Arrays of Objects (15 marks):

The API for the `DigitCode` class is given below. Each instance of this class represents a two-digit code. Each digit is an integer from 0-9 (inclusive), and a code must contain two distinct digits to be valid – e.g. the codes 0,0 and 8,8 are invalid because the first and second digits in both codes are the same. The default code is 1,2 – 1 is the first digit of the code, and 2 is the second digit of the code. This class performs no error checking other than that specified in the API below.

<table>
<tr><td colspan="2">Field Summary</td></tr>
<tr><td><code>static int</code></td><td><code>DEFAULT_FIRST</code>
The first digit of the default code.</td></tr>
<tr><td><code>static int</code></td><td><code>DEFAULT_SECOND</code>
The second digit of the default code.</td></tr>
<tr><td colspan="2">Constructor Summary</td></tr>
<tr><td colspan="2"><code>DigitCode ()</code>
Constructs a new two-digit code set to the default – 1,2.</td></tr>
<tr><td colspan="2"><code>DigitCode (int first, int second)</code>
Constructs a new two-digit code. If the two parameters represent a valid code, then the code is set to <code>first</code>,<code>second</code>. Otherwise, the code will be set to the default – 1,2.</td></tr>
<tr><td colspan="2">Method Summary</td></tr>
<tr><td><code>boolean</code></td><td><code>changeCode (int old1, int old2,
int new1, int new2)</code>
Attempts to change the code to <code>new1</code>,<code>new2</code>. To do so, <code>old1</code>,<code>old2</code> must match the current code, and <code>new1</code>,<code>new2</code> must represent a valid code. Returns <code>true</code> if the code is changed, and <code>false</code> otherwise.

Example: if the current code is 1,2, then <code>changeCode(1,2,3,4)</code> will change the code to 3,4 and return <code>true</code>. If the current code is 3,4, then <code>changeCode(3,4,5,5)</code> will leave the code unchanged and return <code>false</code>.</td></tr>
<tr><td><code>boolean</code></td><td><code>isCode (int first, int second)</code>
Returns <code>true</code> if the code is <code>first</code>,<code>second</code>, and <code>false</code> otherwise.

Example: if the current code is 1,2, then <code>isCode(3,4)</code> will return <code>false</code>.</td></tr>
<tr><td><code>void</code></td><td><code>reset ()</code>
Resets the code to the default – 1,2.</td></tr>
</table>

A power failure has occurred at a company that uses DigitCodes, and they would like to know how many of their DigitCodes (stored in a complete array) have been reset to the default code. Write a code fragment in JAVA that will count the number of DigitCodes that have the default code. Note: no codes should be changed as a result of this method.

```
//DigitCode[] codes;
```