CS460 Fall 2020
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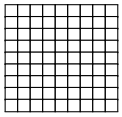
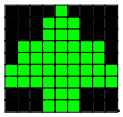
Assignment 2: XTK Cube / Pixel Art

We will create pixel art - and then use XTK to render it in 3D, fully interactive and web-based.

Here is an empty grid of 9x9 pixels: 

If we set pixels to different colors, we can create pixel art.

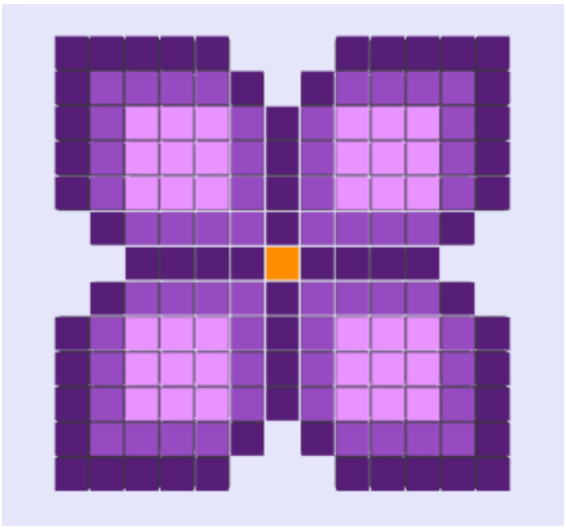
Here is a fox.  And here is a pine tree. 

To create 3D pixel art, we can use colored `X.cube` objects instead of pixels.

Please choose one, either the fox or the pine tree, and then create a 3D version using XTK (`http://goXTK.com`). Start with the **index.html** from `https://cs460.org/shortcuts/04/` and save it in directory **02/** in your github fork.

This starter code creates one cube with XTK. For this assignment, you will need to modify the code to create many cubes: one cube for each pixel. Remember, you can set, for example, the color green for a cube `c` using `c.color=[0,1,0]`. Please replace the screenshot below with your version. Also, please commit this PDF and your final code to your Github fork and submit a pull request.

Since the professor mentioned in class that he doesn't mind if we make different shapes, I decided to make a flower pixel art. This is 13x13 instead of 9x9.



Bonus (33 points):

Question 1 (10 points): If we would not care about the gap between cubes/pixels, how could we reduce the number of X.cube objects in the scene?

By ignoring the gaps between the pixels, the cubes would be placed closer to each other and therefore there would not be a need for as many pixels. Let's say we have a 100x100 layout, and each cube is 4 pixels in length, with one pixel beneath them. This gives room for 20 cubes per row. However, if we don't leave any space for one pixel between the cubes, and each cube is still 4 pixels, we would have room for 25 cubes per row–or, we can still have 20 cubes, but now we'd only need an 80x80 layout to fit the same number.

Question 2 (23 points): Animate the pixel art! We can use the following JavaScript snippet to execute code every second:

```
setInterval(function() {
  // your code
}, 1000);
```

Please write code to animate closing/opening of the fox's eyes or, if you chose the pine tree, make some pixels/cubes light up like a Christmas tree. In both cases, you will need to keep track of certain cubes and then change their color using the snippet above. You can submit this as part of your `02/index.html` file.

I changed the inner colors of my flower petal for this portion in the `index.html` file.