

## INF 111 / CSE 121

Discussion Session  
Week 6 - Fall 2007

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## Agenda

- Assignment 1
  - Use of Excel formulas
  - Consistency
- Assignment 2
  - Example of Use Case Template
- Tools
  - ArgoUML

## Assignment 2

- Example of Use Case Template

USE CASE 4:1	Add to Cart:1
Goal in Context:1	Add item to cart and view current items in the cart:1
Preconditions:1	Buyer has pressed the "Add to Cart" button:1
Success End Condition:1	The selected item has been added to the cart and all the items currently in the cart are successfully displayed to the Buyer:1
Failed End Condition:1	The selected item was not added to the cart or the Buyer cannot see all the items that are currently in the cart :1
Primary, secondary Actors:1	Buyer:1
Trigger:1	"Add to Cart" button is clicked:1
DESCRIPTION:1	Step:1 Action:1
1:1	The system should check if the item is already in the cart. If the item is not in the cart, the item should be added with quantity one:1
2:1	Include "Use Case 8. View Cart":1
EXTENSIONS:1	Step:1 Branching Action:1
1:1	1:1
SUB-VARIATIONS:1	1:1 Branching Action:1
1:1	If the item is already in the cart, the system should increment the quantity value by one:1

## ArgoUML

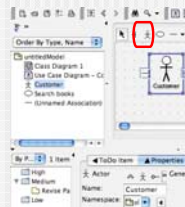
- ArgoUML is an open source graphical software design environment.
- It supports the design, development and documentation of object-oriented software applications.
- It is platform independent because it uses Java.
- It was created by Jason Robbins and his research team at University of California, Irvine.
- The first release was available in 1998.

## Case Study

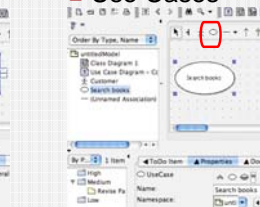
- System to buy books online
  - Customer
    - Search books
    - Add book to shopping cart
    - Remove book from shopping cart
    - Check out shopping cart
    - Review contents of shopping cart
  - Administrator
    - Create books
    - Review online orders

## Use Case Diagram

- Actors

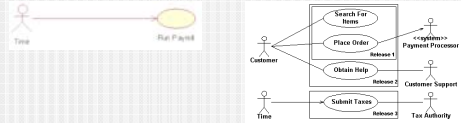


- Use Cases



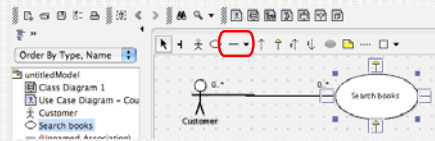
## Use Case Diagrams

- Remember ... an actor represents a role of a user that interacts with the system that you are modeling. The user can be a human user, an organization, a machine, or another external system.



## Use Case Diagram

- Associations



## Use Case Diagram

- Include

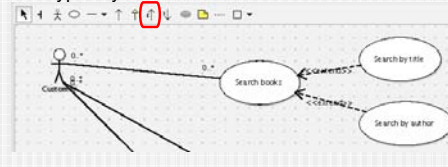
- An include relationship is a relationship in which one use case (base) includes the functionality of another use case (inclusion). The include relationship supports the reuse of functionality in a use case model.



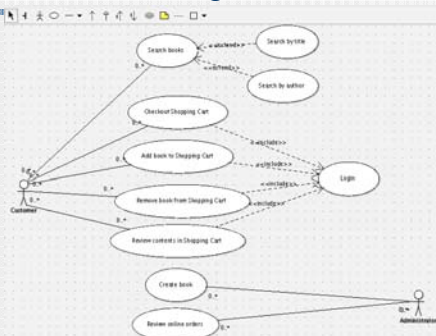
## Use Case Diagram

- Extend

- You can use an extend relationship to specify that one use case (extension) extends the behavior of another use case (base). This type of relationship reveals details about a system or application that are typically hidden in a use case.



## Use Case Diagram



## Class Diagram

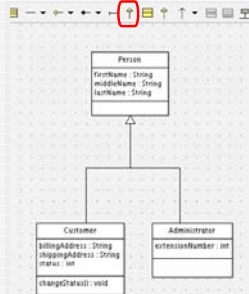
- Class
- Attributes
- Operations



## Class Diagram

### ■ Generalization

A generalization is used when two classes are similar, but have some differences.



## Class Diagram

### ■ Association and Multiplicity



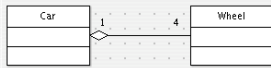
Indicator	Meaning
0..1	Zero or one
1	One only
0..*	Zero or more
*	Zero or more
1..*	One or more
3	Three only
0..5	Zero to Five
5..15	Five to Fifteen

- A Customer can have 0 or more Shopping Carts
- A Shopping Cart belongs to a Customer

## Class Diagram

### ■ Aggregation

- An association with an aggregation relationship indicates that one class is a part of another class. In an aggregation relationship, the child class instance can outlive its parent class.



## Class Diagram

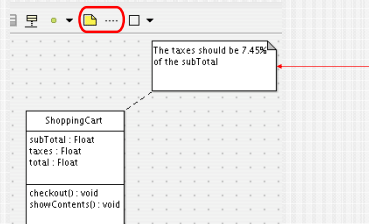
### ■ Composition

- The composition relationship is just another form of the aggregation relationship, but the child class's instance lifecycle is dependent on the parent class's instance lifecycle.

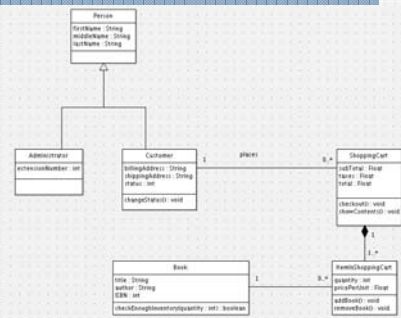


## Class Diagram

### ■ Comments



## Class Diagram



## Useful Links

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- Download: <http://argouml-downloads.tigris.org/argouml-0.24/>
- Quick Guide: <http://argouml-stats.tigris.org/documentation/quick-guide-0.24/>
- User Manual: <http://argouml-stats.tigris.org/documentation/manual-0.24/>
- Include, Extend: <http://publib.boulder.ibm.com/infocenter/rtnlhelp/v6r0m0/index.jsp?topic=/com.ibm.xtools.modeler.doc/topics/cinclude.html>