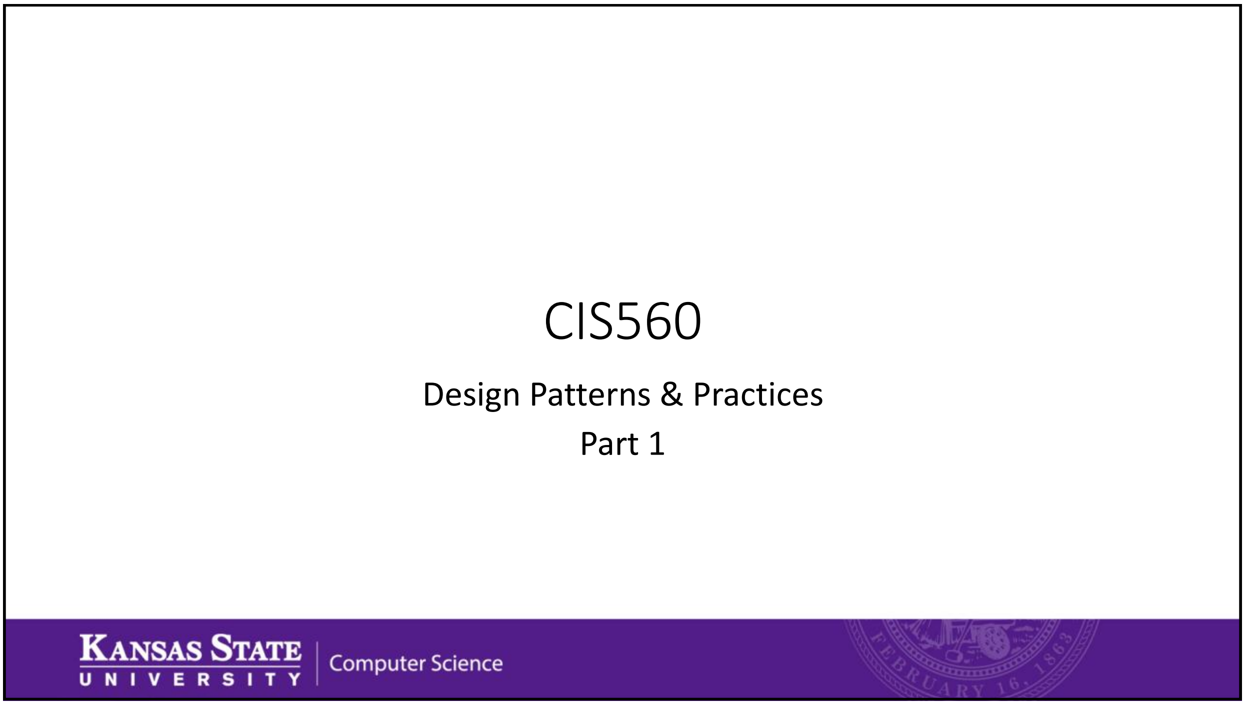

CIS560

Design Patterns & Practices

Part 1

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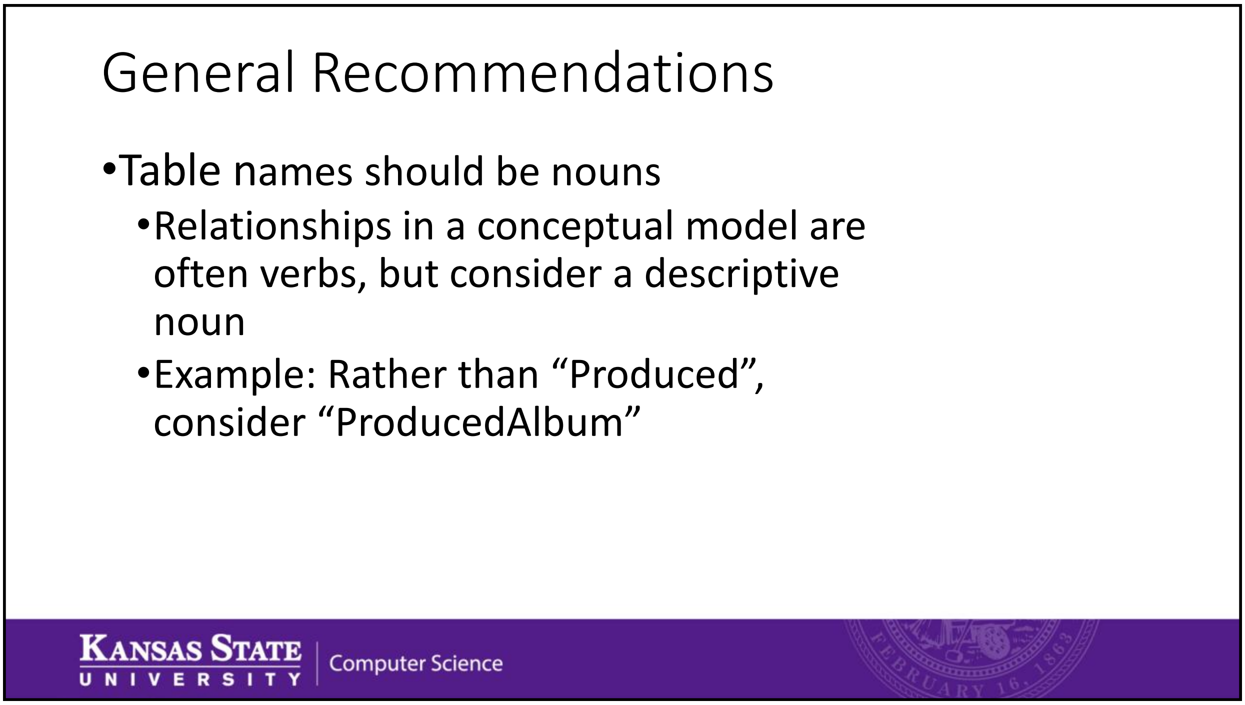

General Recommendations

- Table names should be nouns
