

Homework – Nested Loop

1. Trace the following programs.

Program	Memory	Output
<pre>final int SIZE = 5; for (int i = 1; i < SIZE; i++) { for (int j = SIZE; j >= i; j--) { System.out.println(i * 2 + j); } }</pre>	<pre>SIZE = 5 i = 1 2 3 4 5 j = 5 4 3 2 1 0 5 4 3 2 1 5 4 3 2 5 4 3 5 4 5</pre>	<pre>7 6 5 4 3 9 8 7 6 11 10 9 13 12 ></pre>
<pre>for (int j = 22; j <= 25; j++) { for (int k = 7; k <= 10; k++) { if (j % 2 == k % 2) { System.out.println(j); } else { System.out.println(k); } } System.out.println(); }</pre>	<pre>j = 22 23 24 25 26 k = 7 8 9 10 11 7 8 9 10 11 7 8 9 10 11 7 8 9 10 11</pre>	<pre>7 22 9 22 > 23 8 23 10 > 7 24 9 24 > 25 8 25 10 ></pre>
<pre>for (int j = 8; j > 2; j-=2) { System.out.println(j + ":"); for (int k = 2; k <= j; k++) { System.out.print(j+k); } System.out.println(); }</pre>	<pre>j = 8 6 4 2 k = 2 3 4 5 6 7 8 9 2 3 4 5 6 7 2 3 4 5</pre>	<pre>8: 10111213141516 6: 89101112 4: 678 ></pre>