Business School
UNIVERSITY OF COLORADO **DENVER**

Information Systems Program

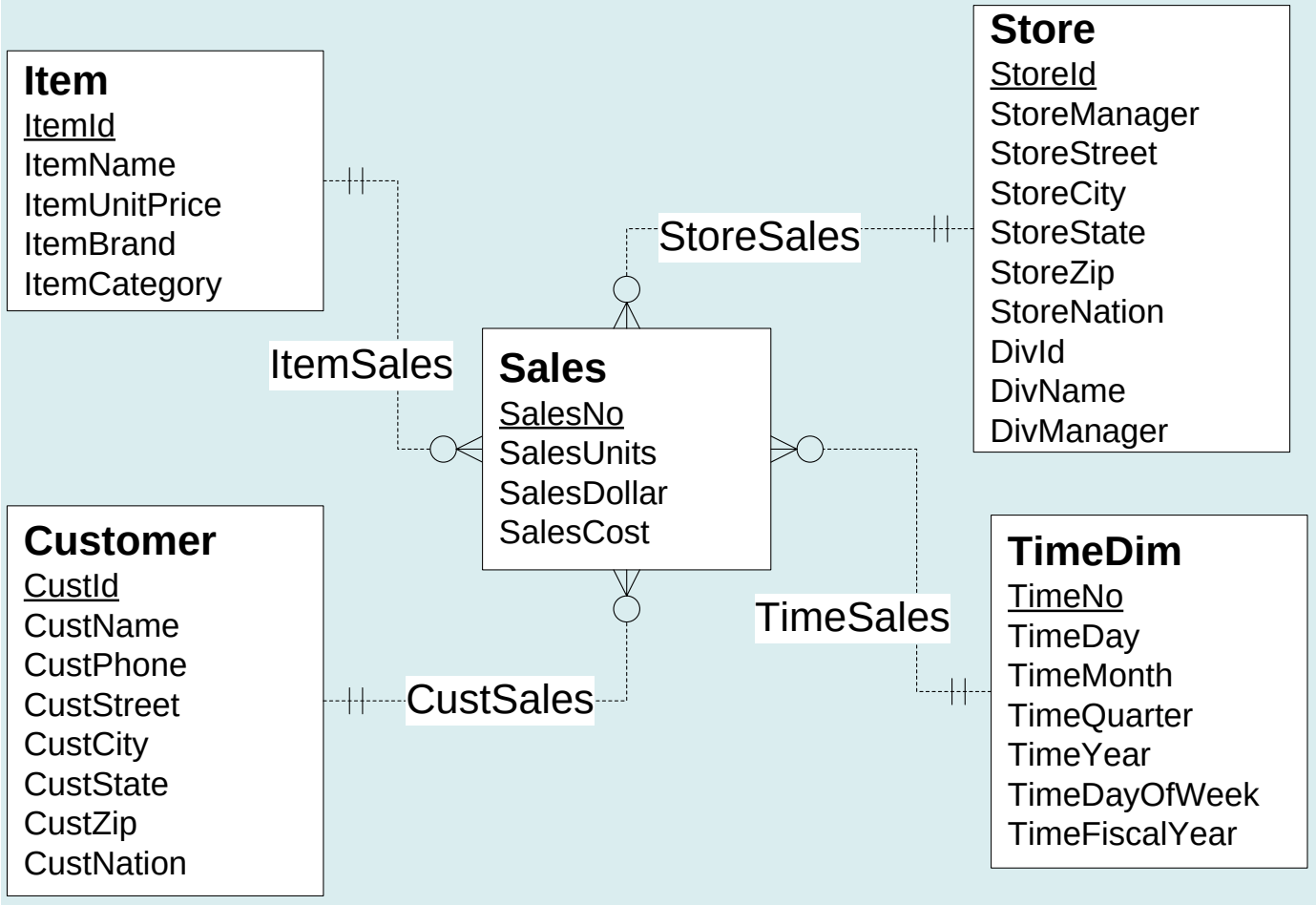
Module 3
Data Warehouse Design Practices and Methodologies

