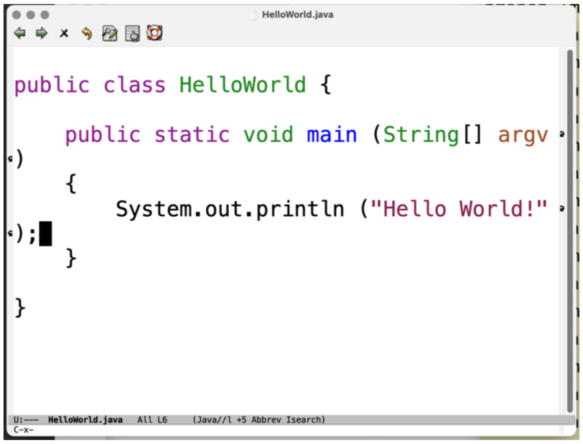
Dmitri Stanchevici
Unit 3, Some Computerese + Module 1

Ex. c.0



```
public class HelloWorld {

    public static void main (String[] argv
)
    {
        System.out.println ("Hello World!"
);
    }

}
```

```
U:---  HelloWorld.java   All L6     (Java//l +5 Abbrev Isearch)
C-x-
```

Ex. 1.5

Before loop

	HEAP						GLOBAL	
ADDRESS		120	124	128	132	…		680
VALUE		0	0	0	0			120
		A[0]	A[1]	A[2]	A[3]	…		A

i=0

ADDRESS		120	124	128	132	…		680
VALUE		0	0	0	0			120
		A[0]	A[1]	A[2]	A[3]	…		A

i=1

ADDRESS		120	124	128	132	…		680
VALUE		0	1	0	0			120
		A[0]	A[1]	A[2]	A[3]	…		A

<table>
<tr><td></td><td></td></tr>
<tr><td>i=2</td><td><table>
<tr><td>ADDRESS</td><td></td><td>120</td><td>124</td><td>128</td><td>132</td><td>…</td><td></td><td>680</td></tr>
<tr><td>VALUE</td><td></td><td>0</td><td>1</td><td>4</td><td>0</td><td></td><td></td><td>120</td></tr>
<tr><td></td><td></td><td>A[0]</td><td>A[1]</td><td>A[2]</td><td>A[3]</td><td>…</td><td></td><td>A</td></tr>
</table></td></tr>
<tr><td>i=3</td><td><table>
<tr><td>ADDRESS</td><td></td><td>120</td><td>124</td><td>128</td><td>132</td><td>…</td><td></td><td>680</td></tr>
<tr><td>VALUE</td><td></td><td>0</td><td>1</td><td>0</td><td>6</td><td></td><td></td><td>120</td></tr>
<tr><td></td><td></td><td>A[0]</td><td>A[1]</td><td>A[2]</td><td>A[3]</td><td>…</td><td></td><td>A</td></tr>
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Ex. 1.10

Probability an array of length 5 is sorted in **increasing order** is: **0.0087**

Probability an array of length 5 is sorted in both increasing and decreasing order: **0.01787**

Ex. 1.12

1. The probability of shared birthday for 10 people is **0.1149.**

2. For a better than 50% chance (p=0.5327) of seeing the same birthday, at least **24** people are needed.

Ex. 1.14

The first problem occurs when odds2 is sent for printing to printWithWhile() and printWithDo(). This is an empty array, so an attempt to print it generates a runtime error: “Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 0 out of bounds for length 0.” To fix this problem, I added an if-else statement to printTwice(). Now the array is sent for printing only if its length is greater than 0.

The second problem occurs because the while statement in printWithWhile2() lacks curly braces. Thus it repeats only the one statement immediately following it: System.out.print (“ “ + A[i]). This statement falls into an infinite loop because the condition i<A.length in the while statement never changes (the program never reaches the i++ statement). To fix this bug, I added curly braces so that both System.out.print (“ “ + A[i]) and i++ are both included in the while loop.