

Write a complete C++ program, including a good comment in each function and in the main function, to do the following:

Outline: You are running an online business that sells an item (of your choice). This program will (to a limited extent) keep track of inventory.

Part A will not use arrays and Part B will use arrays.

Details:

0. main:

In the main function, you will first initialize variables, then allow the user to place as many orders as he/she wants, restocking when necessary. ALL work should be done in the functions, the job of main is to call the functions in the proper order. When the user is finished placing orders, print the number of orders placed.

1. **initialize:** this function initializes the following variables:

quantityOnHand
orderNum
backOrdered

2. **placeOrder:** this function allows a user to place an order. The function generates the next unique order number (using the variable orderNum). Then, the function prompts the user for an amount of items. If this amount is less than the quantityOnHand, the price for the order is printed. Otherwise, the price for the amount that is available is printed, and the remaining amount is printed as backordered.

3. **restock:** this function receives the quantityOnHand and adds a specific amount to it (you decide). If there is a backorder, this function should fill that order as well and modify quantityOnHand accordingly.

For example:

You initialize quantityOnHand to 100 and you decide to always restock 100 items at a time. The user places orders of 30, 40 and 50 items. When the third order is placed, you restock, but quantityOnHand will have the value of 80 when you return from restock.

Design Decisions:

Consider each parameter carefully and decide whether it should be passed as a reference parameter or passed by value.