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Final Project Report

Women in STEM Throughout the Decades

Our project displays the trends of women in the STEM (Science, Technology, Engineering and Mathematics) fields throughout the decades, more specifically between 1970 and 2019. With both of our majors being biomedical engineering and biochemistry, we are both interested in learning and displaying the progress of women in STEM. We both expected the numbers to trend upwards because in the recent years we feel like there has been a push to get more girls interested in STEM fields throughout our education in school. However, our data found from the official website of the U.S. Department of Labor (citation at the end of the paper) did not show a dramatic increase or really much of an increase at all like we were expecting. For example in engineering the percentage of women has only slightly increased. Additionally, the science graph was based off of the data of the social sciences from the first graph on the website.

We found the trends of our data very interesting, as we're both women going into the STEM fields, and we're glad the progress that has been made throughout the decades. That being said an interesting observation from the data was the the percentage of women in the technology fields has actually decreased. We expected there would be more interest in the technology field as technology has advanced, and more job opportunities in that field to inspire women to join. We were just as shocked to see that in 2019, the percentage of women in engineering is only 15%. We both expected the number to be larger, especially because both of us grew up with strong influences to go into engineering.

One thing we both learned while writing the code for this project was to be flexible when creating a project, as some of the problems we faced affected our design. We had originally

planned to have a graph for each decade, each with multiple lines displaying each subgroup in STEM and an overall percentage of women in STEM, however with more detailed research, we decided to split our graphs up into the subgroups of STEM, and keep the x axis as all of the decades as it was easier to graph and visualize the data, such as comparing between the decades. We had to adapt and change what we wanted to make the code work, as the difficulties we faced were with the scroll bar and adding in the overall percentage of women in the workforce while keeping the rest of the data on the graph. The scrollbar adds the line of overall women in the workforce throughout the decades, left being it shows the data without the overall, and right being it shows the overall line. The last issue we ran into was making sure the axes were formatted correctly to ensure that our data was fairly representing the data.

Ways we will use MATLAB in the future is to graph data for a project, and to animate that data. Graphing in MATLAB is easy, especially when given data in a csv file, it would be a lot easier to graph it in MATLAB than in any other program. Another way is when given an equation where we plug in numbers and there are some constants, we can code a general solution so all we would have to do enter in the values that we have and MATLAB would solve them for us and essentially serve as a calculator that is able to perform tasks that our hand held one are not capable of doing.

We thought Quinn was a good teacher however we think that the organization of the class and canvas could be improved. For example, we feel that at the beginning of the semester it would have been helpful for the assignment due dates to be on the syllabus that way it would not be surprising when the large homework assignments were assigned. It was nice though how many office hours were available between the LA's because at least one worked each day with our schedules. But it would have been nice if Quinn had one more office hour time per week as

sometimes in office hours with the LA's or in the lab, it took a really long time for the LA to solve the problem or would just be referred to someone else's office hours to get the problem resolved. That all being said we are both very appreciative of the extensions allowed on all the assignments and homeworks and the understanding that sometimes our schedule gets the best of us and a one or so day extension is extremely helpful.

Citations:

“Women in the Labor Force.” *U.S. Department of Labor*,

www.dol.gov/agencies/wb/data/facts-over-time/women-in-the-labor-force.