Lesson 2: Table Design Patterns

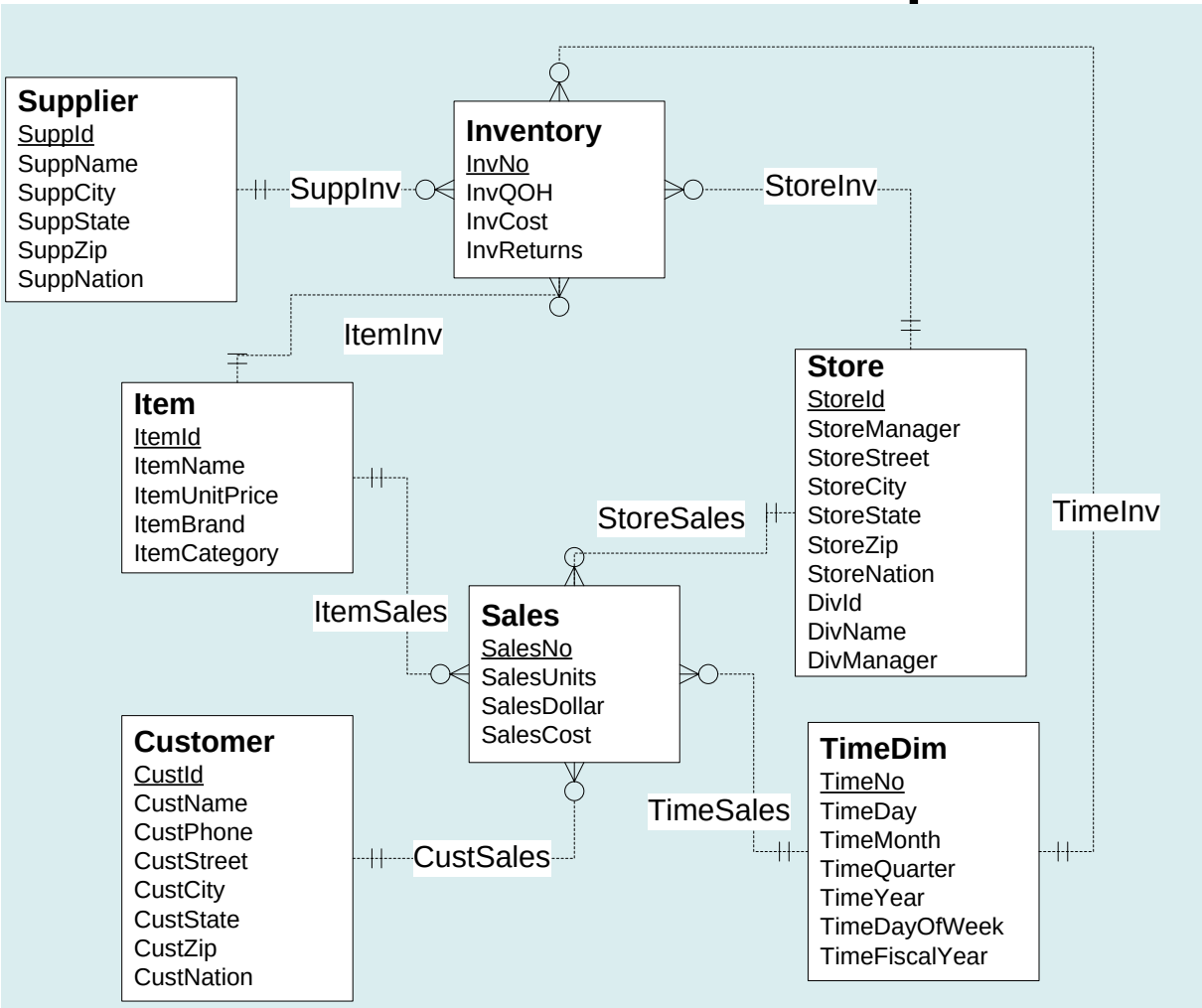
Lesson Objectives

- Explain schema patterns
- Explain patterns for historical integrity
- Reflect on the importance of historical integrity

