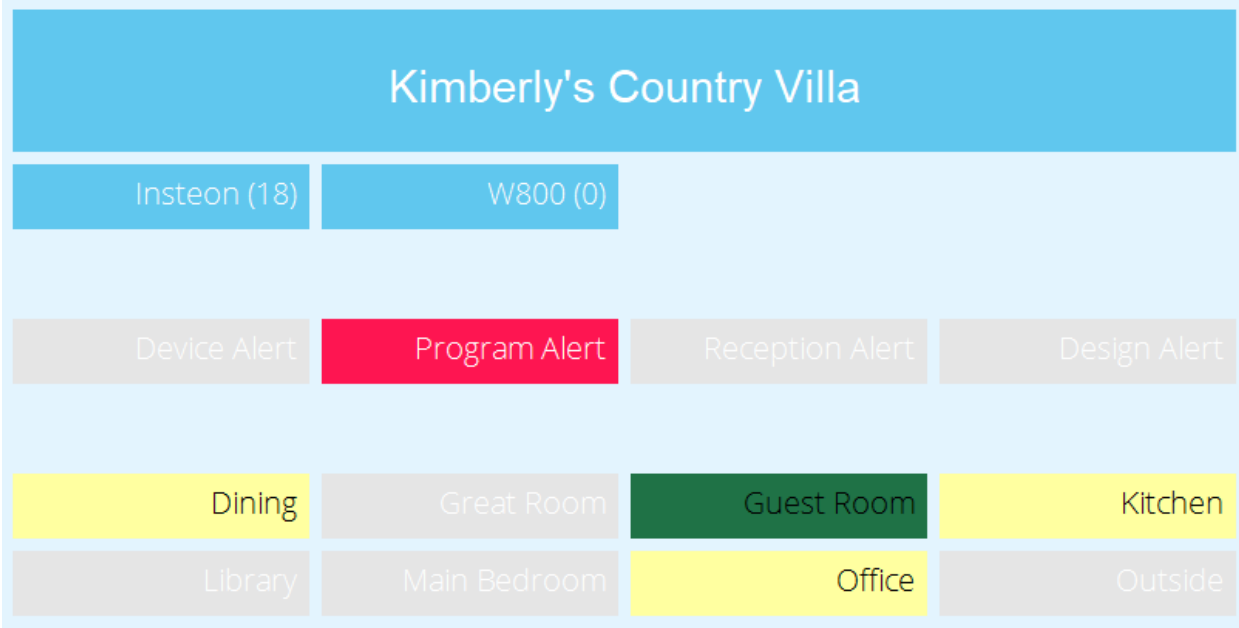


HCA 201 – Part 1

For the next 4 weeks I'm going to try something that I hope may be both be fun and educational. I'm going to take you through the process of building a "status panel" for HCA. That is, a display that shows on a single page the state of each interface – working or not – each room in your home – off, on, suspended, or with device errors – and the state of some important alerts.

I want to go through the design and implementation process, cover some tradeoffs that are made in any project, explore some areas of HCA that you may not have used before, go over some "best practices", figure out how to build something useful for any design - not just mine – with as little changes as possible after import, and see where HCA is lacking some features that would make the job simpler and figure some work-arounds.

Here is what we are trying to build:



The top section is a title that shows the same text as the design title in the Home Properties dialog.

The next section has space for the eight interfaces. Each shows its name, the number of messages it has processed, and if working (green) or not (red). Interfaces not in use are not shown.

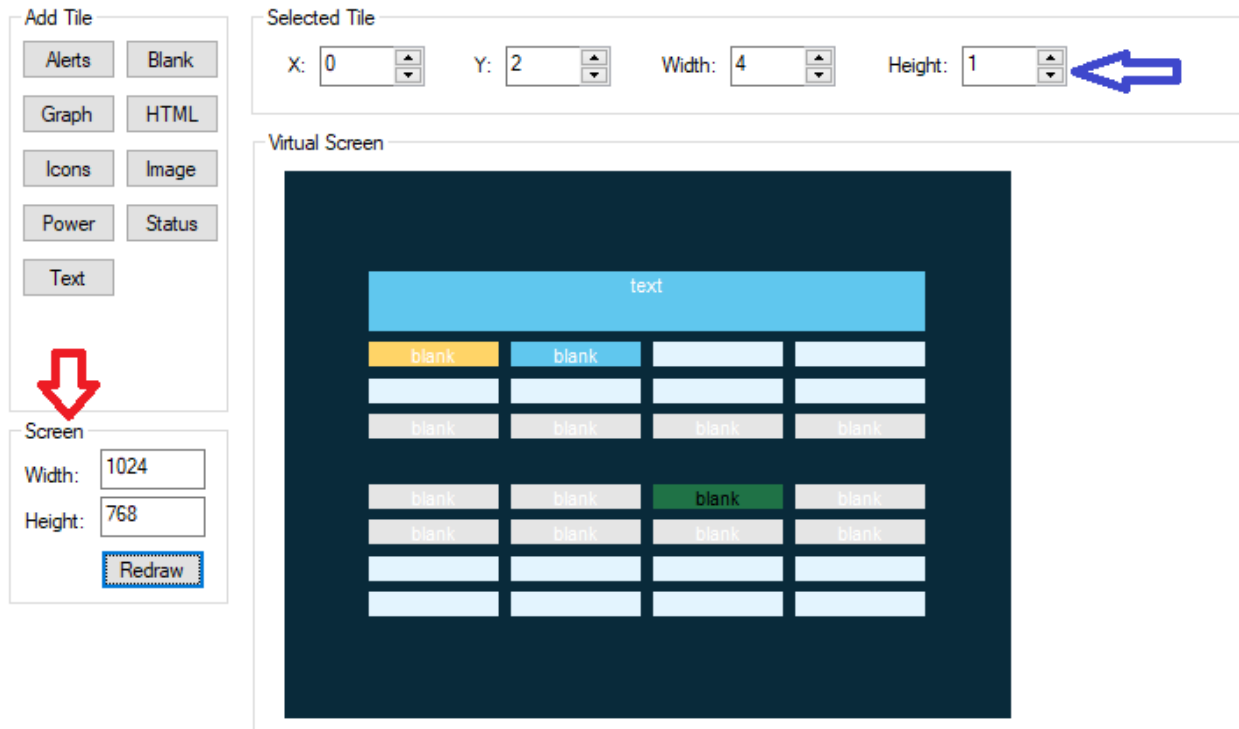
After that is a section showing 4 different alerts that in this design I tend to care about (overdue devices, program errors, unknown receptions, and any alerts that the design itself created using the AlertAdd function).

