

CS1101 (AY2009/10 Semester 1)

Week 7

Trace the programs below and write the outputs.

1.

```
class TraceCode1 {  
    public static void main(String[] args) {  
        int a = 123, b = 345;  
  
        someMethod(b, a);  
        System.out.println("In main(): a = " + a);  
        System.out.println("In main(): b = " + b);  
    }  
  
    public static int someMethod(int a, int b) {  
        a += 100;  
        b--;  
  
        System.out.println("In someMethod(): a = " + a);  
        System.out.println("In someMethod(): b = " + b);  
  
        return a + b;  
    }  
}
```

2. Replace the statement `someMethod(b, a);` with the following statement:

`a = someMethod(b, a);`

What is the output?

3. Can this `swap()` method ever work? Why or why not?

```
class TraceCode3 {  
    public static void main(String[] args) {  
        int a = 123, b = 345;  
        swap(a, b);  
        System.out.println("In main(): a = " + a);  
        System.out.println("In main(): b = " + b);  
    }  
  
    public static void swap(int a, int b) {  
        int temp = a;  
        a = b;  
        b = temp;  
    }  
}
```

4.

```
class Value {
    private int myValue;

    public Value(int x) {
        myValue = x;
    }

    public int getValue() {
        return myValue;
    }

    public void setValue(int x) {
        myValue = x;
    }

    public void copyValueA(Value u, Value v) {
        u = new Value(v.getValue());
    }

    public void copyValueB(Value u, Value v) {
        u.myValue = v.myValue;
    }
}
```

```
class TestValue {
    public static void main(String[] args) {
        Value a = new Value(10);
        Value b = a;

        b.setValue(11);
        System.out.println(a.getValue() + " " + b.getValue());

        b = new Value(15);
        a.setValue(9);
        System.out.println(a.getValue() + " " + b.getValue());

        b.copyValueA(a, b);
        System.out.println(a.getValue() + " " + b.getValue());

        a.copyValueB(b, a);
        System.out.println(a.getValue() + " " + b.getValue());
    }
}
```