### Name:\_\_\_\_\_\_\_\_\_\_\_\_\_

**Application Engineering and Development ISY 100**

# Exam I

## Monday Mar 9, 2009

1. Assume we add an additional attribute called “manufacturing location” to the product in the model below. Define a java method on the Product Catalog class to find the first product produced in a certain location (such as USA). Write your answer assuming we want to find a product that is produced in a certain location AND below a certain price such as productcatalog.FindProduct(location, price).

**Product Catalog**

**Product**

1. Continuing with the previous exercise, define a valid java method on the product catalog class that takes a location as a string and returns the list of all products produced in the specified location.

**Product Catalog**

**Product**

1. A company such HP has multiple product catalogs for the different product lines they offer. Some of these are software products, desktops, servers, laptops, parts, and even service and labor catalog. HP uses a Master Product Catalog as the collection of all their product catalogs. Define a java class that implements the master product catalog. Your class definition must include all the methods and attributes that are necessary to support HP’s way of doing business. Indicate if changes or additions, in terms of methods and attributes to the product catalog class are necessary. Must be clear as what these changes. Also, remember HP could choose to expand its business by introducing new lines of products as well, discontinue certain product lines, etc.

**Product Catalog**

**Business**

**MasterProduct Catalog**

**Product**

1. Suppose HP want to know the value of its total inventory. Define java code which will include a method called CalculateTotalInventory() that returns the value of all its product lines. Assume a product value is the product price times the number of products that are available in its storage facility. Must indicate where this method will reside and how it will use other methods on other classes to accomplish its result.
2. For the model below, the Location class defines street address, city, and country of where the factory is located. Define all java changes you will make to this model to implement the getAllFactoriesByCountry(countryname) method on the FactoryDirectory class. You are responsible for defining all methods and attributes necessary to return the list of factories that are located in a certain country.

**Location**

**Business**

**Factory Directory**

**Supplier**

**Factor**

1. Define what is a static variable in Java? What is the definition of a static method in Java? Show a concrete example of how to use static variables and methods in Java. This must include a class definition and a fragment of code of how to use the class and elements of the class. Your example must be show what is unique when it comes to the use of static methods and variables.