  - Relationships in a conceptual model are often verbs, but consider a descriptive noun
  - Example: Rather than “Produced”, consider “ProducedAlbum”

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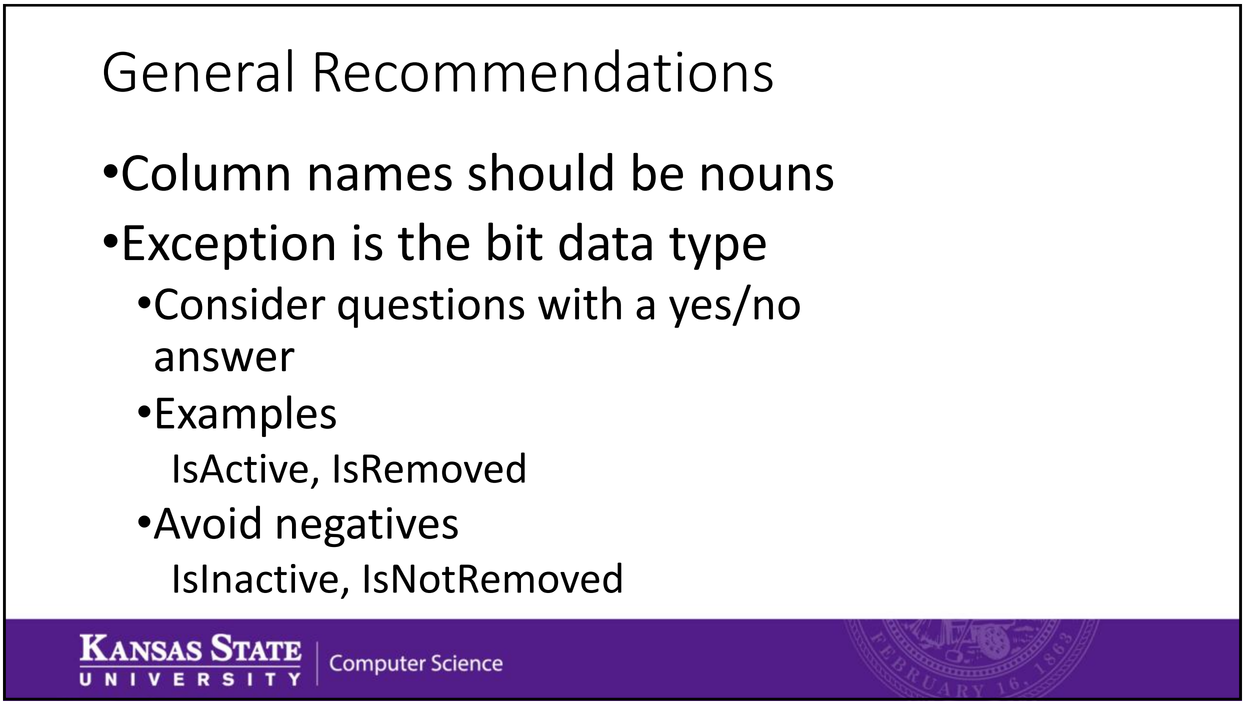

