Assignment 1 – Java Programming

Grading guidelines:
1. *Zero marks for a submission if it does not pass the plagiarism test.*
2. *Break-up of Credits will be as follows:*
   (a) *Percentage of features implemented: 70%*
   (b) *Aesthetics: 10%*
   (c) *Whether reasonably able to answer questions: 20%*

Total marks: 80

In an online medicine shop, there are the following set of relevant entities:
- Manufacturer
- Customer
- Product
- Shops and Warehouses
- Delivery agent.

All entities have a unique id (int), and a name (String). Additionally, a *manufacturer* has a set of products which it can manufacture. Each *product* has a manufacturer who can manufacture it. *Customers* have a zip code (int) and a list of purchased products, which are initially empty. Shops and Warehouses have a zipcode (int), an inventory of the number of available copies of all products (list of java tuples)). A delivery agent has a zipcode (int), and the number of products delivered.

Your task is to design and implement a java program following the object oriented paradigm, and implementing the following functionalities:
1. Create, delete and print entities of each type. For delete print all entities of a type and then provide option to choose one.   [15 marks]
2. Add a product to manufacturer   [5 marks]
3. Add a certain number of copies of a product to a shop.   [5 marks]
4. Add an order of a product from a customer   [5 marks]
5. Process an order (can be satisfied only if the product is available at a shop in the customer's zipcode). Also assign a delivery agent who has delivered the least number products.   [25 marks]
6. List all the purchases made by a customer   [5 marks]
7. List inventory of a shop (Products and counts)   [5 marks]
8. Products made by a manufacturer   [5 marks]
9. A master text-based interface to access all the above functionalities. [10 marks]