Display droplet count in an *n*x*n* grid

Problem Statement:

Given a plate that contains 48 or 96 wells and each well contains a number of droplets. Provide a GUI (as shown below) that provides users with a graphical representation of the data within each well.

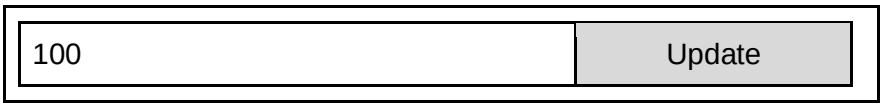
Plate Droplet Data Display X

Select Plate Data

Summary :
Total Well Count:
Total well count will low droplets:

	1	2	3	4	5	6	7	8	9	10	11	12
A	n	n	n	n	L	L	n	L	n	n	n	n
B	n	n	n	n	n	n	n	L	n	n	n	n
C	n	n	n	n	n	n	n	n	n	n	n	n
D	n	n	n	L	L	L	n	n	n	n	n	n
E	n	n	n	n	n	n	L	n	n	n	n	n
F	n	L	n	L	n	n	n	n	n	L	L	n
G	n	L	L	L	n	n	n	n	n	L	L	L
H	n	n	n	n	n	n	n	n	n	L	L	n

Droplet Threshold:



Legend
n = normal droplet count (count is greater than the droplet threshold value)
L = low droplet count (count is less than the droplet threshold value)

Inputs: (*Use Attached PlateDropletInfo.json or PlateDropletsInfo_48Wells.json - Note the plate data shown in the image is for reference only - it might not match the data in the json files*)

1. Plate droplets info file that has a collection of well indices and the droplet count for each well index.
2. The 96 well plate is 8 rows by 12 columns. The well indices are 0-95 where A1 is index 0, A2 is index 1 …., H12 is index 95
3. The 48 well plate is 8 rows by 6 columns. The well indices are 0-47 where A1 is index 0, A2 is index 1 …., H6 is index 47
4. The droplet count is a whole number between 0-500

Objective:

1. Create a WPF application using C# that displays the user interface shown above
2. Allow the user to browse to and select the PlateDropletsInfo file.
3. Adjust the rows and columns based on the data in the chosen file.
4. Set the default droplet threshold value to 100
5. Display L or n based on the droplet threshold value for each well
6. If the well has a low droplet count change the background color to gray
7. Allow the user to edit the threshold value with the acceptable range (0-500) and click the Update button to refresh the data displayed in the table.

Supplemental discussion topics:

1. The Droplet Threshold textbox has a default value that it displays when the application starts up. Is there a way to make this initial default value configurable (but not from the UI) so that it can be changed without needing to recompile the application?
2. Prepare a test plan that specifies the classes, methods, inputs and outputs that you would implement unit tests for. (Do not actually implement any unit tests).