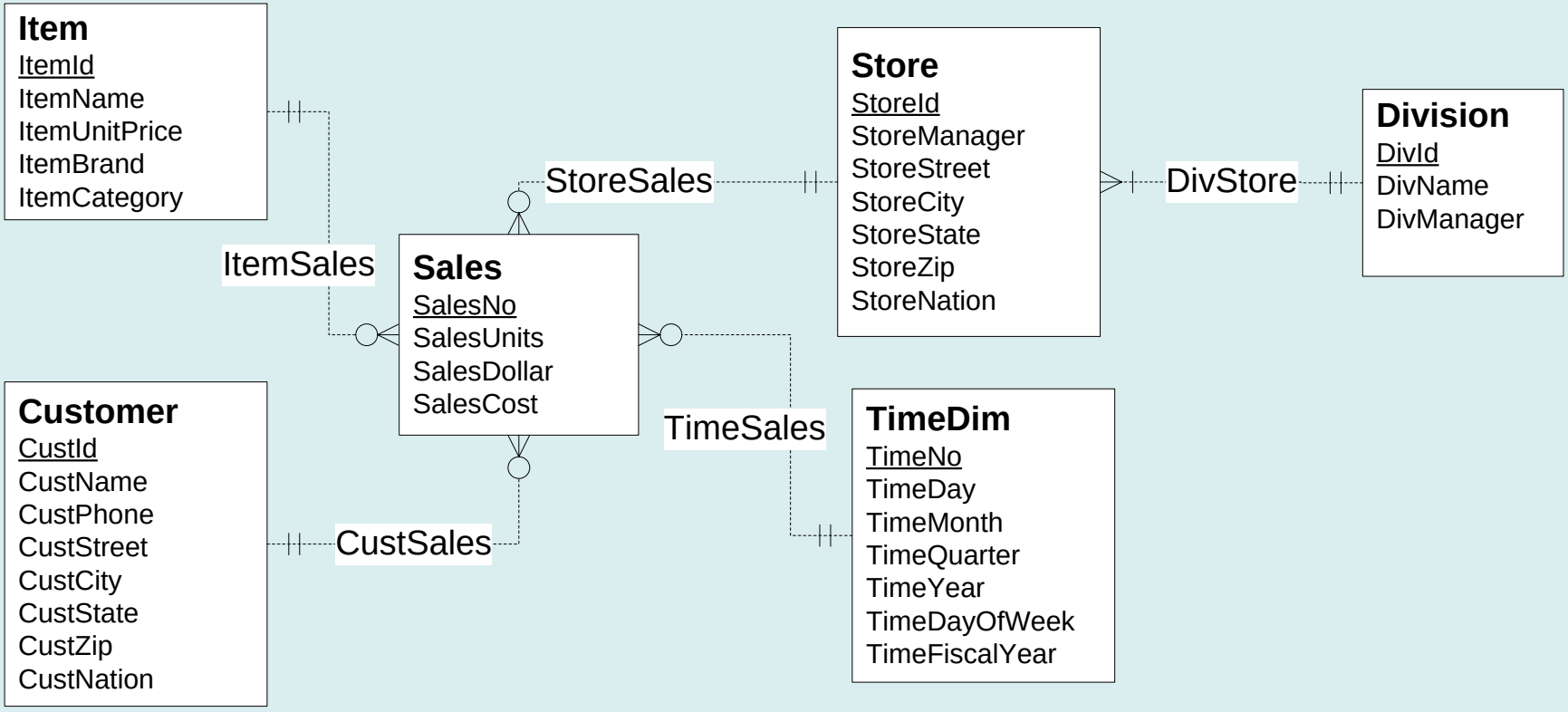
Star Schema Example



Constellation Schema Example



Snowflake Schema Example



Time Representation for Fact Tables

- Alternatives
  - Timestamp
  - Time dimension table for organization specific calendar features
- Variations
  - Time of day columns
  - Accumulating fact table for representation of multiple events

Historical Integrity for Dimensions

- Primarily an issue for dimension changes
- Fact rows no longer historically accurate after a dimension update
- Determine importance of history preservation for dimension columns
- Some inaccuracy tolerated with summary query results

Historical Integrity Examples

Type I Representation

Customer
CustId
CustName
CustPhone
CustStreet
CustCity
CustState
CustZip
CustNation

Type II Representation

Customer
CustId
VersionNo
CustName
CustPhone
CustStreet
CustCity
CustCityBegEffDate
CustCityEndEffDate
CustState
CustZip
CustNation

Type III Representation

Customer
CustId
CustName
CustPhone
CustStreet
CustCityCurr
CustCityCurrBegEffDate
CustCityCurrEndEffDate
CustCityPrev
CustCityPrevBegEffDate
CustCityPrevEndEffDate
CustCityPast
CustCityPastBegEffDate
CustCityPastEndEffDate
CustState
CustZip
CustNation

Summary

- Schema patterns especially the constellation schema for shared fact tables
- Time representation for fact tables
- Historical integrity for dimensions