Introduction to Programming II Project Log

Project title:	Exploration of data visualizations
Topic:	Extending the apps

What progress have you made this topic?

I finished the basic logic for the Kagi chart and fully implemented both the multi-line graph and the open-high-low-close chart (OHLC). The OHLC chart was the first one to be implemented, since, due to its simplicity, it made me understand how the written code works.
For the multi-line chart, since the example is quite simple to implement, I chose to do it from multiple sources with different table organization, which was very challenging, but prepared me for the Kagi chart.
The Kagi basic drawing is done, but some bugs are still present.

What problems have you faced and were you able to solve them?

I faced mainly two problems:

- The multi-line chart had different sources and it was complicated to build the logic to analyze them, since they had different information. It was particularly hard to gather all the stock information from each company on one file and sum them to display in the graph based on the area to which each belongs. This was achieved.
- The Kagi chart has visual bugs, but I do not know yet if the information is also incorrect. More test will be necessary.

What are you planning to do over the next few weeks?

- First, I need to understand each step of a Kagi chart, so the logic and the drawing work.
- I am also planning to see if it is really feasible to build a concentric donut chart, but talks with some colleagues is dissuading me from the idea.
- Alternatively, I can build a word cloud, but some collision detection would have to be designed. It is a visually pleasing graph, however.

Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?

- I am currently behind my self-imposed deadlines, but I believe I will have more time later this month to catch up.
- I might just do my own extensions to complete the products, since modifying an existing one takes time and it is not very impressive.

Introduction to Programming II Project Log

Project title:	Exploration of data visualizations
Topic:	Callbacks

What progress have you made this topic?

- This problem was more important when dealing with the word cloud. Since the analysis of the book took a very long time, the graph was never ready when clicked if it was the first to be chosen.

What problems have you faced and were you able to solve them?

- After having multiple failures when loading the word cloud, I saw that the loadStrings function have a callback function that allowed me to prevent this error again.

What are you planning to do over the next few weeks?

- After designing the first logic of the word cloud, now the words are correctly read and placed in the middle of the screen. I am planning now to design the collision logic for the words.
- I am having issues with the splitTokens() function from the p5.js library, which is generating broken words (handkerchief becomes ndkerc for some reason) so I also plan to do more tests, maybe with other books.

Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?

- I am not on target yet, but improvements on the pacing were made this time, since most of the visuals of the word cloud are ready.
- Next, I plan to check again the Kagi chart logic with other companies.

Introduction to Programming II Project Log

Project title:	Exploration of data visualizations
Topic:	Testing for stability

What progress have you made this topic?

This topic was very present in this project since its very beginning, since multiple bugs made me test all graphs extensively. Most problems appeared in the Kagi chart logic. and in the word cloud collision, which are now fixed.

What problems have you faced and were you able to solve them?

- Kagi chart logic. Some points were being drawn in unexpected places in the graph. After checking the logic with less lines, I realized that the code was also using wrong values. I reviewed my code and made diagrams by hand, which allowed me to correct the issues.
- Word cloud collision. The word cloud had collision issues since the beginning, but multiple reviews of my code were unable to track the source of it. I then designed a simple test, drawing visible rectangles on the screen with the coordinates that were being used. This allowed me to see that the textBounds() from the p5.js library has issues getting correct values for the text bounds, especially for smaller fonts. After that, I manually added a variable for a margin of error, which solved the problem.

What are you planning to do over the next few weeks?

- In the next few weeks, I plan to present my visualizations to some colleagues and give them a short interview to get some feedback. This matches the current step of my project, since I would now start adding some user interaction features in the code.

Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?

I am mostly on target now, but I expect to get behind schedule again in the next few weeks, since I am becoming a father.

Introduction to Programming II Project Log

Project title:	Exploration of data visualizations
Topic:	Testing with users

What progress have you made this topic?

I was able to elaborate some simple questions for five different users on the visualizations. Based on their feedback, I added some features that were requested and plan to add some others.

What problems have you faced and were you able to solve them?

It was time-consuming to prepare the interview questions and get users to evaluate the final product in a short amount of time. As they do not understand coding and what I am able to achieve in short notice, I also receive some feedback on interesting features to have on the project that are not feasible to be implemented at this point.

What are you planning to do over the next few weeks?

I plan to implement two of the requested features:

- Kagi chart. More companies and the hability to switch between them.
- Word cloud. Information about how many times a certain word appears in the novel.

I also plan to refactor most of my code and study the implementation of more modern JavaScript.

Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?

I am mostly on time to complete the project now.