**Mod 2: Critical Thinking**

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CSC400-1

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**Psuedo Code for new methods:**

Public int size

Return size of bag

Public combine

Bag1.addall(bag2)

Remove dupes

Add item to new bag

For (i = bag.size, i--, i > 0)

If next item is not in new bag

Add item

Else

i--

**Code:**

import java.util.ArrayList;

import java.util.HashSet;

import java.util.Set;

public class Bag2<x> {

private ArrayList<x> items;

public Bag2() {

items = new ArrayList<>();

//define initial bag

}

public void add(x item) {

items.add(item);

//adding items

}

public boolean remove(x item) {

return items.remove(item);

//remove method

}

public boolean contains(x item) {

return items.contains(item);

//contains check method

}

public int count(x item) {

int counts = 0;

for (x currentItem : items) {

if (currentItem.equals(item)) {

counts++;

}

}

return counts;

//item count method

}

public void print() {

System.***out***.println(items);

//prints contents

}

public int size() {

//returns bag size

return items.size();

}

public void combine(Bag2<x> other){

//combines 2 bags

items.addAll(other.items);

}

public static <x> Bag2<x> distinct(Bag2<x> other) {

//creates a new bag with no duplicates from another bag

Set<x> noDupe = new HashSet<>();

Bag2<x> noDupeBag = new Bag2<>();

for (x element : other.items) {

if (!noDupe.contains(element)) {

noDupeBag.add(element);

noDupe.add(element);

}

}

return noDupeBag;

}

public static void main(String[] args) {

Bag2<String> bag1 = new Bag2<>();

Bag2<String> bag2 = new Bag2<>();

bag1.add("a");

bag1.add("b");

bag1.add("c");

bag1.add("b");

bag2.add("d");

bag2.add("e");

bag2.add("f");

bag2.add("d");

bag1.print();

System.***out***.println("Bag 1 contains " + bag1.size() + " items.");

bag2.print();

System.***out***.println("Bag 2 contains " + bag2.size() + " items.");

System.***out***.println("Combining bags: ");

bag1.combine(bag2);

bag1.print();

System.***out***.println("Bag's merged, bag 1 now contains " + bag1.size() + " items.");

System.***out***.println("Removing duplicates: ");

Bag2<String> noDupes = *distinct*(bag1);

noDupes.print();

System.***out***.println("The new bag contains " + noDupes.size() + " items.");

//tests

}

}

**Git:**

https://github.com/SevRnce/csc400\_mod2