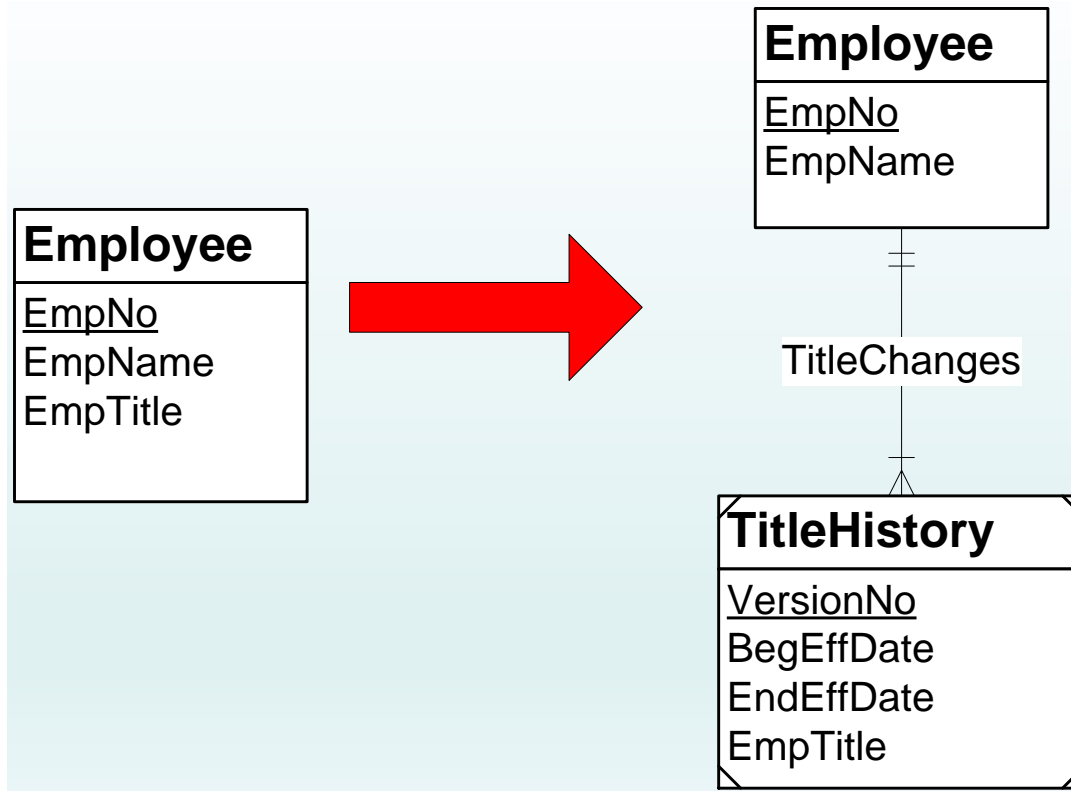## Lesson 4: Design Transformations II

Lesson Objectives

- Understand the importance of generating and evaluating alternative designs
- Explain a situation for using each transformation
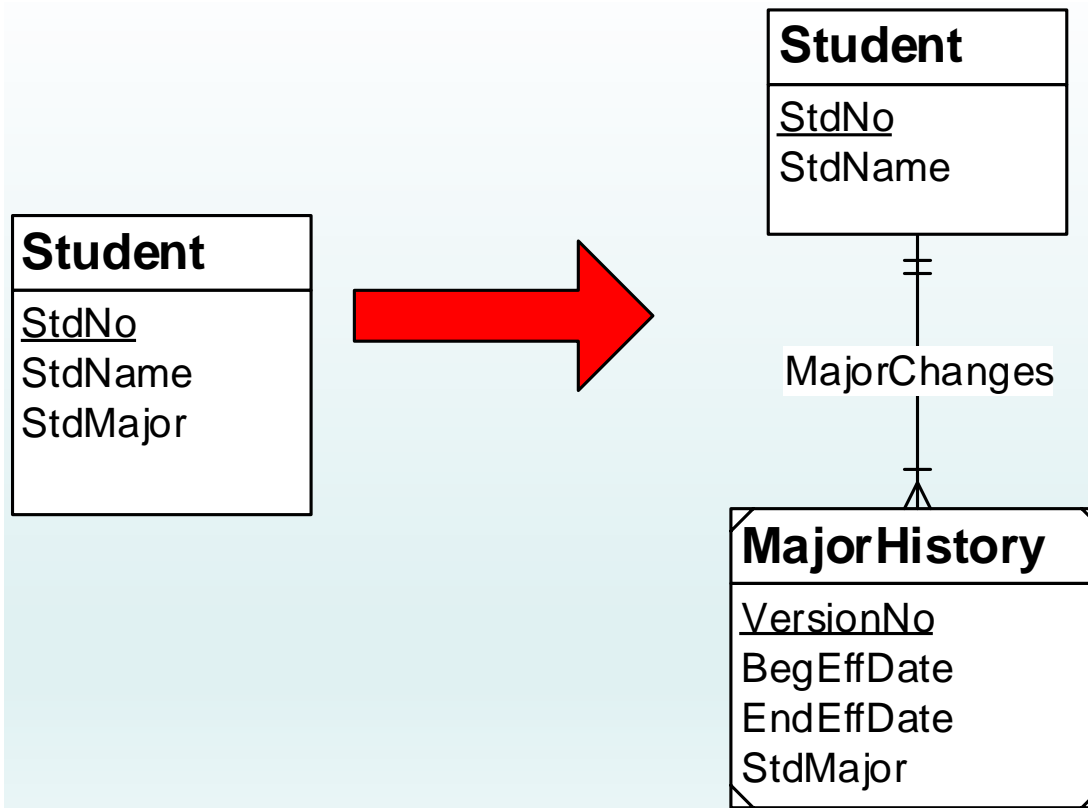- Apply each transformation

