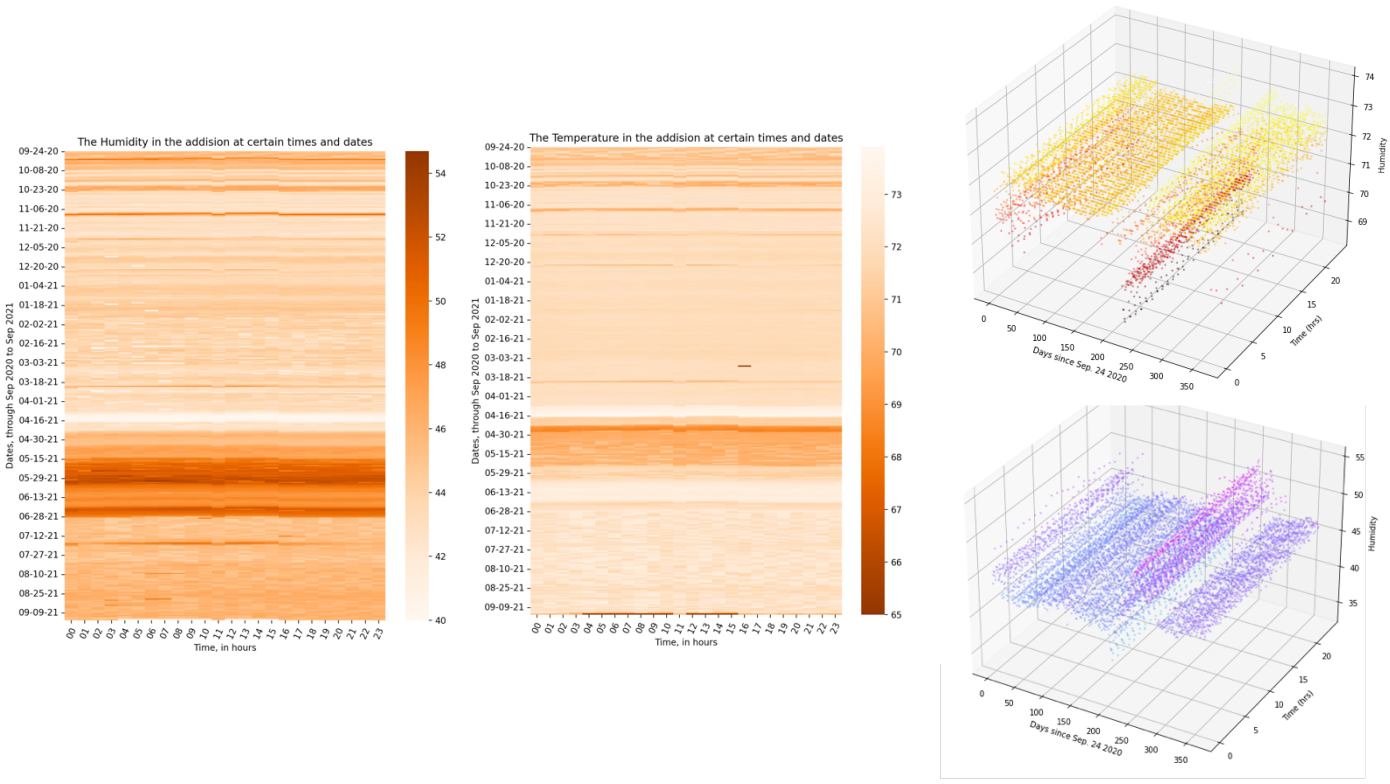
COMP SCI: PHYSICAL VISUALIZATION
12 – 15 -21

BACKGROUND:

In this project, we sought to visualize the ideal temperature and humidity of the various mediums stored in the Addison, juxtaposed with the actual temperature and humidity in the Addison throughout one year. This idea originated when we studied the internal temperature and humidity and how they changed over a given date and time. After rendering both a 3D scatterplot and a 2D heat map *[FIGURE 1],* we noticed that although both did change, they remained static throughout a given day. This allowed us to simplify our graphs to only consider either the temperature or humidity as a function of date.



[FIGURE 1]

Once we had this model, we thought it would be interesting to relate it in some way to the material type of the artworks being stored. From this, Isaac researched the ideal range of temperature and humidity that each material can be stored at as well as how many of each artworks types the Addison actively has. *[FIGURE 2]* While this did not initially return any useful connections or ideas, we though if there was a way to bring all these seemingly unrelated points of data together there may be hidden relationships between them.