General Recommendations

- Column names should be nouns
- Exception is the bit data type
  - Consider questions with a yes/no answer
  - Examples
    IsActive, IsRemoved
  - Avoid negatives
    IsInactive, IsNotRemoved

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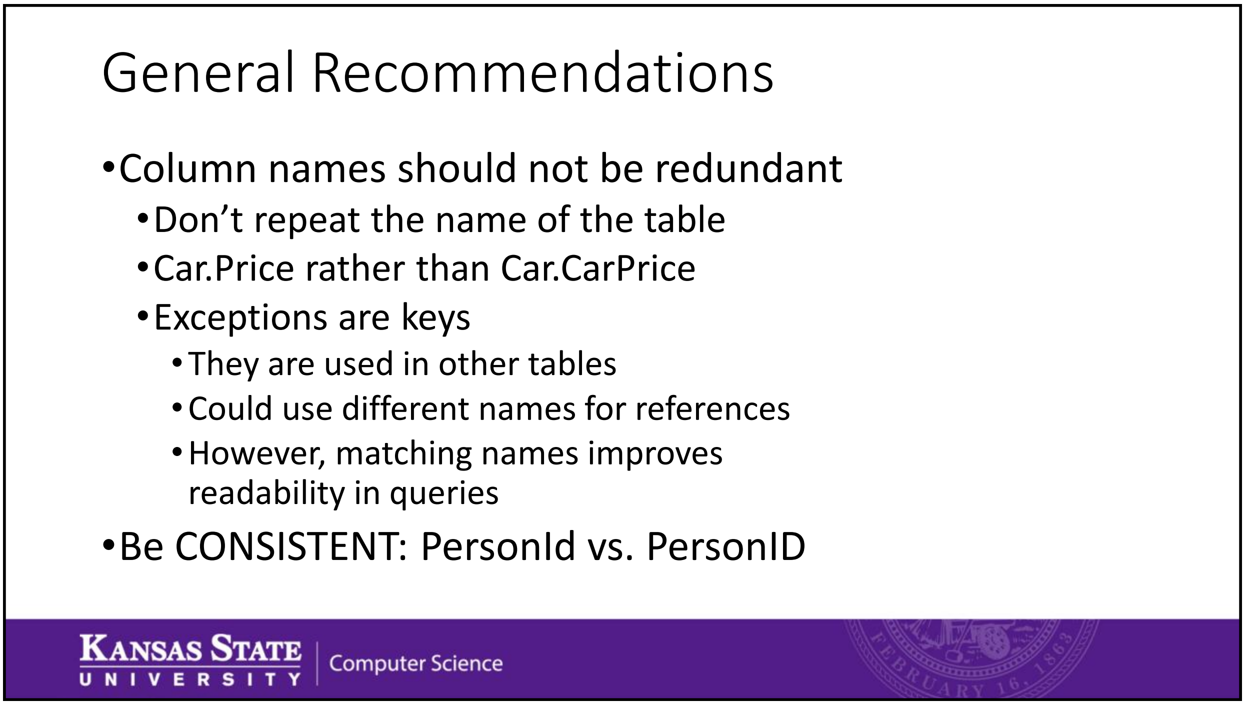

General Recommendations

- Column names should not be redundant
  - Don’t repeat the name of the table
  - Car.Price rather than Car.CarPrice
  - Exceptions are keys
    - They are used in other tables
    - Could use different names for references
    - However, matching names improves readability in queries
- Be CONSISTENT: PersonId vs. PersonID

