

# 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)
- Actual value unknown or not applicable for a row

## Primary key (PK)

- Column or combination of columns with unique values in each row
- 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

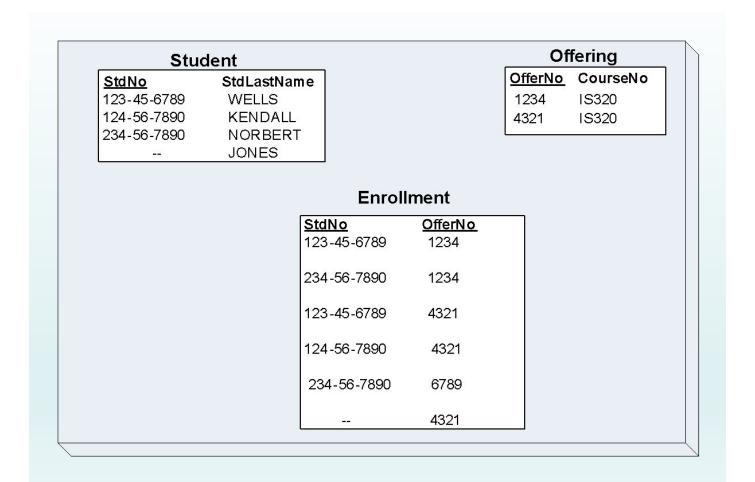
## Referential Integrity

- 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





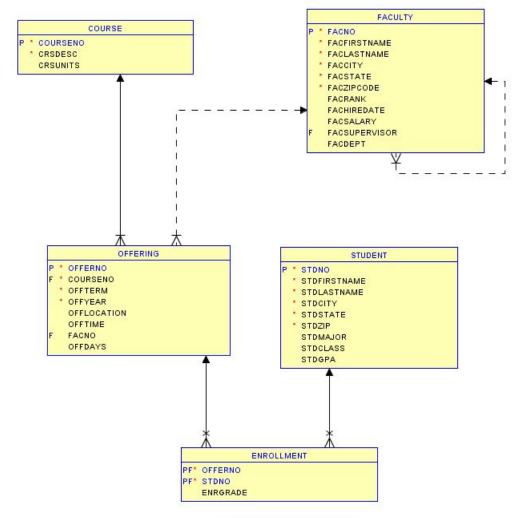
### Integrity Rule Violations







#### Oracle Relational Diagram







### Summary

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

