**Goal of the processing app**

Our intended purpose for the processing app was to have a maintenance/admin application for the owners of the Find Your Desk system. We wanted the users to receive quick stats about the usage of chairs across the campus, add new desks to rooms, and add new rooms. The idea is that the processing app can be easily used by different institutions to set up desk spaces to be used by students in the web app and to interact with chairs using the stack and stick. At this stage, we have not yet set up MQTT which we intend to deal with in the next sprint.

**Design Process (Sprint 1):**

We first set out to build a program that would print out the layout of a study space and the availability of each individual chair within a room. In order to do this, we set up objects for Buildings, rooms, desks and chairs. We then also gave each new object created in each of these classes an ID made up of its own ID and the combination of all its parent classes IDs e.g a building could be 01, a room within that building 0102, a desk inside that room 010203, and finally a chair on that desk 01020303. We decided that it would be inappropriate for these objects to inherit from one another, as it is more the case that one object is inside the other as opposed to the objects being variants of one another. We used this combination of objects to then go through a classroom desk by desk printing chairs around each table in different colours (*image 1*).

In terms of UI, we first experimented with having a search bar to find buildings. This proved to be both difficult to implement and difficult to use for the user. Based on user feedback, we decided instead to use dropdown lists for users to navigate through buildings and rooms. We tried to do this by adapting the code from the processing code walkthrough, however quickly found out that it only partially fulfilled what we wanted to get done. By using control p5 and by creating functions with the same names as the cp5 controllers we were creating (similar to how you write code in css/js) we were able to extract which items were being pressed in the drop down lists and from that we could start to navigate between classrooms and display them individually(*image 2)*.

The final bit of functionality we wanted to add for this sprint was to allow users to add desks to rooms and rooms to buildings. We decided we wanted to be able to name rooms and therefore we chose to add rooms using a text entry field. Since desks didn’t have names, we decided to just use a button to add desks and set a hard limit as to how many we could have in a room at a time.