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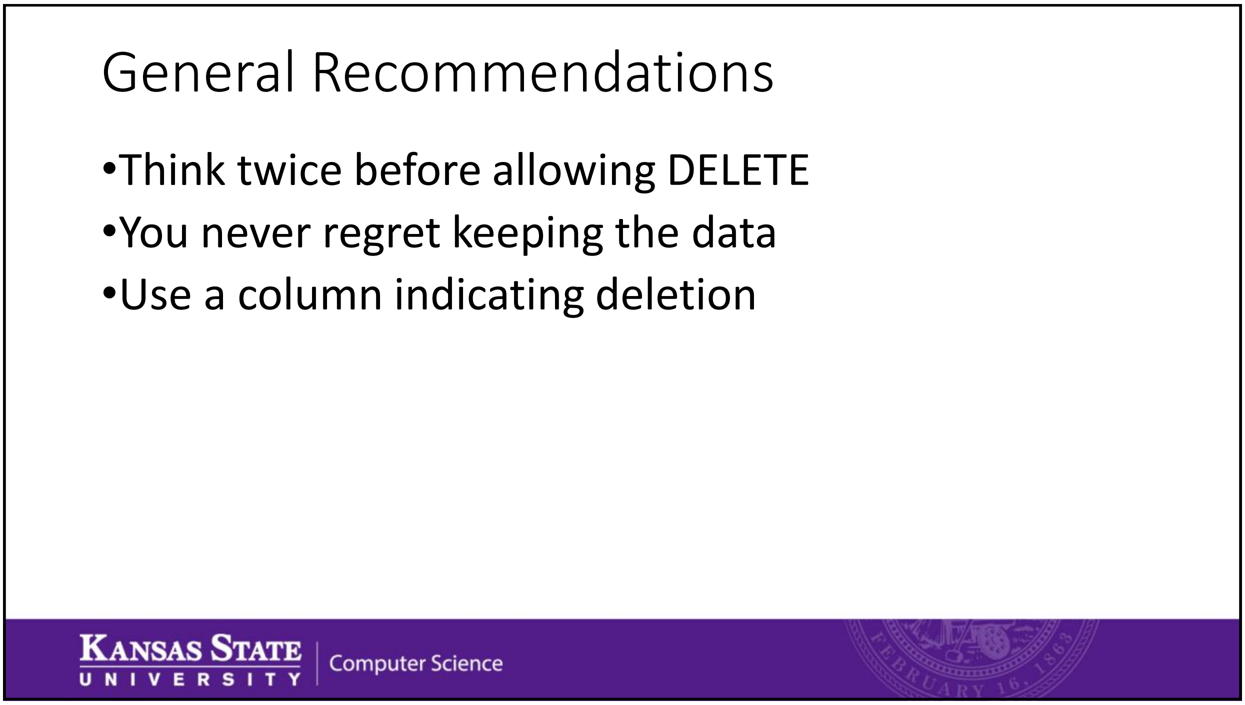
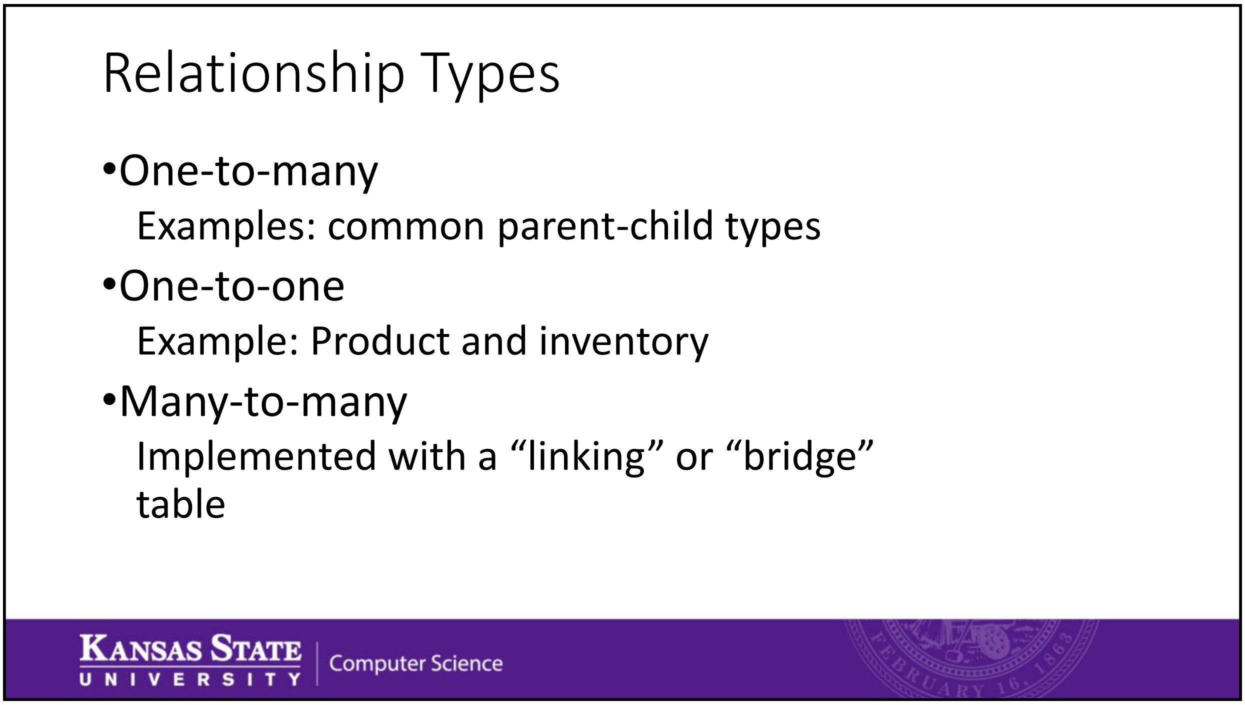
3



