

1 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;  
}
```

2 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
```

```
}
```

3 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) {
```

```
}
```