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**How did ChatGPT help you understand the new web scraping library? Describe specific instances where the AI assistant clarified a concept, provided an example, or guided you to apply the knowledge in a practical way. How did your understanding evolve over the course of your learning journey?**

It helped me to understand the general utilities and functions of the library, which I used alongside the user-made documentations in order to get a fuller picture of what it can do. For example, it told me that other than reading and traversing the html tree, you can modify it if the html is saved in a local file.

**What strategies did you use to interact with ChatGPT effectively to learn the library? Did you have to adjust your learning strategies while using the AI assistant? If so, describe what changes you made and why.**

Prompt engineering such as giving ChatGPT context. An example would be specifying “websites to scrape ***without getting IP blocked***” since beautifulsoup is very slow and has a higher chance of getting IP blocked or banned (even though it might not have worked).

**How did you feel throughout the learning process? Did using ChatGPT influence your motivation or emotional response (e.g., frustration, satisfaction, curiosity)? Please give specific examples.**

ChatGPT never gives specific examples unless you specify that it has to be specific. It was somewhat frustrating to try to find a second site to scrape, but I managed to find one in the end. When I asked for a specific example to web scrape, it gave the same output as before. However, since I already somewhat knew how to read html (although I was not familiar with the terminologies) and things such as url formats (query strings, User-agents, cookies) from my experience in participating in CTF competitions, I had an easier time than my partner trying to understand what was happening and how to use the library, and hence had little to no frustration in general.

**Reflect on your metacognitive strategies during this process. How did you plan, monitor, and evaluate your learning progress? Did you encounter any difficulties and if so, how did you overcome them?**

Since I did the (self-selected website) case-study, I was able to check my understanding my understanding of the library by seeing if my output matches what is expected. In terms of planning, I made sure to list down all my references and new ChatGPT prompts as soon as I used one. Some difficulties I faced were that I did not know that there was a newer, user-made documentation for beautifulsoup until halfway into the assignment and it was incredibly hard attempting to look through the messy official documentation. Next, the scraping took a long time to run again for the bookstoscrape site. I fixed this by choosing not to close Vscode (when possible) until I was done with the project and optimising our code when we did the self-chosen case study (by using lxml and request.Session()). Finally, I did not know that why I was blocked from scraping CTFTime until after searching for a long time.