

CS 2704

Topic:
Design Example Supplement

Thinking about Features

- Can use the system features to refine design
 - Identify class responsibilities - what is necessary to implement features
 - Identify class relationships - how should classes interact
 - Eliminate classes if they are not used

Feature: Customer Places Order

- New customer scenario:
 - Give identification, shipping, and billing info
 - Specify order
 - for each bicycle in order specify
 - frame
 - components
 - Commit to order

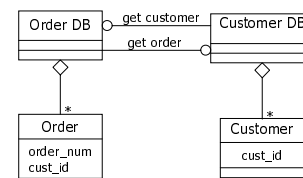
Feature: Customer Places Order

- Existing Customer scenario
 - “Login” with customer id
 - New issue: security
 - Specify order
 - for each bicycle in order specify
 - frame
 - components
 - Commit to order

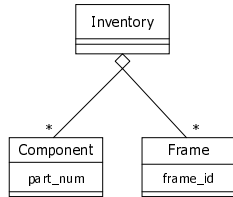
Objects used in Placing Order

- Order
- Bicycle = frame + components
- Customer
- Replacements
- Inventory
- Order DB
- Customer DB

Current Class Relationships



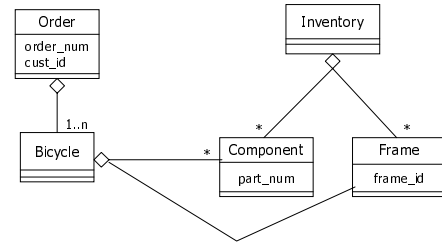
Inventory Relationships



CS 2704 Design Example
Supplement

7

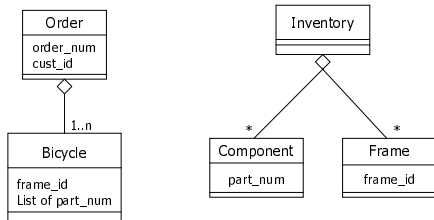
Inventory vs Order Objects



CS 2704 Design Example
Supplement

8

Order Relationships Again



CS 2704 Design Example
Supplement

9

Design Issue

- Not all relationships explicit
- Examples:
 - Customer and Order
 - Bicycle to Frame and Component
 - Inventory to Order DB
- First two handled by cross-reference
- Latter can be handled by UI

CS 2704 Design Example
Supplement

10

Example Implicit Relationship

- Before bicycle goes into production need to check that requested components exist
- If not replace by listed replacements
- Two approaches:
 - substitute before giving order to production
 - production apply substitution

CS 2704 Design Example
Supplement

11

Putting Bike into Production

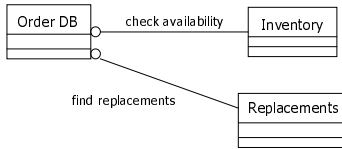
- Choices:
 - Order DB keeps track of orders
 - easier for customer order tracking
 - Production queue keeps track of unfilled orders
- Second approach is shown in other set of notes

CS 2704 Design Example
Supplement

12

Handling Replacements

Approach 1: replacements found before passing order

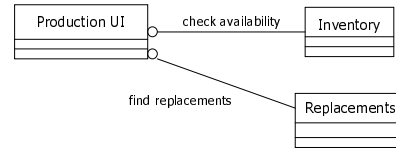


CS 2704 Design Example
Supplement

13

Handling Replacements (2)

Approach 2: replacements found during production



CS 2704 Design Example
Supplement

14