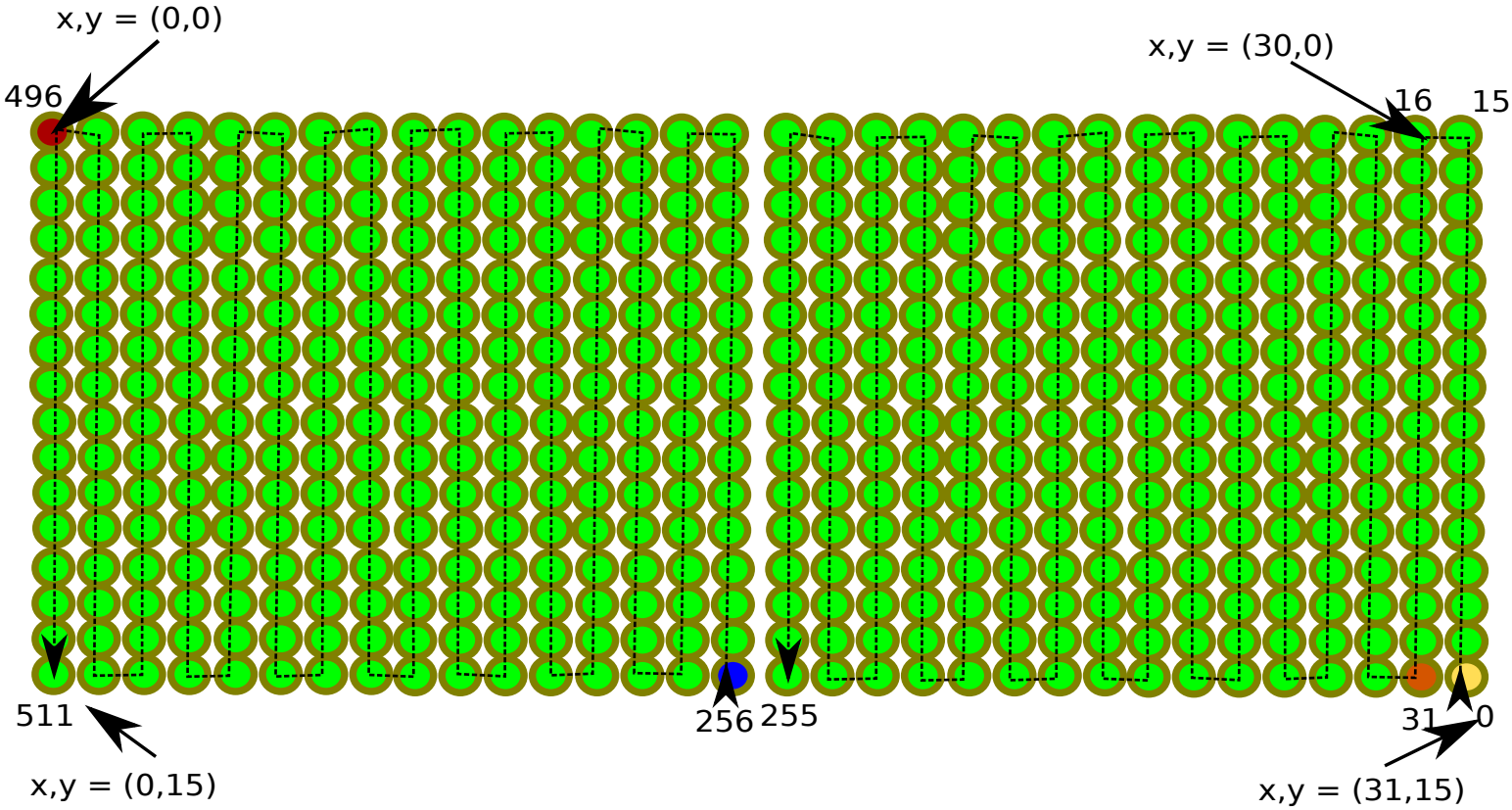
LED Panels: Dealing with the Weird Wiring

The problem:

The wiring on the LED panels resembles a coiled 2D snake, so translating from a plain x,y coordinate system (as we'd get from raster images like PNGs) needs translation to index numbers as shown below:



You want to translate x, y (where 0<=x<=31 and 0<=y<=15) to a number in the range [0, 511] as shown above.

General Algorithm:

1. Since you have 32 columns and 16 rows, you want to get in the general vacinity by looking at 16 * (31-x).
2. On odd columns, the smallest y value is at the top (y).
3. On even columns, the smallest y value is at the bottom (y).

So something like this on odd columns:

```
index = 16 * (31-x) + y;
```

And on even columns:

```
index = 16 * (31-x) + (15 - y);
```

Examples:

```
0, 0 is on an odd column (the first one), so:  16 * (31-0) + 0 = 496
15, 15 is on an even column (the sixteenth one), so:  16 * (31-15) + (15-15) = 256
30, 15 is on an odd column (the thirtyfirst one), so:  16 * (31-30) + 15 = 31
31, 15 is on an even column (the thirtysecond one), so: 16 * (31-31) + (15-15) = 0
```