07.05 Virtual Lecture Notes

Array Replacement

Every replacement algorithm usually involves a traversal of some kind. Let us consider the `inventory` array from TestInventory3.java with five items.

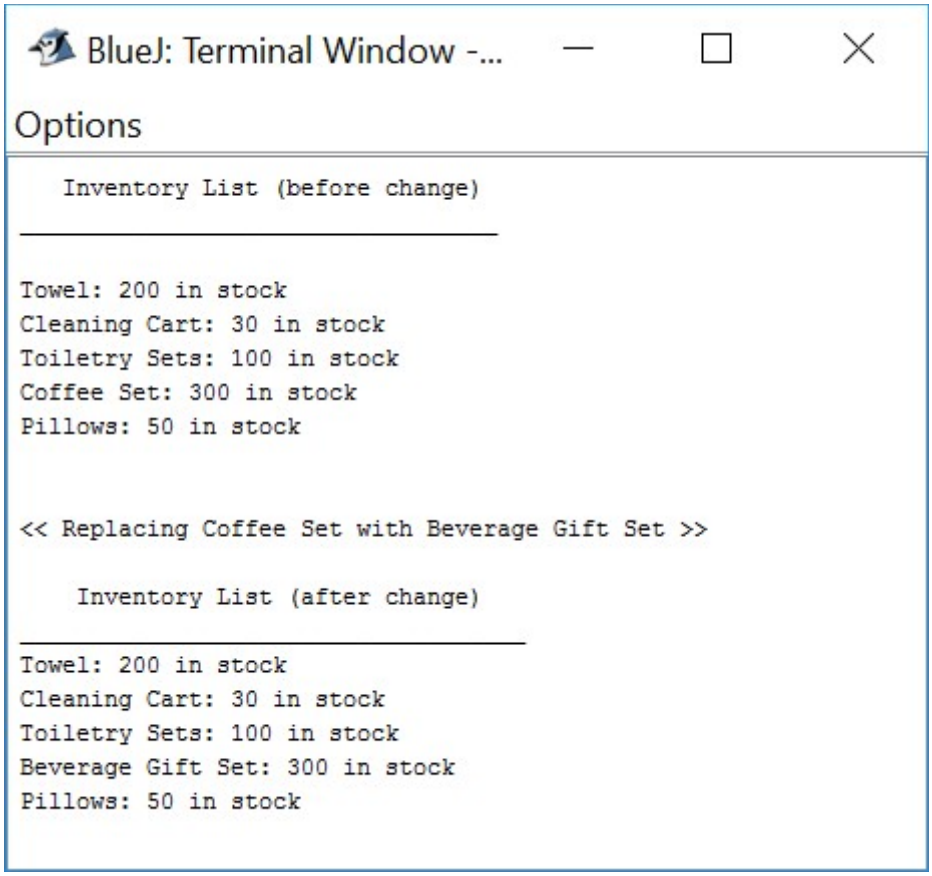
```
InventoryItem[] inventory = new InventoryItem[5];

// create inventory
inventory[0] = new InventoryItem("Towel", 200);
inventory[1] = new InventoryItem("Cleaning Cart", 30);
inventory[2] = new InventoryItem("Toiletry Sets", 100);
inventory[3] = new InventoryItem("Coffee Set", 300);
inventory[4] = new InventoryItem("Pillows", 50);
```

We want a way to change out one inventory item for a new one. For example, instead of a Coffee Set, the inventory will include Beverage Gift Sets.

How do we replace that item? The answer is first we traverse through the list to find the Coffee Set item. This will require a loop that traverses through the array and then uses an if statement to see if the name matches Coffee Set. Then we set the name for that index position to Beverage Gift Sets.

```
public static void changeItem(InventoryItem[] itemList, String
find, String replace)
{
     for(int index = 0; index < itemList.length; index++)
          if(itemList[index].getName().equals(find))
               itemList[index].setName(replace);
}
```

If we test it by first printing an inventory list before changing, and then after changing, we get the following output:



Examine the program and try to make some changes of your own. What other change methods would you like to add to your program?

ArrayList Replacement

Now, how about an `ArrayList`? Take a look at the demonstration program TestInventory4.java. Notice that it is the same except for using `ArrayList` methods.

```
public static void changeItem(List<InventoryItem> itemList, String
find, String replace)
{
     for(int index = 0; index < itemList.size(); index++)
          if(itemList.get(index).getName().equals(find))
               itemList.get(index).setName(replace);
}
```

Compare the two versions of the program side by side so you understand how the task is handled differently when using an array and an `ArrayList`. Be sure to run the program and observe the output.

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