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Group Project 3: Banker's Algorithm

For our project, we decided to write the code in C, as it was used in the instructions as an example. During the process of completing the assignment, it became obvious that we needed arrays to track our available, maximum, allocation, and need variables, as they were structured per customer/resource. Additionally, following the instructions, we utilized **argc** and **argv** to hold the number of arguments passed to the program when it is executed, including the program name itself, instead of prompting for input during runtime. This was necessary for the program to execute with the passed arguments based on the number of customers and resources. Montserrat suggested creating a text file for the maximum number for each customer, so we decided not to initialize this data manually within the code. Instead, we used the **fopen** function to read from the file named "max.txt". Inside the text file, we simply copied the input data provided in the instructions, starting with 6, 4, 7, 3, and so on. Along with the suggested available resources test input (3, 1, 2, 1). We also followed the banker's method in initializing the sizes of customers and resources, which we defined as preprocessor macros. Using these symbolic constants instead of hardcoding values throughout the code makes it more readable, easier to maintain, and allows for quick adjustments if the number of customers or resources needs to change in the future. Additionally, we added the maximum command length to ensure that the program can handle commands of varying lengths without encountering buffer overflows or other issues.

For **contribution**, we both worked together on writing the code, including the thought process and considerations of how we should approach calculating the need arrays and other functions. Additionally, for the documentation, Montserrat and I discussed and wrote together to complete this documentation part of the assignments. She also contributed to completing the video assignments by providing voice-over and explaining how the code runs. Thank you.