Report on s1709906's revision attempt at Inf1OP Programming Exam (sitting 1)

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Question 1

Part 1all

Compiling BonusSeller.java with the basic tests given to students in the exam succeeded.

Passed all 3 basic tests.

Compiling the submitted BonusSeller.java with the test file worked fine.

Passed all 16 tests.

Marks for this part: 50 / 50

Submitted BonusSeller.java

```
1  import java.util.HashMap;
2
3  class BonusSeller extends Seller {
4
5   private HashMap<String, Double> sales = new HashMap<String,
     Double>();
6   // names of customers and the TOTAL weight sold to each
    customer
7
8   public BonusSeller(String n) {
9    super(n);
10   sales = new HashMap<String, Double>(10);
11  }
12
13  public void sale(String name, double price) {
14   // invoke the superclass's sale method
15   super.sale(price);
16
17   Double sold = sales.get(name);
```

```
18    if (sold == null) {
19     sold = 0.0;
20    }
21
22    sold += price;
23    sales.put(name, sold);
24   }
25
26   public String toString() {
27    String s = super.toString() + "\nSales␣per␣customer:";
28    for (String key : sales.keySet()) {
29    // s = s + "\n" + key + ":" + sales.get(key) + "kg";
30     s = s + "\n" + String.format("%s:%.0fkg", key, sales.get(
     key));
31    }
32    return s;
33   }
34
35   public int calculateBonus() {
36    int count = 0;
37    int bonus = 0;
38
39    for (String key : sales.keySet()) {
40     if (sales.get(key) >= 20) {
41      count++;
42     }
43    }
44
45    if (count < 5) {
46     bonus = 0;
47    } else if (count >= 5 && count < 10) {
48     bonus = 5;
49    } else if (count >= 10) {
50     bonus = 7;
51    }
52
53
54    return bonus;
55   }
56
57   public static void main(String[] args) {
58    BonusSeller b1 = new BonusSeller("Charles");
59    b1.sale("Monsanto", 13.0);
60    b1.sale("ICI", 35.0);
61
62    System.out.println(b1);
63    System.out.println(b1.calculateBonus());
64   }
65  }
```

Marks for Question 1: 50/50

Question 2

Part 2all

Compiling Rabbit.java with the basic tests given to students in the exam succeeded.

Passed all 3 basic tests.

Compiling the submitted Rabbit.java with the test file worked fine.

Passed all 10 tests.

Marks for this part: 50 / 50

Submitted Rabbit.java

```
1  import java.util.Arrays;
2  import java.util.Collections;
3
4  public class Rabbit {
5
6   private Integer[][] r;
7   private int n;
8
9   public Rabbit(int n) {
10   this.n = n;
11   r = new Integer[n][];
12  }
13
14  public void init() {
15   if (n >= 2) {
16 //   r[0] = new Integer[1];
17 //   r[1] = new Integer[2];
18 //   r[0][0] = 1;
19 //   r[1][0] = 1;
20 //   r[1][1] = 0;
21
22    r[0] = new Integer[] {1};
23    r[1] = new Integer[] {1,0};
24
25    for (int i = 2; i < n; i++) {
26     int x = r[i-1].length;
27     int y = r[i-2].length;
28
29     r[i] = new Integer[x+y];
```

```
30
31      // use two arraycopies
32  //    Copies an array from the specified source array, beginning at the specified position,
33  //    to the specified position of the destination array. A subsequence of array components are copied
34  //    from the source array referenced by src to the destination array referenced by dest.
35  //    The number of components copied is equal to the length argument.
36  //    The components at positions srcPos through srcPos+length-1 in the source array are copied into positions
37  //    destPos through destPos+length-1, respectively, of the destination array.
38
39      System.arraycopy(r[i-1], 0, r[i], 0, r[i-1].length); // first part [x,_,_]
40      System.arraycopy(r[i-2], 0, r[i], r[i-1].length, r[i-2].length); // second part [_,x,x]
41  //
42  //    System.out.println(Arrays.toString(r[i]));
43
44    }
45   }
46  }
47
48  public String toString() {
49   String s = "";
50   for (int i = 0; i < n; i++) {
51    s = s + Arrays.toString(r[i]) +"\n";
52   }
53   return s;
54  }
55
56  public int subsequenceIndex(Integer[] target) {
57   return Collections.indexOfSubList(Arrays.asList(r[n-1]), Arrays.asList(target));
58  }
59
60  public static void main(String[] args) {
61   int n = Integer.parseInt(args[0]);
62   if (n >= 2) {
63    Rabbit test = new Rabbit(n);
64    test.init();
65    System.out.print(test.toString());
66    System.out.println(test.subsequenceIndex(new Integer[] {1,1,0}));
67    System.out.println(test.subsequenceIndex(new Integer[] {1,1,1}));
68   }
```

```
69  }
70 }
```

Marks for Question 2: 50/50

Total marks: 100 / 100