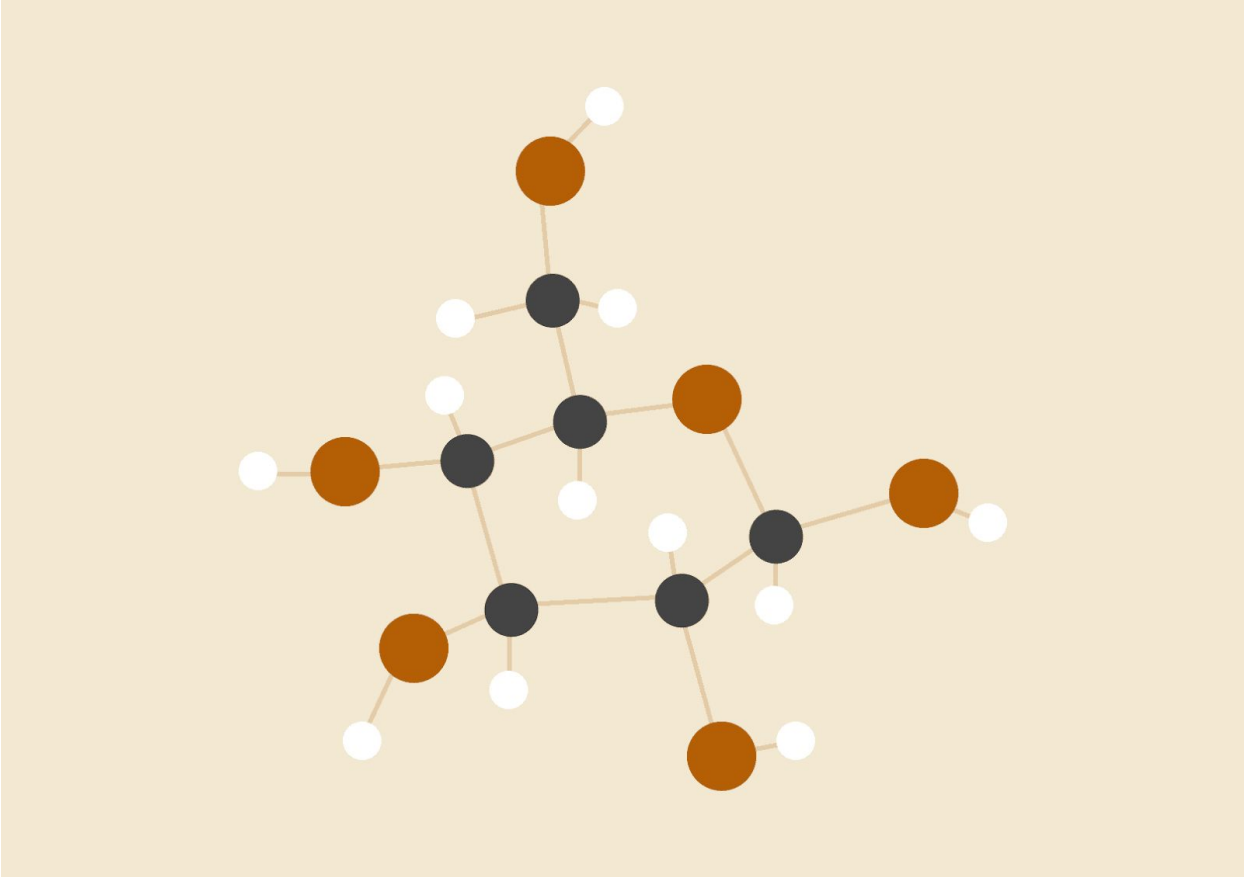
PROJECT #1

Milestone Report



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September 9th, 2019
CSE 310 TTh 10:30am

PROBLEMS ENCOUNTERED

Most of the problems I encountered dealt with misconceptions about strings pertaining to memory access and the behavior of pointers.

Strings and Memory Access

One of my major logical errors dealt with the cyclic shifts in the beginning. The problem was that whenever an input was shorter than five characters or if it contained any spaces, the shifted lines would start to contain symbols that looked like a diamond with a question mark in it.

I believed this was because in my code, I was accessing parts of memory I didn't think I was doing logically. It ended up being that I was forgetting to add a null terminal character '\0' to the end of each of my shifted lines. This resulted in random symbols being sorted along with the original string.

Pointers

I decided to write my code without any pointers first, just so I can figure out the right logic when it comes to sorting and generating the encoded output. When I decided to make the quick fix to change the array containing the strings of shifted lines to an array of pointers pointing to the shifted lines, I simply changed the operation of adding the shifted string directly to array to instead assigning one of the pointers in my new pointer array to that shifted string.

Due to my limited knowledge of pointers, I didn't realize that my original code would keep making an array of pointers that all pointed to the same string-- specifically the last shifted string. That was when I learned (or I guess remembered...) that I could allocate a new string by copying the shifted string and then push it into my pointer array. Thereby having multiple pointers point to each unique string.

KNOWN BUGS OR INCOMPLETE IMPLEMENTATIONS

There aren't any bugs to my knowledge when it comes to the implementation of the project milestone. Obviously it is incomplete in terms of the whole scope of the project, but I believe my implementation can handle all appropriate test cases to my knowledge.

SIGNIFICANT INTERACTIONS

1. **Nicole Ang Wanek**

One of my problems dealing with memory allocation was swiftly solved by Nicole Ang-Wanek during her office hours. She taught me the importance of adding a '/0' character to the end of my strings, so when utilizing them, I don't bring along random, unwanted characters in memory with me.

2. **Violet Syrotiuk**

While trying to figure out the correct output when it comes to newlines, Professor Syrotiuk clarified to me that the output would have to explicitly include the new line character. While that information was needed to know for the milestone, I found it was really helpful for when it comes to decoding.

EXTERNAL SOURCES

1. **Vectors and Pointers**

"Pointers in C/C with Examples." *GeeksforGeeks*, 27 Aug. 2019,

https://www.geeksforgeeks.org/pointers-c-examples/.

"Std::Vector." *Cppreference.com*, https://en.cppreference.com/w/cpp/container/vector.

2. **Piazza**

For project requirements and specification details, I asked two questions on Piazza. One of them pertaining to dealing with newlines right after the encoded output and one about actually encoding an inputted newline.