General Recommendations

- Think twice before allowing DELETE
- You never regret keeping the data
- Use a column indicating deletion

4



Relationship Types

- One-to-many
  Examples: common parent-child types
- One-to-one
  Example: Product and inventory
- Many-to-many
  Implemented with a “linking” or “bridge” table

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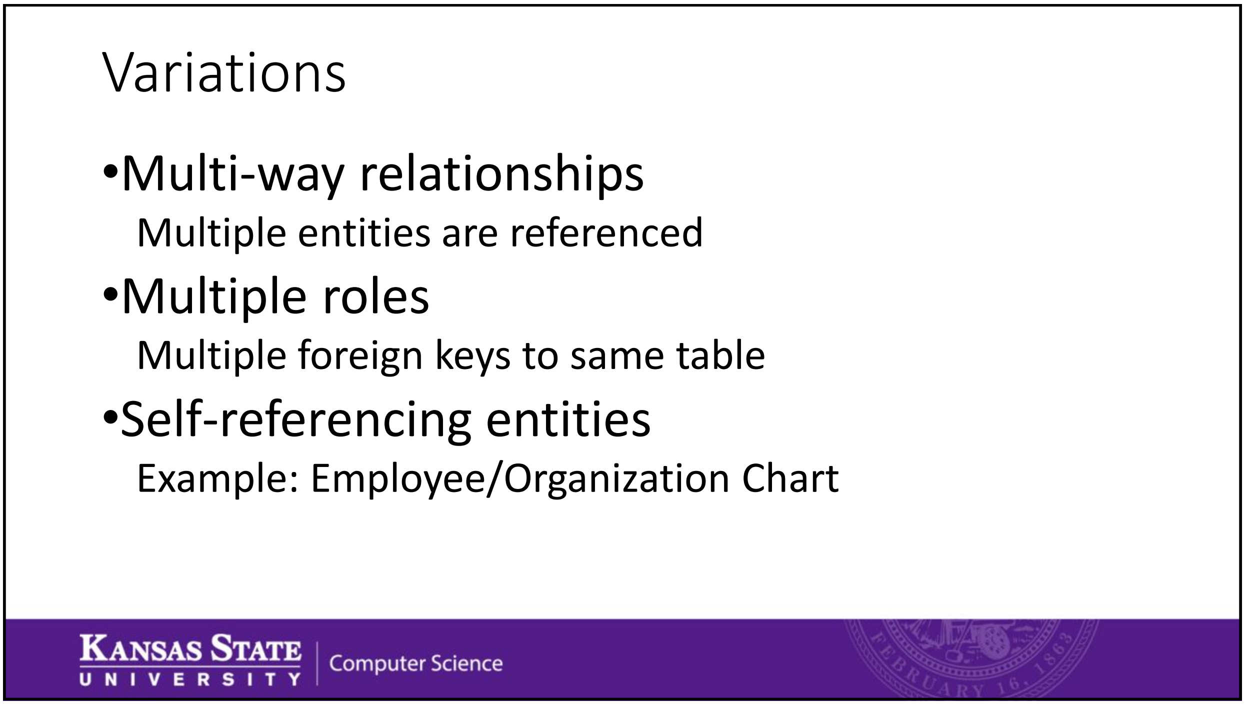
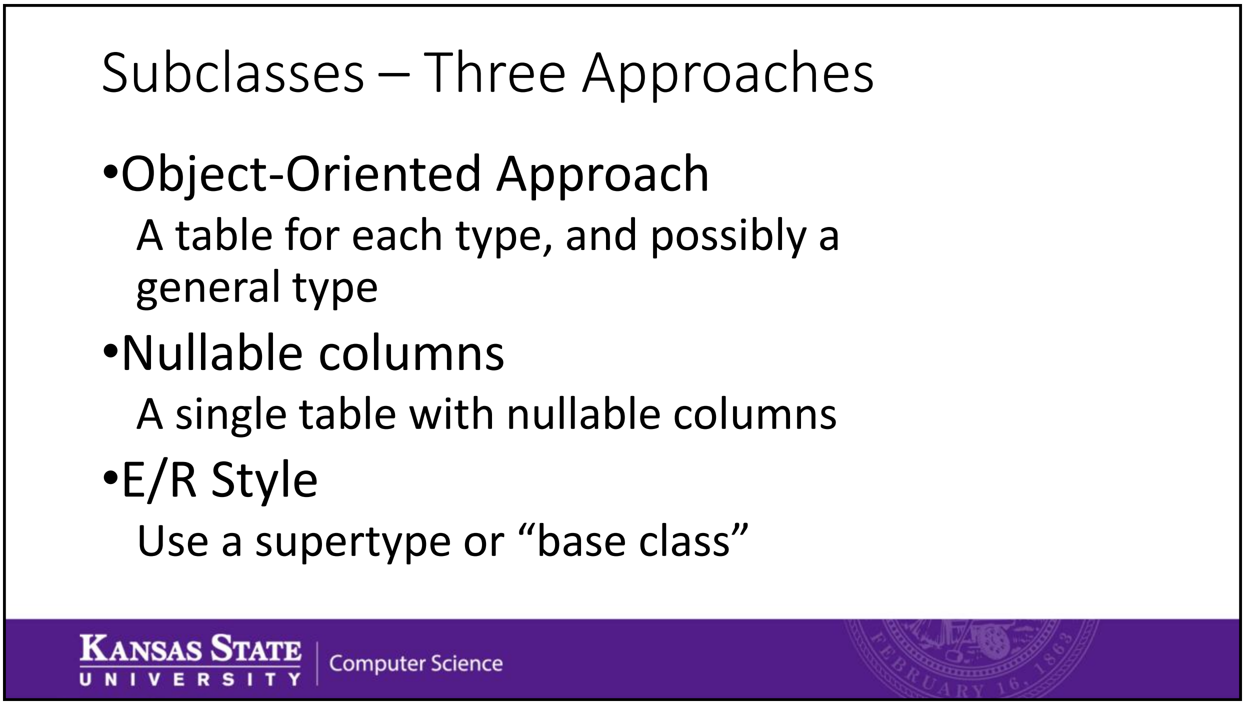


Variations

- Multi-way relationships
  - Multiple entities are referenced
- Multiple roles
  - Multiple foreign keys to same table
- Self-referencing entities
  - Example: Employee/Organization Chart

6



Subclasses – Three Approaches

- Object-Oriented Approach
  - A table for each type, and possibly a general type
- Nullable columns
  - A single table with nullable columns
- E/R Style
  - Use a supertype or “base class”

