María José Castillo Gallo 0233815
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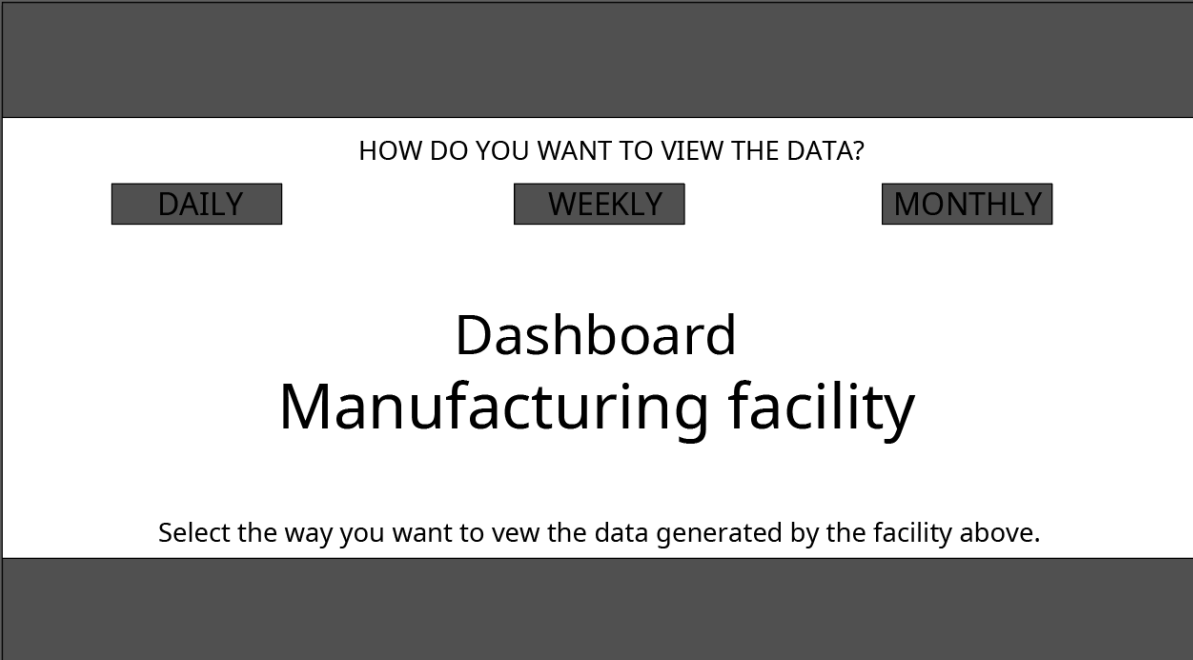
DESIGN DECISIONS - MIDTERM II

After reviewing the source code for the factory simulation, we realized a lot of data was produced, and even though some of it is really important, some other numbers can just overwhelm the spectator, so we had to make the decision to use only the information that would be valuable for the person in The Dashboard. These are the values we primarily searched and stored in the Database:

- Complete production of the plant per day
- Occupancy per workstation
- Average production time per workstation
- Production rejection by number and percentage
- Average delay time
- Accident rate.

We also chose these parameters because they can be represented in different time frames; this way, The Dashboard would be as complete and organized as possible.

The next step was to imagine how we wanted to represent our data and "tell the story". We reviewed the topic we saw on storytelling to choose the best data representation method, and then we made a quick design of how we wanted our Dashboard to look, the tabs it would have and the layout.

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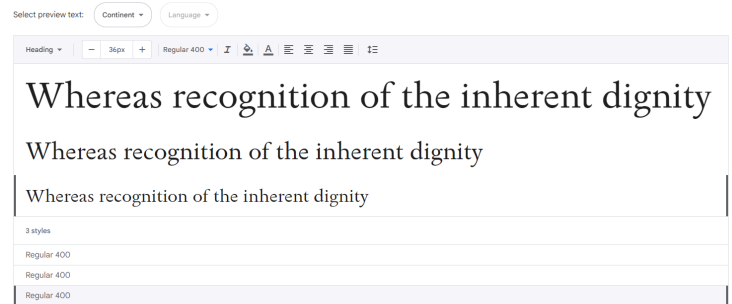
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This image represents how we want to layout the main tab in our page. The additional tabs will look the same, but with the necessary graphs in the middle. As you can see, we were guided by the philosophy that less is more sometimes. For the colors, we chose the next palette, along with the next fonts:

Font link:

https://fonts.google.com/specimen/Sedan?preview.text=Complete%20productio n%20of%20the%20plant:%205,000&query=sedan

2. GRAPH SELECTION

In this section, we will explain each set of data represented and explain why we chose to represent it that way.

1. **Complete production of the plant**

   For the total production of the plant, we choose a bar chart to show the data in the three viewing modes: daily, weekly and monthly. We chose this graph since it was the easiest way to represent the numbers in a way that the viewer could see how production rates changed.

   In the *x-axis* we placed the time frame chosen - name of the day, days of the week, the thirty days of the month; in the *y-axis*, production quantities. This gave us the opportunity to view how production increased or decreased by seeing the height of the bar representing each day.

2. **Occupancy per workstation**

   For the total occupancy per workstation, we chose to represent data with a pie chart in the three viewing modes: daily, weekly, monthly. This allowed us to view at a single glance the whole production of the factory

and the knowledge of which workstation had a higher occupancy since each segment of the pie chart represents a workstation.

For the daily chart, it represents the actual number of products that entered the workstation. For the weekly and monthly ones, we used an average of products in each workstation per time frame.

3. Average production time per workstation

For the average production time per workstation, we decided to use a line chart. At first, we wanted to use a pie chart to represent similarly the data as in the occupancy per workstation chart, but, by doing so we wouldn't be able to show the times - since pie charts use percentages.

Just as in the previous bar chart, we placed the number of the workstation in the *x-axis* and the average time each workstation took in the *y-axis*.

4. Production rejection rate

For the production rejection rate, we chose to represent the data with a donut chart. This way, the user would be able to see how many products were rejected at the end of the line in relation to the total production. In the daily view mode, we used the total production and the production rejection rate; in the weekly and monthly ones, we used averages of the data.

5. Average delay time

For the average delay time, we decided to project the information in a line chart. This has more or less the same function as the bar chart, which we thought was useful in the sense that we could see how delay times fluctuated throughout the time frame selected.

Just as before, we displayed the time frame in the *x-axis* and the delay time in the *y-axis*.

6. Accident rate

Lastly, for the accident rate we chose a donut chart to represent the accident rate in the whole facility in relation to the whole production of the facility.