Please answer the following question(s).
If the assessment includes multiple-choice questions, click the "Submit Answers" button when you have completed those questions.

You have 120 minutes to take this assessment.
Please complete this assessment by Thu Dec 20 2007 22:00:33 GMT+0800.

1. Go to bottom of question.

# *Customer Information System*

## Prerequisites, Goals, and Outcomes

*Prerequisites:* Before you begin this assessment, you need mastery of the following:

- *UML*
  - Knowledge of class diagram notation
- *Object-Oriented Design*
  - Knowledge of modeling concepts:
    - Identifying classes
    - Identifying relationships between classes
    - Identifying class attributes
    - Identifying class methods

*Goals:* Reinforce your object-oriented design skills

*Outcomes:* You will master the following skills:

- Produce a UML class diagram, from a specification, that shows:
  - classes
  - attributes
  - methods
  - relationships

## Background

In this assessment, you will create a UML model of a customer information system.

## Description

The customer information system maintains information about two different kinds of customers:

- Individual customers: For these customers, the system stores an ID and the information about a person (name, home telephone number, and email).
- Institutional customers: For these customers, the system stores an ID and provides the capability of defining one or more contact people for the institution. The system stores the following information for each contact person: name, home telephone number, email, work telephone number, and the job position of the contact in the institution.

Assume that each customer has a unique ID and that IDs cannot be modified. Assume each contact for an institution has a unique name.

The system provides the following functions:

- Add a customer into the system
- Look up a customer given an ID
- Remove a customer from the system given an ID
- Add a new contact for an institutional customer
- Look up a contact given the ID of the institution and the name of the contact
- Remove a contact given the ID of the institution and the name of the contact

## Tasks

The following steps will guide you for completing this assignment:

1. Follow the technique described in page 1.2.5 Modeling Classes to model the customer information system. Use Eclipse, Violet, PowerPoint, or another tool of your choosing to draw a UML class diagram.

- Your UML class diagram should include:
    o The classes to model the customer information system and

the different kinds of customers
- o  The association relationships (including the direction, multiplicity, and association attribute)
- o  The specialization/generalization relationships
- o  The attributes and methods, including accessors and mutators (only for the attributes that can be modified)

- The class that models institutional customers should include the following methods that handle the collection of contacts (in addition to these, you may need more methods):
    - o  Method to add a new contact
    - o  Method to look up a contact given the name
    - o  Method to remove a contact given the name

- The class that models the customers information system should include the following methods that handle the collection of customers (in addition to these, you may need more methods):
    - o  Method to add a new customer
    - o  Method to look up a customer given an ID
    - o  Method to remove a customer given an ID

- Use Sun's coding conventions when naming classes, methods, and attributes.

2.  Save the UML class diagram in a SVG, GIF, or JPG format in a file named *uml-customer-system*. The extension of this file will depend on the format of the image.

## Submission

Upon completion, submit **only** the SVG, GIF, or JPG file *uml-customer-system*. The extension of this file will depend on the format of the image.

File to submit:    Upload File    Forward File    Refresh    Ready for Grading