

CSE320 Assignment3

Review Document

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The utmost goal for the assignment was to practice the class contents of 'Advanced C Programming' involving contents such as Bit Manipulation, Pointer Usage, Dynamic Memory Allocation and so on. There were many struggles and new learned information during the process. Below are details

Things I have learned:

- C is a language that enables easy bitwise operations
- Pointers are very useful but are very sensitive and can cause many memory related problems
- Unions are similar to Struct but is more effective in saving memory when only one attribute is to be initialized, but the values of other attributes will get overridden
- There are many ways to parse through elements in an array in the C programming language. To use pointers like arrays, you need to allocate memory using either `calloc()` or `malloc()`
- Some compilers(such as Mac) function differently from others, resulting in different behaviors from the same code. This has to be managed with caution

Difficulties I have encountered:

- Setting pointer values to NULL after `free()` is okay. This is rather recommended to resolve dangling pointer problems. However, it makes programmers to pay more attention, since it will cause an error when called upon after NULL initialization
- When getting values from call-by-definition, it is to be more cautious to prevent memory related problems.

The Assignment allowed me to study deeper into the C programming language and helped a lot with preparing the exam. There is still some investment, regarding memory allocation freeing allocated memory and compiler differences, for further study later on in the course.