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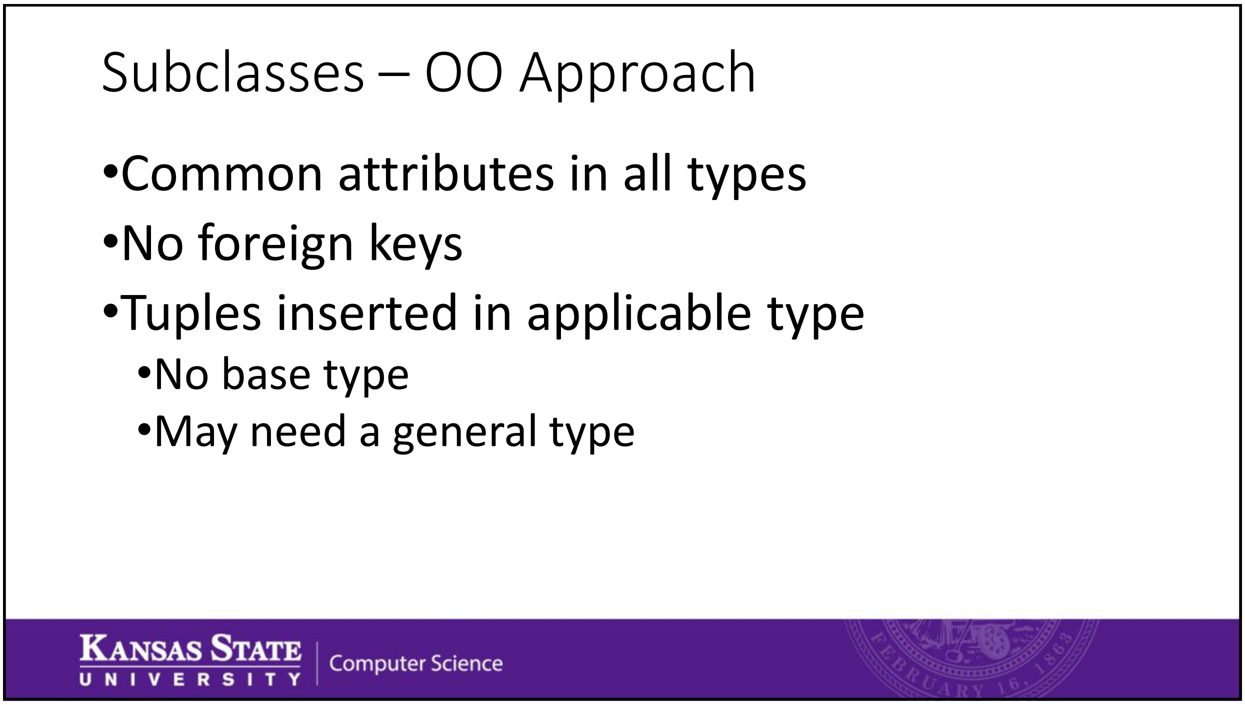
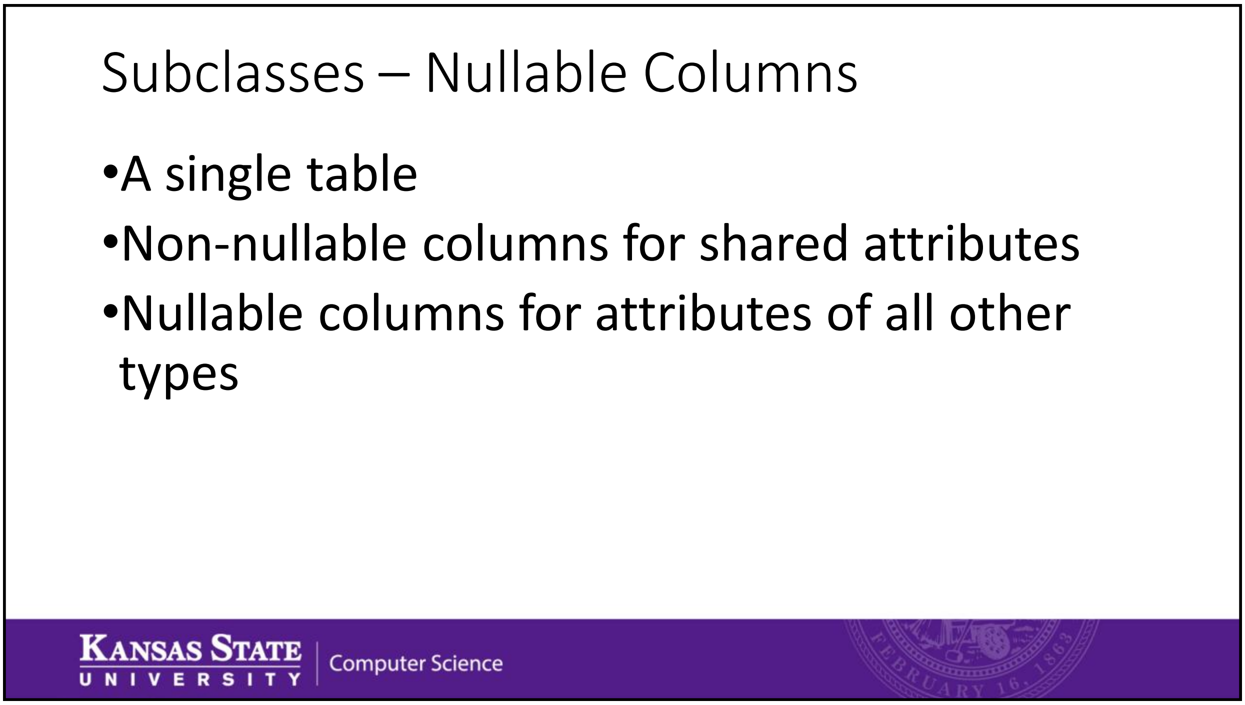


