CS 61B Discussion 3: {O,b,j,e,c,t,s} Fall 2018

1 Boxes and Pointers II

Draw a box and pointer diagram for each code block.

(a)
```
char a = ’a’; char b = ’a’;
b = ’b’;
int[] x = {1, 2, 3}; int[] y = x;
y[2] = 7;
```

(b)
```
IntList myList = IntList.list(1, 2, 3);
IntList myList2 = myList;
myList.tail.tail.head = 7;
```

(c)
```
IntList[] myList3 = new IntList[3];
myList3[0] = IntList.list(1, 2);
myList3[1] = IntList.list(2);
```

2 Objects Refresher

Answer the following questions about the `Avatar` class.

```
1  public class Avatar {
2      public static String electricity; public String fluid;
3
4      public Avatar(String str1, String str2) {
5          Avatar.electricity = str1;
6          this.fluid = str2;
7      }
8
9      public static void main(String[] args) {
10         Avatar foo1 = new Avatar("one ", "two");
11         Avatar foo2 = new Avatar("three ", "four");
12         System.out.println(foo1.electricity + foo1.fluid);
13         foo1.electricity = "I declare ";
14         foo1.fluid = "a thumb war";
15         System.out.println(foo2.electricity + foo2.fluid);
16     }
17 }
```

(a) Determine what would be printed after executing the main method of class `Avatar`.

(b) If we changed only line 2 such that `electricity` is an instance variable and `fluid` is a class variable instead, would this code still compile or which other lines would also need to be changed and in what way?

(c) Reverting our changes from part (b) and starting from the original code, will adding the following method to class Avatar cause any errors during compilation or execution? Why or why not?

```
public static String getFluid() {
    return fluid;
}
```

3 Min/Max

Given an array A, return a 2 element array B where B[0] is the minimum element of A and B[1] is the maximum element of A.

```
import static java.lang.Math.max; // max(a, b) returns max of a, b
import static java.lang.Math.min; // min(a, b) returns min of a, b

public static int[] minMax(int[] A) {
    int maxVal = Integer.MIN_VALUE; // smallest int in Java
    int minVal = Integer.MAX_VALUE; // largest int in Java











}
```

4 Reverse

Given an array A, reverse its elements in place (do not create any new arrays; this should be a destructive method).

```
public static void reverse(int[] A) {











}
```