

# Homework 5

Q1)

```
1 public class HelloWorld {
2     static final int START = 0;
3     static int aInt = 0;
4     String aString = "";
5     static String bString = "";
6
7     final int END;
8     {
9         END = 10;
10    }
11    public HelloWorld() {
12        aString = "hello";
13        bString = "hello";
14        aInt ++;
15    }
16    public HelloWorld(int aInt) {
17        this.aInt = aInt;
18    }
19    private static int getCounter() {
20        return aInt;
21    }
22    private void setState(int aInt) {
23        this.aInt = aInt;
24    }
25    private void setBoth(HelloWorld aHelloWorld) {
26        aInt = 42;
27        aHelloWorld.setState(aInt * 2 );
28    }
29    public void setStrings() {
30        for ( int index = START; index < END; index ++ )
31        {
32            aString += index;
33            bString += index;
34        }
35    }
36    public String toString() {
37        return "" + aInt + "/" + aString + "/" + bString;
38    }
39    public static void main(String args[] ) {
40        HelloWorld aHelloWorld1 = new HelloWorld();
41        HelloWorld aHelloWorld2 = new HelloWorld(4);
42        new HelloWorld();
43        aHelloWorld1.setBoth(aHelloWorld2);
44        aHelloWorld1.setStrings();
45        aHelloWorld2.setStrings();
46        System.out.println( aHelloWorld1);
47        System.out.println( aHelloWorld2);
48        System.out.println( getCounter());
49    }
```

## memory model:

	Address	Variable Name	(Effect, Cause)	
HelloWorld Static Variables	i	alnt	(0, line 3)	(1, line 39/14) (4, line 40/20) (42, line 42/26) (84, line 42/27/23)
	ii	START	(0, line 2)	No change
	iii	bString	("", line 5)	("hello", line 39/13) ("hello0-9", line 43/31) ("hello0-90-9", line 44/31)
	iv	END	(10, line 9)	No change
aHelloWorld1	v	aString	("", line 39/4)	("hello", line 39/12) ("hello0-9", line 43/31)
		END	(10, line 39/9)	No change
aHelloWorld2	vi	aString	("", line 40/4)	("0-9", line 44/31)
		END	(10, line 40/9)	No change
unnammed	vii	aString	("", line 41/4)	("hello", line 41/12)
		END	(10, line 41/9)	No change
	aHelloWorld1	v		
	aHelloWorld2	vi		

## output

> 84 | hello 0123456789 | hello 0123456789 0123456789

> 84 | 0123456789 | hello 0123456789 0123456789

> 84

## link to table:

[https://docs.google.com/spreadsheets/d/1ygWndEsUC1sA8zMAL8DrYS7dRY6Kgyj2\\_OeeLv4STVo/edit?pli=1#gid=0](https://docs.google.com/spreadsheets/d/1ygWndEsUC1sA8zMAL8DrYS7dRY6Kgyj2_OeeLv4STVo/edit?pli=1#gid=0)