

6.092 Java Preparation for 6.170

IAP 2006

Java Reference Handout

<pre> package <u>lab1</u>; import <u>java.util.Random</u>; class <u>RandomHello</u> { /** * @effects uses a RandomHello object to print * a random greeting to the console */ public static void <u>main</u>(<u>String</u>[] argv) { <u>RandomHello</u> randomHello = new <u>RandomHello</u>(); System.out.println(randomHello.sayHello()); } /** * @return a random greeting from a list of * five different greetings. */ public <u>String</u> <u>sayHello</u>() { <u>String</u>[] greetings = new <u>String</u>[5]; gs[0] = "A hint for the lab!"; // YOUR CODE HERE } } </pre>	<p>program structure:</p> <p>package - location of java file in src folder</p> <p>import - to use Library classes, such as Random</p> <p>class <u>RandomHello</u> - template for making objects</p> <p>public static void <u>main</u>(<u>String</u>[] argv) - entry point; program starts execution here (static = single, separate to objects, part of class template)</p> <p>public <u>String</u> <u>sayHello</u>() - a method of RandomHello</p> <p><u>RandomHello</u> randomHello = new <u>RandomHello</u>() - create new RandomHello instance</p> <p><u>String</u>[] greetings = new <u>String</u>[5] - create an array of 5 Strings greetings[0] = "foo" - set the first String in the array to "foo", syntactic sugar for new String("foo")</p>
<p>boolean: true, false</p> <p>byte: -128 to 127</p> <p>short: -2^{15} to $2^{15}-1$</p> <p>int: -2^{31} to $2^{31}-1$</p> <p>long: -2^{63} to $2^{63}-1$</p> <p>double, float: reals, ie 3.14159, 100000e-9, 400.02</p>	<p>primitives</p>

<pre>char: 'a', 'b', ... , 'A', €, ¢, ¶</pre>	
<pre>final static <u>int</u> EMPTY_SQUARE = 0;</pre>	<p>constant final = cannot change static = single variable shared by all instances, part of class template</p>
<pre><u>char</u>[] alphabet = new <u>char</u>[26]; alphabet[0] = 'a'; alphabet[25] = 'z'; <u>String</u>[] myPets = new <u>String</u>[] { "Fluffy", "Muffy", "Scruffy" }; <u>int</u>[][] chessBoard = new <u>int</u>[8][8]; for (<u>int</u> row = 0; row < chessBoard.length; row++) { for (<u>int</u> col = 0; row < chessBoard[0].length; col++) { chessBoard[row][col] = EMPTY_SQUARE; } }</pre>	<p>arrays</p> <p>initialize when constructing</p> <p>initialize by looping, two dimensional array</p>
<pre>for (<u>int</u> i = 0; i < 10; i++) { //do something here; }</pre>	<p>for loop i = 0, 1, ... , 8, 9</p>
<pre>while (predicate) { //do something here; }</pre>	<p>while loop while predicate evaluates to true, keep doing something (that something must make predicate false eventually, or else you have an infinite loop!)</p>