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C212 Final Project: Marketplace Description

The system at its base consists of Items to be placed in inventories that will be created in the marketplace. The Inventory class is a parent class of many specific genres of inventories. These include the child classes BooksInventory, MediaInventory, ElectronicsInventory, HomeGardenInventory, HealthFoodInventory, ToyInventory, ClothingInventory, and OutdoorInventory, each of which extend the inventory class and hold their type in different ArrayLists, so that the marketplace will be able to sort by category. The actual Inventory class is there to store an ArrayList of all items of each type from all buyers, so that a search with no specifications will yield all possible results from the Marketplace.The Item class will hold a name, item number, seller ID, quantity, and a price. The all are variables that will have set() and get() methods to alter and retrieve this data.

Next, the marketplace needs both buyers and sellers to function, both of which are have objects of the Account class. The Account holds a password, and email, a name, a history of items, and an ID that is generated by the marketplace that is unique to each user. Each account object will be able to return its ID, name, password, and email, alongside being able to set each of these to new values, albeit with the setID() only being able to be used when an Account is put into the Marketplace. Accounts will also be able to view their history, and also view all of their account information. Buyers will be have an object of the Account class with only the added benefit of being able to buy items from the marketplace. Seller will also have an Arraylist holding each of their items that are for sale, and will be able to add Items to their stock, remove Items from their stock, change the information of the Items, and notify a buyer for when an Item is shipped.

Next, the Item class will hold a name, item number, seller ID, quantity, and a price. Each item will be created by sellers, and the information will be inputted by them. All variables will have set() and get() methods to alter and retrieve this data. There will also be a Menu class that the user will interact with that will be able to display items from the inventory and allow the user to use the Marketplace.

Now, we are to the Marketplace class. This class will store ArrayLists of Buyers, Sellers, and a helper class called Transactions. The Transactions class is only there to hold Buyer, Seller, and Item information for each sale, and will only contain get() and set() methods for each of these. The Marketplace will give the capability to search through the total inventory via the Inventory class, or through specified categories of Items that are specified by each of the child Item classes. The Marketplace will give the ability for Buyers to buy items from a Seller as well, which will update both the Inventory and the Seller’s Items. The Marketplace will also give each Account their ID once they are added into the Marketplace, which will be unique to each user. The Marketplace will also be able to notify Sellers when they sell an Item, and provide a separate notification when they have sold their final Item of a specific type. Lastly, the Marketplace will have get() and set() methods for each of its ArrayLists so that it can update to any changes in the Marketplace.

As a final note, any information that will need to be saved and kept for the next time the program runs(inventories, transactions, etc.), we will be saving this information to a file that will be read in each time the program runs and updated on close.