

A Shopping Cart Using the ArrayList Class



In this exercise you will implement a shopping cart using the `ArrayList` class. The file `Item.java` contains the definition of a class named `Item` that models an item one would purchase (this class was used in an earlier lab). An item has a name, price, and quantity (the quantity purchased). The file `Shop.java` is an incomplete program that models shopping.

1. Complete `Shop.java` as follows:
 - a. Declare and instantiate a variable `cart` to be an empty `ArrayList`.
 - b. Fill in the statements in the loop to add an item to the cart and to print the cart contents (using the default `toString` in the `ArrayList` class). Comments in the code indicate where these statements go.
 - c. Compile your program and run it.
2. You should have observed two problems with using the default printing for the cart object: the output doesn't look very good and the total price of the goods in the cart is not computed or printed. Modify the program to correct these problems by replacing the print statement with a loop that does the following:
 - a. gets each item from the cart and prints the item
 - b. computes the total price of the items in the cart (you need to use the `getPrice` and `getQuantity` methods of the `Item` class). The total price should be printed after the loop.
3. Compile and run your program.

```
// *****  
// Shop.java  
//  
// Uses the Item class to create items and add them to a shopping  
// cart stored in an ArrayList.  
// *****  
  
import java.util.ArrayList;  
import java.util.Scanner;  
  
public class Shop  
{  
    public static void main (String[] args)  
    {  
  
        Item item;  
        String itemName;  
        double itemPrice;  
        int quantity;  
  
        Scanner scan = new Scanner(System.in);  
  
        String keepShopping = "y";  
  
        do  
        {  
            System.out.print ("Enter the name of the item: ");  
            itemName = scan.nextLine();  
  
            System.out.print ("Enter the unit price: ");
```

```
    itemPrice = scan.nextDouble();

    System.out.print ("Enter the quantity: ");
    quantity = scan.nextInt();

    // *** create a new item and add it to the cart

    // *** print the contents of the cart object using println

    System.out.print ("Continue shopping (y/n)? ");
    keepShopping = scan.nextLine();
}
while (keepShopping.equals("y"));
}
}
```

