

Java Object-Oriented Concepts Unit

Lesson 8 Lab 3: Product Inventory

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Lesson 8 Lab 3: Product Inventory

Objective:

Create a program that is like a product shop in a box. It could be a department store, a specialty shop or a grocery store. It will manage multiple products such as shirts, pants, coats, and other products in inventory. Allow the user to add products to inventory, add/remove stock to an existing product, and calculate the total value of a product and the total value of the entire inventory. When inventory levels for a product fall below a certain number (this should be configurable), the system should warn the user that they need to restock. Inventory must be read from and stored to a file.

All code must be fully unit tested via JUnit, where possible, and manually where necessary.

Process

This is good for practicing object-oriented programming, inheritance, and polymorphism. It starts with the creation of a Product base class from which each of the specific product classes are derived. Each of these products are then stored in, and managed by, an Inventory class.

Start first by creating the Product base class. What would be common to all products? Would you make anything abstract? Why? Make sure you fully flesh out this base class and keep in mind that you will be extending this class.

Next, design your file format. How will products be stored? How many files will you need? How will you tell a shirt from a pair of pants (or other products)? How will you instantiate the different types of product?

Finally, design the Inventory class. What data structure will you use to store your products? What methods will the Inventory class have? How will you persist product inventory? How will you load product inventory?