The final section shows tiles for up to 16 rooms in four colors: gray if no devices are on in that room, yellow if any device is on, green if any device is suspended, and red if any device is in an error state. With the suspended color overriding the on/off color, and the error state color overriding suspend and on/off colors.

Before going any further, is this the best possible status panel? Yes. No. Maybe. It is what I wanted and what you want may be different, but the techniques I used are applicable completing your own tasks.

The main piece of this work is obviously the Tiled Display. I'm not going to get into a step-by-step of creating a tiled display as the docs are good for that but I do want to say a few things that may help you design and build tiled displays.

When you create a new display, on the second step you choose the type of display and one option is a tiled display. But, as when creating a program, you don't create it during the wizard: you don't define the tiles until after the wizard completes and you open the display properties and select the "Tiles" tab.



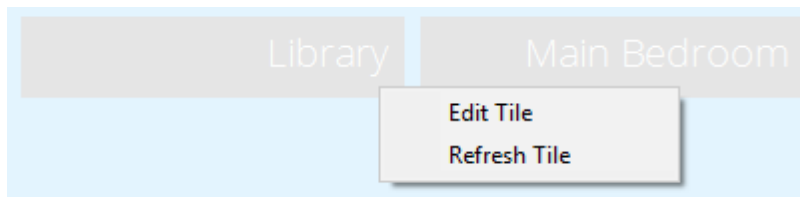
The first action you should take when building a tiles display is to set the screen size (red arrow above) to what your monitor is or the size you will have the HCA Window. While this doesn't limit the actual monitor size, it does adjust the design image so you can better visualize what the layout looks like. After you add tiles you can move and resize them and immediately see the effects. Just use the up/down arrows on the position and size edit controls (blue arrow above) and the tiles move around the simulated display screen as you click up or down.

Except for the title tile, all the tiles used are "Blank" tiles. The advantage of a blank tile is that only the tile label is shown. You can set the label text, the background color, and text colors to make an "indicator" style tile.

Note that more tiles are seen here in the design, then in the picture of the display in use at the start of this note. That's because tiles not needed are hidden by changing their background and text color to the display background color – the disappear into the background. There is a problem with this "cute idea" later on, but for now it works ok.

The last piece of the design are the tile names. Each tile type has a lot of properties that show how it is displays. Also each tile has a label and a name. The label is what is seen on the display. The “name” is the way that you refer to the tile in programs that update its content. In this example, the name for all the room tiles is “Room#”. Where the number is from 1 to 16. As you will see when we look at the programs that update tiles, it will be a little complex to know what room is displayed in what tile (remember that my rooms will be different than your rooms) but we will be clever and come up with a way to solve that.

Here is a tip when working with tiled displays: When showing a tiled display in the development UI, you can right-click on a tile label and select “Edit Tile” from the popup menu and get directly to that tile properties.



What considerations did I think about when designing this display? I wanted it to be not too big. To show information in a way that I could tell from a glance across the room if things are ok or not. Bold colors were chosen for the “not as usual state” colors as they are easily seen. Also, I wanted to be able to easily change the color scheme later and I’ll cover how that is done in the programs next week.

One major consideration is that my rooms are not your rooms. How best to handle that? This implementation handles up to 16 rooms. I could have added more tiles, but I thought that 16 was a good number. The way the implementation works it would be very easy to add more tiles for rooms as the programs would change very little.

In the programs that implement this display I will cover many features such as the advantages of local and global variables, how to break a big task into smaller ones, how to use parameterized programs to limit the number of programs needed, how to create “global constants” that you can easily change, and how to access variables that you don’t yet know the name of.

So what’s next?

Week 2: The programs. Surprisingly not many but a few struggles with HCA.

Week 3: Can we make it a bit better?

Week 4: Tidy – an overlooked part of any project

Are we having fun yet?

##end##