Diagram Refinements

Use transformations to generate feasible alternatives

Evaluate alternatives

Gather additional requirements if necessary

Business School
UNIVERSITY OF COLORADO **DENVER**

Information Systems Program

Attribute History Transformation I

Employee

EmpNo
EmpName
EmpTitle

→

Employee

EmpNo
EmpName

TitleChanges

TitleHistory

VersionNo
BegEffDate
EndEffDate
EmpTitle

Attribute History II

Student

StdNo
StdName
StdMajor

→

Student

StdNo
StdName

MajorChanges

MajorHistory

VersionNo
BegEffDate
EndEffDate
StdMajor

1-M Relationship History

Customer

CustNo
...

Uses

Meter

MeterNo
...

Customer

CustNo
...

UsesAt

MeterUsage

VersionNo
BegEffDate
EndEffDate

Meter

MeterNo
...

UsedBy
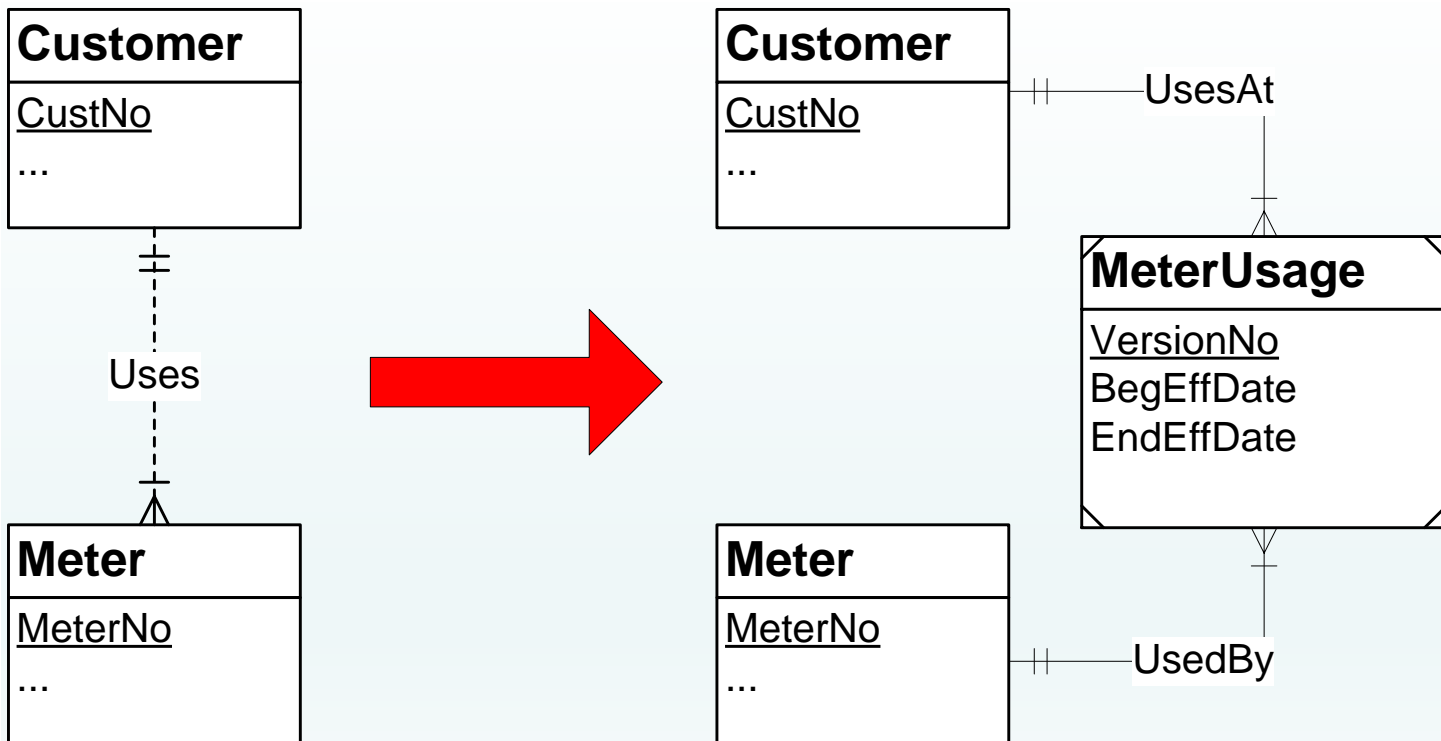
Limited Attribute History

Employee

EmpNo
EmpName
EmpTitle

→

Employee

EmpNo
EmpName
EmpCurrTitle
EmpCurrTitleBegEffDate
EmpCurrTitleEndEffDate
EmpPrevTitle
EmpPrevTitleBegEffDate
EmpPrevTitleEndEffDate

Reverse Transformations

- Not as common as main transformations
- Typically used for simplification
- Reverse transformations
  - Contract entity type
  - Combine attributes
  - Contract entity type structure
  - Strong entity type to weak entity type
  - Remove history

Summary

- History expansion for attributes
- History expansion for relationships
- Transformation reversing
- Importance in data warehouse design