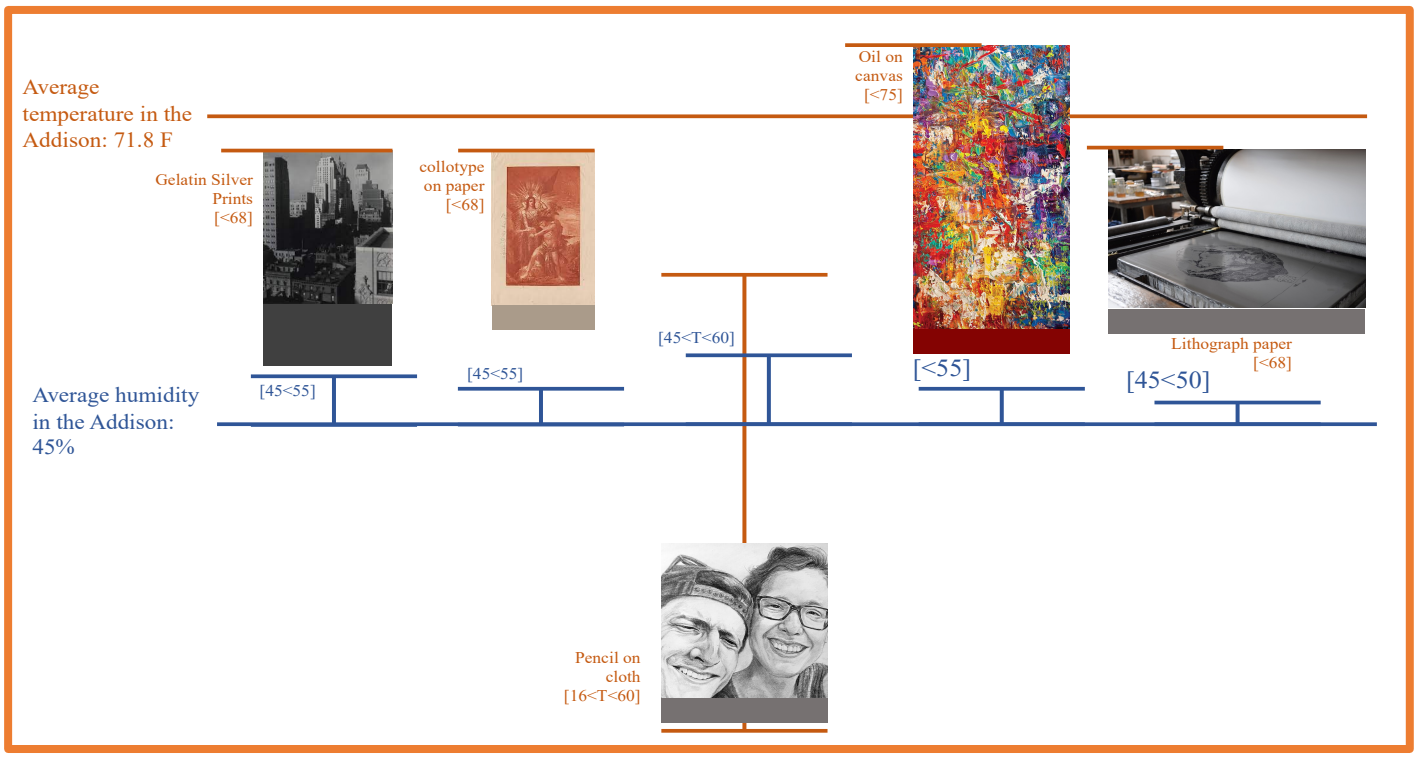
MEDIA	COUNT	TEMPERATURE RANGE	HUMIDITY RANGE
gelatin silver print	3570	<68	[45, 55]

collotype on paper	782	<68	[45, 55]
pencil on wove paper	462	[16, 60]	[45, 60]
oil on canvas	459	>75	<55
lithograph	442	<68	[45, 50]

[FIGURE 2]

