CCLab Midterm Idea

For my midterm, I would like to build something that is fun to interact with. Originally, I thought of creating a holiday light display that would change or light up depending on movement. I also grew some interest in temperature sensors so that when the temperature drops, lights in the shape of snowflakes would light up on a tree outside. Another idea I had was to build LED lights within a soccer ball to see what colors would change when the weather is warm or cold.

Finally, if possible I think I'd like to create a minuture version of LEDs on a floor that react depending on pressure. When I go to workout classes, sometimes I'm unsure where to place my yoga mat or workout items. Sometimes it can be awkward or uncomfortable trying to find a spot when a classroom is full. However, if a light on the floor lit up and guided you on where to go, then hopefully everyone would adjust and move accordingly. I'd like to use this midterm to try to use a floor to help guide people to positionally move in a workout classroom to be comfortable and equally apart from their fellow classmates. Also, if an instructor knows before class begins that there will be 12 people attending, then they could enter the number and the lighted areas would be there waiting for students when they arrive. For example, in a Yoga class there may be 12 people attending so the floor would outline 12 yoga rectangles representing everyone's yoga mats and a small circle next to each mat for their waterbottle or belonings. If the instructor wants them to be closer to the front then they can alter the layout or place an extra light for someone in the back that they know will be late.

Im worried that this idea might be too much to tackle for midterm, so I may return to the original sensor ideas that I mentioned in the begininng. The biggest obstacle for creating the Classroom LED Floorplan is I'm not sure with my level of understanding of Arduino if I have the time to make it. I also understand that I don't have the resources right now to create it, so I'm trying to figure out how to make a toned down smaller version.

So far, I've thought about creating a breadboard full of LEDS, and then calling out each pin to high or low depending on a number. I've also thought about using a button to communiate with the LED lights. The button would be a stand in for a sensor as if it was placed under a welcome mat before someone walks into the classroom and the tallys up the number of people and adjust the floor display accordingly. I've also thought about ordering LED light strips and formatting into a pattern and connecting all of them. However, I am concerned this idea is too big and I need to tapper back and save it for another project or possibly the final. Please let me know your thoughts and I'd be happy to adapt to make a stronger midterm.