Subclasses – OO Approach

- Common attributes in all types
- No foreign keys
- Tuples inserted in applicable type
  - No base type
  - May need a general type

8



Subclasses – Nullable Columns

- A single table
- Non-nullable columns for shared attributes
- Nullable columns for attributes of all other types

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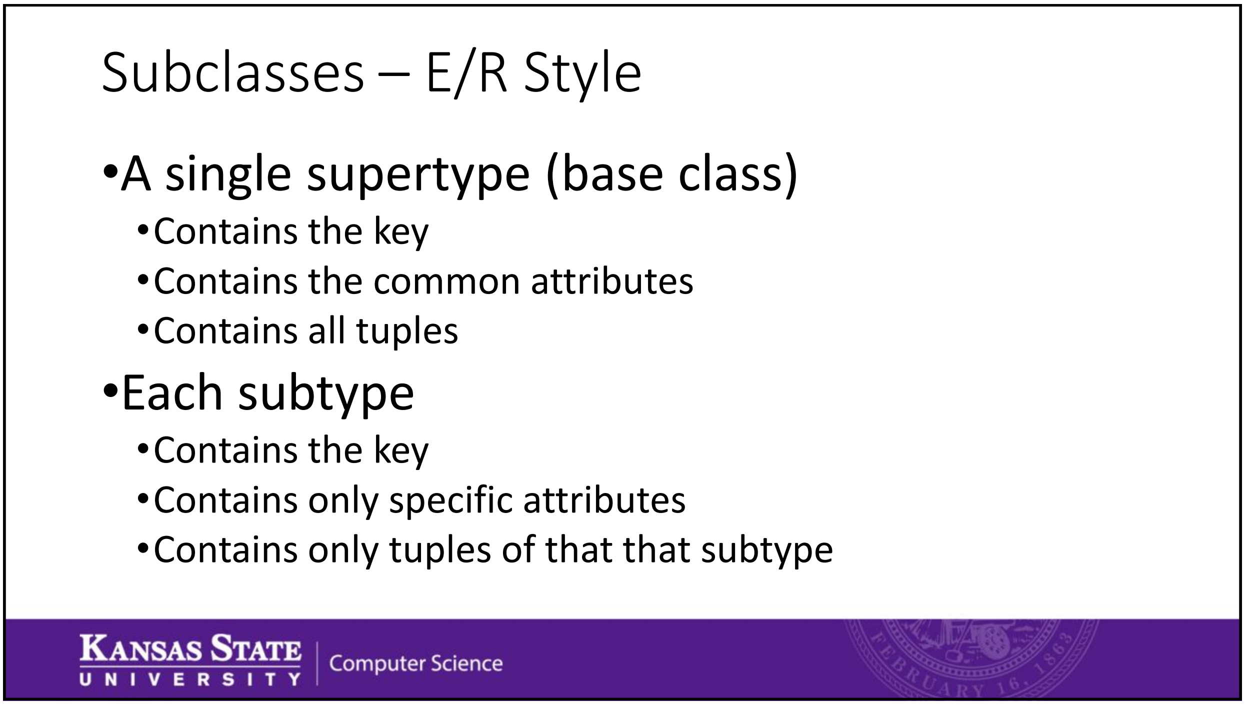

Subclasses – E/R Style

- A single supertype (base class)
  - Contains the key
  - Contains the common attributes
  - Contains all tuples
- Each subtype
  - Contains the key
  - Contains only specific attributes
  - Contains only tuples of that that subtype

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