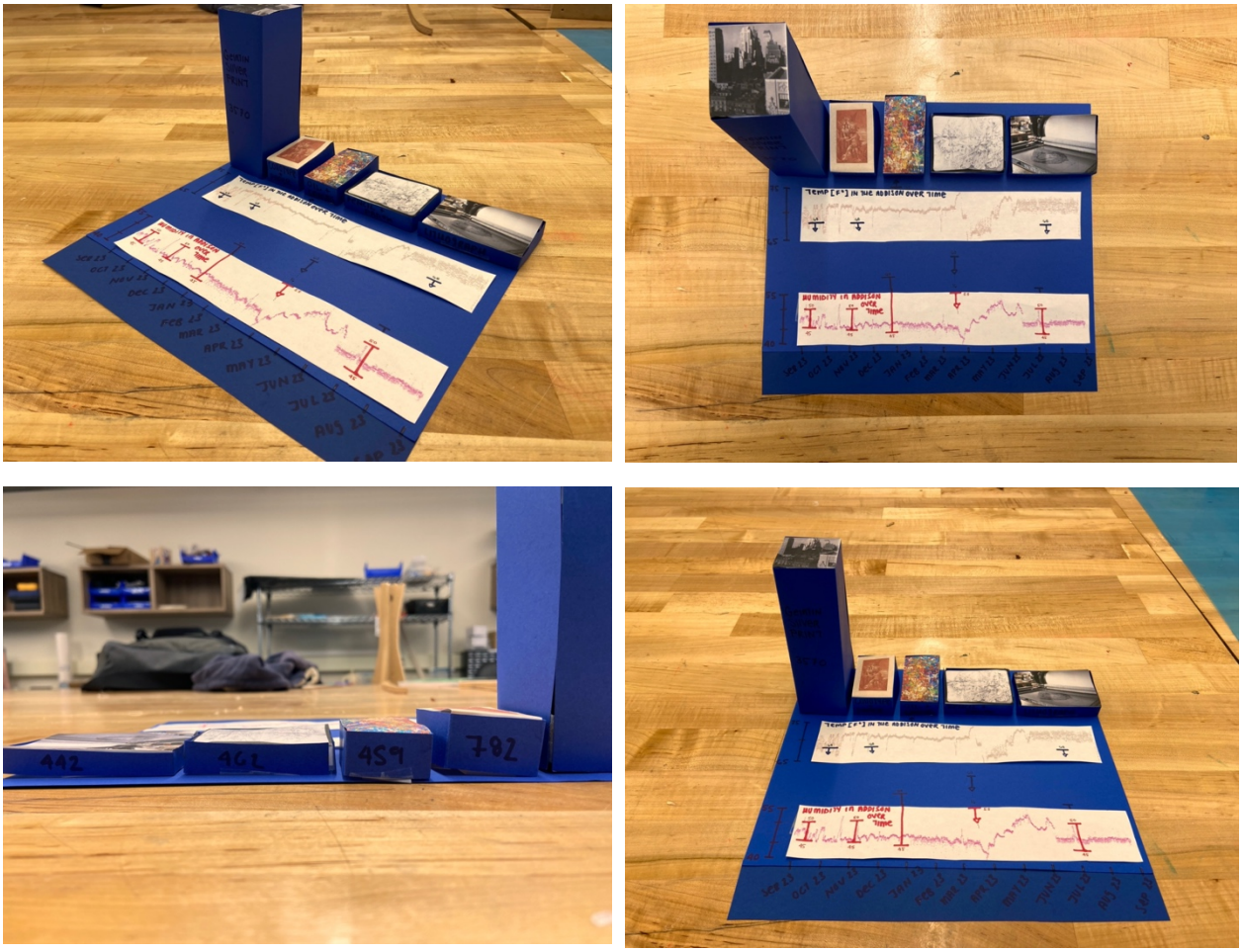
EXECUTION:

The initial concept I created began with a straight line representing the average temperature or humidity in the Addison, which I could then overlay a material's ideal temperature range onto. To rationalize and connect the number of a certain type of artwork to these ranges, I planned to label each range with a 3D bar, where its height corresponded to the number of that type of artwork. Theoretically, this would allow a viewer to easily discern connections such as if certain artworks got "storage temperature priority" over others because of how many there were or if humidity or temperature control was valued more. From this I developed a rough prototype to explain my thinking. *[FIGURE 3]* Finally, before I began to construct this prototype, Isaac suggested that to build further, more nuanced connections, we should bring in the temp x date and humidity x date graphs we had developed earlier in substitute of the average line. With this, I felt we had a sufficiently complex yet approachable visualization of our data. All these visualization methods stayed the same when brought into the physical world.



[FIGURE 3]

This yielded a final product that made the comparisons and connections we had initially set out to find. *[FIGIRUE 4]* However, although we were able to facilitate the connections in this project, there were 2 that surprised us. First when looking at the specific timeline of humidity and temperature we found an odd dip and rise between March and June. Specifically, the timeline of this jump is confusing as none of these months set incredible heats to challenge a cooling system. The second point of surprise was how the Addison calibrated temperature vs humidity. Seeing that the humidity in the Addison is consistently in the ideal range of material types, we were surprised that humidity seemed to be considered more in the storage facility as opposed to temperature.



[FIGURE 4]