

HCA 201 – Part 3

The last two weeks we looked at a tiled display to show the status of the rooms, alerts, and interfaces in a design. The first week we created a tiled display for this, and in the second week we created the programs to update it. And we had a perfectly adequate tool. But can we improve it?

First a bit of programming philosophy that may help in your projects. When I create tools like these, what I try for is to produce something working, even if it is only close in function and form to what I'm building. Then when I have an implementation that does something, then additional function can be added and put into the final form. You may point out that this method sometimes takes extra work – a section may be re-built several times - but I feel that having a less than perfect implementation that does something is better than a perfect implementation that is never finished.

At the end of last week, I started to think that rather than just reporting status, perhaps it could affect it too. I have two goals:

- If a room is shown ON, then a tap on the tile would turn off the devices in the room
- If an alert was being shown, a tap on the tile would clear that alert

Let's take them one at a time.

Task 1: Control the room to off if the tile is tapped

In the configuration for a tile, a program can be selected that starts when the tile is tapped. I first created a program called "Tile Tap Off". At this point it does nothing, but I needed to create it before I can configure the tiles. Then each room tile is configured like this:

The screenshot shows a configuration window for a tile. The 'Name' field is 'Room5' and the 'Label' field is 'Library'. The 'X' coordinate is 0, 'Y' is 7, 'Width' is 4, and 'Height' is 1. The 'Stretch' dropdown is set to 'None'. There is a checkbox for 'Enable Auto Refresh' which is unchecked, with a value of '60' and the unit 'Minutes'. The 'Set specific tile colors' checkbox is checked. There are two buttons: 'Set Tile Color' and 'Set Tile Text Color'. The 'Set Tile Text Color' button has a dark blue color swatch next to it. The 'Short Tap Action' dropdown is set to 'Run program', and the 'Long Tap Action' dropdown is set to 'Nothing'. A secondary dropdown menu is open, showing 'Utility - Tile Tap Off' as the selected option.

The way that HCA works, when a program is started from a tile tap, the program is supplied with two arguments: The tile name and the tile label. If the program is configured to take parameters, the program can operate on those. Here is how I configured the *Tile Tap Off* program:

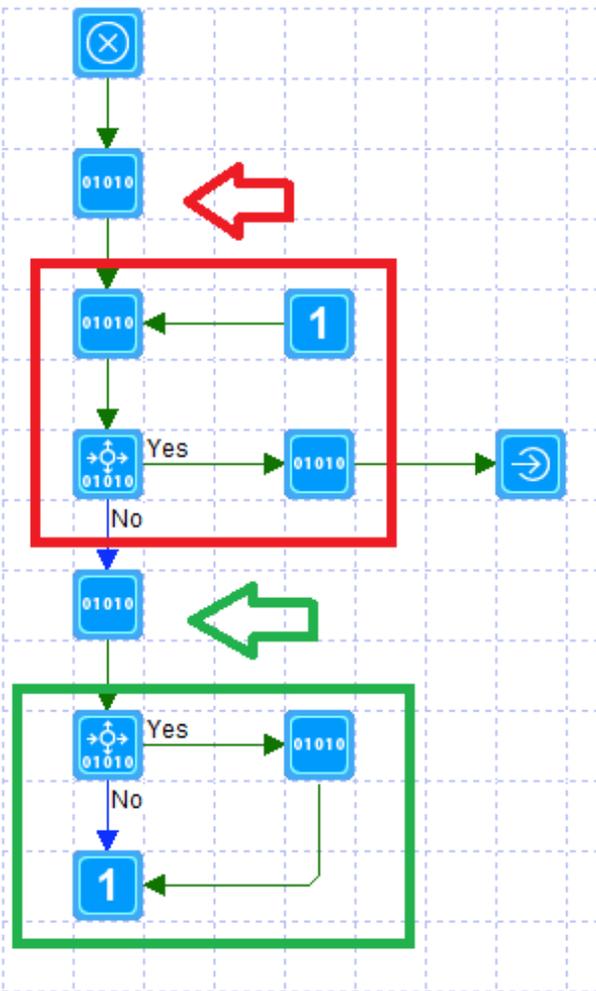
Parameters

Count: 2

Name	Type
Parameter 1: TileName	Value
Parameter 2: TileLabel	Value

Remember that the “Tile Name” is what you specify in tiled display configuration and doesn’t change. The “Tile Label” is what is shown in the text of the tile. Also remember from last week’s discussion, the tile label is the room name. Last week’s program *ShowRoomStatus* goes through the rooms in your design and finds rooms and uses the room names to label the tiles. This will turn out to be a good choice for this new program since from the tile label we know the name of the room.

Here is the program:



As you may have guessed, this program uses the `DesignOpen` and `DesignName` functions to go through elements in the design. The First Compute element contains this:

```
roomNumber = _int(_Mid($TileName, 5));  
hDesign=_DesignOpen(1, $TileLabel);
```

The first statement gets the number of the tile for the room. Since the name of the tile is passed as an argument to this program – parameter name \$TileName – and the tiles are named “Room1”, “Room2”, etc, it is a simple matter to extract the number of the tile. This will be used later.

DesignOpen is used to get the objects in the room since we know the name of the room – same as the tile label which is passed as the second argument. When DesignOpen is used with a “1” as the code, it provides a list of all devices in the room.

The next section – in the red box – contains the same actions as we have seen before. It uses the DesignName function to get the name of one element on the list that DesignOpen creates. Then we must test to see if we are at the end of the list – by testing for an empty string.

The next Compute element – the green arrow – uses a function we have not used before:

```
deviceKind=_GetDeviceKind(deviceName);
```

This function is documented as returning a code that tells you the type of device. Since only some devices can be controlled on and off, this tells us if it is that kind of device. There is no reason to try and send an OFF to a keypad, for example, so let’s exclude those kinds of devices.

The next section – the green box – tests for the kinds of devices we can turn off. If it is one of those types then the device is sent a command to go off. The Compute test element contains:

```
(deviceKind==1) or (deviceKind==2) or (deviceKind==3) or (deviceKind==7)
```

According to the documentation, this is checking to see if the devices is a switch, module, light, or Keypad with a load.

The Compute element, if the test passes:

```
void=_Off(deviceName);
```

After all devices have been examined, the only final element is the Start-Program – rightmost element in the program. Its configuration is:

The screenshot shows a configuration window for a program named "Utility - ShowRoomStatus". At the top, there is a dropdown menu for "Start this program:" with "Utility - ShowRoomStatus" selected. Below this are two checkboxes: "Don't wait for this program to complete before continuing to the next element" (unchecked) and "Delay program start for:" (checked). The delay is set to 0 hours, 0 minutes, and 0 seconds. Under the "Arguments" section, there are two dropdown menus: "RoomName" with the value "%\$TileLabel%" and a tooltip "Name of the room", and "TileNumber" with the value "%RoomNumber%" and a tooltip "Which Room tile to update?".

Since the status of the room could change – all the devices are now off – the tile is redisplayed with new state. And we already have a program to do that. We created this last week and it is called ShowRoomStatus. It takes two parameters: The room name and the tile number. Both of which we have available.

Task 2: Clear an alert when an Alert tile is tapped.

I had wanted to implement a program so than when an Alert tile was tapped on, that Alert would be cleared. Unfortunately, there is no way to do that. HCA provides no expression function that can clear an alert. Clearly an oversight by the developers. Perhaps it could be added later.

Even with only one of the two tasks completed this makes for a better tool, so I guess that gets logged as a win.

Next week, we take up the final installment of generation of this tool and in many ways is the most important: Tidying up, and readying for submission to the online library so it can be shared with others.

##end##