

CS 115 - Introduction to Programming in Python

Lab Guide 07A

Lab Objectives: Classes

a) Create a class, **ClothingItem**, with the following data members and methods:

Data Members:

- **itemDescription**: stores the string description of the clothing item.
- **itemColor**: stores the string color of the item.
- **itemSize**: stores the char size of the item (s,m,l)
- **itemPrice**: stores the price of the item.
- **itemQuantity**: stores the quantity of the item.

Methods:

- **__init__()**: initializes the data members to the values passed as parameters. The price and quantity should be set using the set method.
- **Get and set methods** for all data members. The set for itemPrice and itemQuantity should only be set if the values passed as a parameters are greater than zero.
- **__repr__()**: returns a string representation of a ClothingItem object formatted as shown in the sample run.
- **getTotalPrice()**: calculates and returns the total stock price (price * quantity).

b) Write a script, **ClothingApp** with the following methods:

- **readItems()**: takes a String filename and a list of ClothingItems as parameters. Reads the ClothingItem data from the file and adds the items in the file to the list passed as a parameter.
- **The script** should do the following:
 - Create an empty list to store ClothingItems.
 - Add the ClothingItems in the file clothing.txt the list using the method above.
 - Display the list of ClothingItems.
 - Display all medium, gray pants.
 - Display the total price of all ClothingItems in the list.

Sample Run:

Clothing Items:

ClothingItem [itemDescription=ankle pants, itemColor=gray, itemSize=m, itemPrice=44.5, itemQuantity=35]

ClothingItem [itemDescription=short sleeve t-shirt, itemColor=white, itemSize=l, itemPrice=27.5, itemQuantity=15]

ClothingItem [itemDescription=straight cut pants, itemColor=gray, itemSize=m, itemPrice=98.0, itemQuantity=20]

ClothingItem [itemDescription=skinny pants, itemColor=black, itemSize=l, itemPrice=115.0, itemQuantity=18]

ClothingItem [itemDescription=button down shirt, itemColor=blue, itemSize=s, itemPrice=58.0, itemQuantity=12]

ClothingItem [itemDescription=spring jacket, itemColor=white, itemSize=l, itemPrice=125.0, itemQuantity=8]

All Medium Gray Pants:

ClothingItem [itemDescription=ankle pants, itemColor=gray, itemSize=m, itemPrice=44.5, itemQuantity=35]

ClothingItem [itemDescription=straight cut pants, itemColor=gray, itemSize=m, itemPrice=98.0, itemQuantity=20]

Total Inventory Value: 7696.00