COMP H3012 - Object Orientation with Design Patterns

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Assignment 1 : Object Orientation using Design Patterns

Due date: Thursday 12th November 2009 by 3:00PM

****N.B.** Submit this assignment using Moodle before the above date.**

Assignment Marking: 15% of overall

Apply the **Abstract Factory Pattern** to the following problem:

Assume that you have been hired to implement an address book system that stores the name and addresses of customers in an international freight company. The company wishes to store Irish phone numbers and addresses and US phone numbers and addresses. The company are stressing, however, that these markets will be opened up to Asia, Australia, South America and Greater Europe in the future, and that it is absolutely essential that the system must cater for these future markets without having to completely redesign the system for each market.

This is the format of the Irish address system:

Name of Business

Street Address

City

County

This is the format for Irish phone numbers:

International Code (353)

Local code (Maximum 4 digits, e.g. 0506 or 01)

Local Number (Maximum of eight digits)

This is the format for the US address system:

Name of Business

Street address

City

State

Zip code (Maximum five digits)

This is the format for the US phone numbers:

International Code (3 digits maximum)

State code (3 digits maximum)

Local Number (Maximum 10 digits)

Hints:

Recall that the Abstract Factory pattern creates families of related or dependent objects. The pattern has an abstract base class for each family and has subclasses for each concrete implementation. The solution to this problem is to identify the two families of objects to be created and then to identify the subclasses that provide concrete implementations of these abstract classes. It is advisable to begin this assignment with a UML design of the overall system, ask for advice on the design before proceeding to the code stage. Don’t forget you can ask for assistance and clarification.

What to hand up:

A complete UML design for the pattern-based solution and working Java program. Marks will be awarded for the application of the Abstract Factory pattern. 3% of this assignment total [i.e. 3% of your final grade for the subject] will be awarded for the creation of a detailed and accurate UML design, the remainder of the marks will be awarded for the implementation of the design. Write a written explanation of how to extend your design to include Japanese address and number systems.

Note:

- Any students involved in collusion will get 0%

- Any assessments handed up LATER than the above deadline will receive 0% (If there are any genuine circumstances affecting the delivery date it is your responsibility to inform the lecturer)

Available from: Thursday, 15 October 2009, 07:25 PM

Due date: Thursday, 12 November 2009, 03:00 PM

Submission

No files submitted yet

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