Business School
UNIVERSITY OF COLORADO DENVER

Information Systems Program

Module 3
Relational Data Model and CREATE TABLE Statement

Lesson 2: Integrity Rules

Lesson Objectives

- Identify 1-M relationships and associated primary keys (PKs) and foreign keys (FKs)
- Find errors in rows with either orphan FKs or missing FKs
- Identify situations for FK requirements
  - FK is necessary
  - FK can have the null value

Definitions

Null value

- Absence of a value (missing value) or Nothing
- Actual value unknown or not applicable for a row

Primary key (PK)

- Column or combination of columns with unique values in each row (ID=, No.)
- No extraneous columns (minimal)

Foreign key (FK)

- Column or combination of columns
- Related to a primary key in a related table
- Same data type and often same name as related PK

Integrity Rules

Entity Integrity

- Primary key for each table
- No missing (null) values for primary keys
- Ensures traceable entities

Referential Integrity

- Two kinds of values for a foreign key in a row
- Match a primary key value of a related table (usual)
- Null value (unusual)
- Ensures valid references among tables

Integrity Rule Violations

Student

StdNo	StdLastName
123-45-6789	WELLS
124-56-7890	KENDALL
234-56-7890	NORBERT
--	JONES

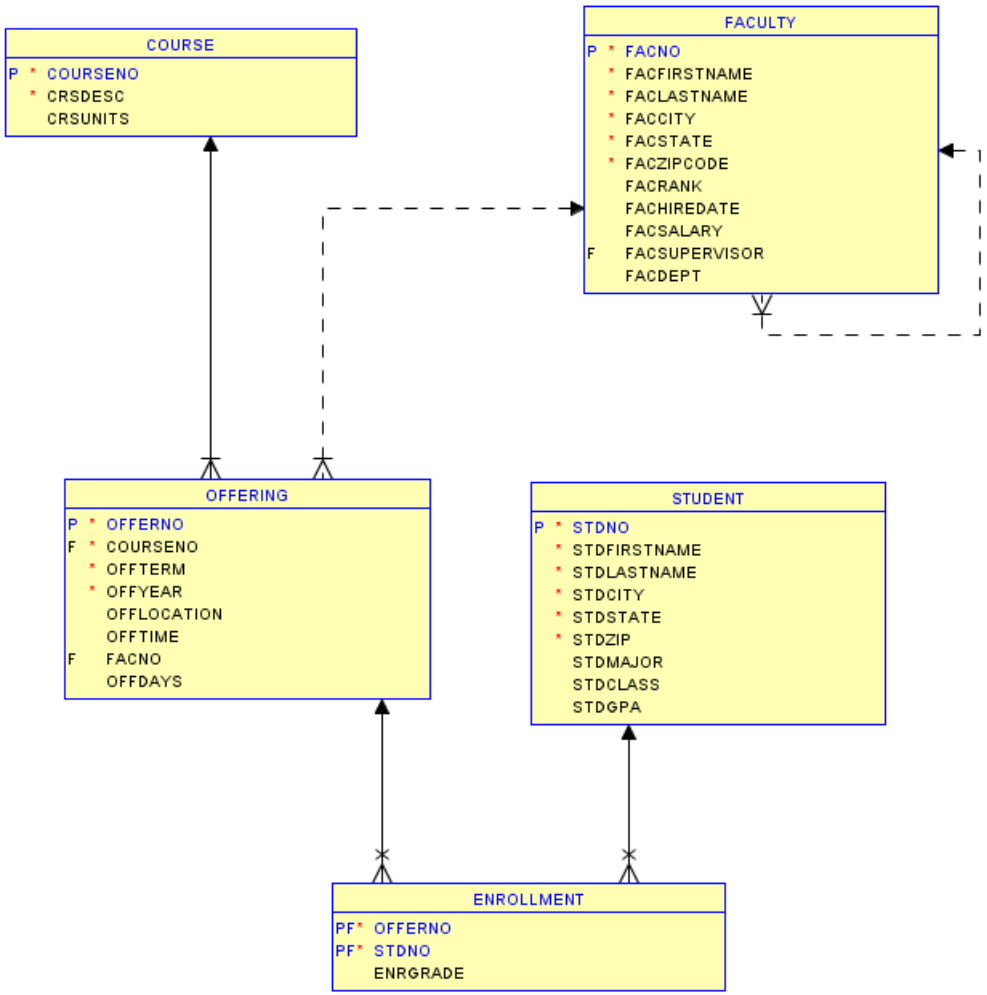
Offering

OfferNo	CourseNo
1234	IS320
4321	IS320

Enrollment

StdNo	OfferNo
123-45-6789	1234
234-56-7890	1234
123-45-6789	4321
124-56-7890	4321
234-56-7890	6789
--	4321

Oracle Relational Diagram



Summary

- Identify primary keys and foreign keys
- Visualize relationships
- Understanding existing databases is crucial to query formulation