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Project 3 Summary

The project was to simulate disk allocation methods such as allocating a file contiguously, or with references to the next memory block. My approach to the project was to create three classes. The first class, UI, was solely for the user interface to read user choices. The first menu prompts for which allocation method to read/write the disk with and uses the option to instantiate another object the handle the decision. The next class, Handler, was responsible for all the logic behind whatever choice the user decides to go with. It handles each choice depending on the allocation method the user chooses in the first menu. The last class, Disk, only reads and writes to an array of memory blocks with 512 bytes each. I thought this approach seemed clean at first but ended up being a little messier than I had imagined. The Handler class seems large and maybe could’ve been separated out a little most. However, I felt that it was a good approach overall in that each class held a single responsibility and not have the UI do absolutely everything.

What I found enjoyable about the project was learning some of the nuances of disk allocation methods, particularly index and chain allocations, and learning the differences between each method. I feel that I have a much stronger intuition about the advantages and disadvantages of each method having done the project. The most difficult challenges I faced during the project would be simulating the chained allocation method. The contiguous and index allocation methods were simple in comparison because they didn’t have a lot of small details such as saving a reference to the next memory block at the end of the current block. I spent the most time implementing this allocation method, finding many small errors and tedious data manipulation for it to work out. Testing was difficult in that I didn’t have much to test with regards to different file lengths.