

CS 2213 Advanced Programming Recitation - Exercise

(Library – Improving bufferADT implementations with a search function)

First copy the files under 09-Efficiency-and-ADTs from the class web page (follow the link “programs from the textbook” and then go to 09-Efficiency-and-ADTs).

After compiling/testing existing client/diver program editor.c with different implementations of buffer ADT, implement the following function under **single linked list** (you can try it with other representations like array, stack, double linked list at your own time later).

Bool SearchBuffer(bufferADT buffer, char ch);

- When this function is called, it should start searching from the current **cursor** position, looking for the next occurrence of the character **ch** in the rest of the buffer.
 - If it finds it, search should leave the **cursor** after the found character and return the value TRUE
 - If **ch** does not occur between the **cursor** and the end of the buffer, then search should leave the **cursor** unchanged and return FALSE

You need to add its prototype into buffer.h, right? Also update editor.c so that you can use that function, for example if user enters: Sx, your editor.c should call this function with character x.

As always, make sure you release (free) the dynamically allocated memories if you allocate any memory in your programs. So, before submitting your program, run it with `valgrind` to see if there is any memory leakage...

Also if you need to debug your program, compile your programs with `-g` option and then run it with `gdb` and/or `ddd`.

/* Don't forget to include comments about the problem, yourself and each major step in your program! */

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You must submit your work using Blackboard Learn and respect the following rules:

- 1) All assignments must be submitted as either a zip or tar archive file unless it is a single pdf file.
- 2) Assignments must include all source code.
- 3) Assignments must include an output.txt file which demonstrates the final test output run by the student.
- 4) If your assignment does not run/compile, the output.txt file should include an explanation of what was accomplished, what the error message was that prevented the student from

finishing the assignment and what the student BELIEVES to be the underlying cause of the error.
