HW2: Multidimensional Arrays

1. Create a class called HW2a that creates a 2D array of characters (as in the image below). Your program should then ask the user to enter a character and call the method `aloneInRow()`, which takes a character argument as well as a two-dimensional array. The method checks if there is a row in "grid" in which the character `ch` appears exactly one time. If so, it returns the index of such a row. Otherwise, it returns –1. Your main method should print what gets returned.

```
<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>d</td>
<td>f</td>
</tr>
<tr>
<td>g</td>
<td>g</td>
<td>g</td>
</tr>
</tbody>
</table>
```

Sample outputs:

```
----jGRASP exec: java HW2b

Enter character: a
0

----jGRASP: operation complete.

----jGRASP exec: java HW2b

Enter character: b
-1

----jGRASP: operation complete.

----jGRASP exec: java HW2b

Enter character: f
1

----jGRASP: operation complete.
```

2. Create a class called HW2b that extends HW2a by creating an additional method with the same name as the previous method (`aloneInRow()`). However this method has an integer
argument and an integer 2D array. The method checks if there is a row in the 2D int array in which the integer appears **exactly** one time. If so, it returns the index of such a row. Otherwise, it returns –1. Your main method should create the int 2D array (shown below – in addition to the already created 2d array of chars) and print what gets returned from calling `aloneInRow()` with the 2D int array as well.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

Sample Output:

```---jGRASP exec: java HW2b

Enter character: a
0
Enter integer: 6
2

   ----jGRASP: operation complete.

   ----jGRASP exec: java HW2b

Enter character: b
-1
Enter integer: 7
-1

   ----jGRASP: operation complete.

   ----jGRASP exec: java HW2b

Enter character: f
1
Enter integer: 2
0
```

**Submission:** Zip up a folder (which has your name) containing both java files and output files. The output file should contain at least 3 runs of each program. Submit to the dropbox.