CISC 3110 - Assignment #2 - Creating a Mini-Database Using Arrays

Overview:

What is this assignment about?

> You have recently started a small business that sells smart phones. As a startup, you offer a choice of 10 different phones. You hope to eventually grow. However, for now you would like to store the information about your products in a simple database.
>
> In this assignment you will be using parallel arrays in C++ to implement this database. The database will have some very basic functionality such as: add, update, display, print. As the semester progresses, we will add more features to this program.

The SmartPhone Database

The database will initially be implemented as three different arrays. The arrays will be of a fixed size. To give plenty of room to hold all of our products, create the arrays with 1000 elements. The three arrays will hold the following:

1. Array 1 (productID): an array of type string holding the uniqe identifying number of each phone. A productID can have letters and digits.
2. Array 2 (price): an array of type double holding the retail price of each phone.
3. Array 3 (quantity on-hand): An array of ints. This array will hold the quantitly on hand of each of our phones.

Location *i* in the productID array corresponds to location *i* in the price array and in the quantity on-hand array.

User interface

The program will use console input and output (`cin` and `cout`). The main function will display a menu, and read in user commands from the console. It will then call the appropriate function to adjust the database accordingly.
The menu should allow the following options:

1. Add item
2. Update item
3. Display item
4. Print database.
5. Exit program.

Necessary Functions

Here is a list of functions that must be written: (Note, this is not a complete list -- you may need to write other functions).

- Find a product: given a product ID number, find the location of the product in the productID array.
- Add a phone: this will add a new smartphone into the database. The user will be prompted for the three fields: productID, price, quantity on hand. Then the information may be added to the first empty location in the array. For this version of the program, you will need to add your information every time you run the program.
- Update game: this will update either the price or the quantity on hand of a given smartphone.
- Display game: displays the productID, price, and quantity on hand of a given smartphone.
- Print database: display all the information in the database, one item per line.

Error Checking

Be sure to perform error checking. For example, report an error if the user tries to display details about a smartphone that is not in the database, or the user tries to add a smartphone that is already in the database.