24.05.2022

Istanbul Technical University
Faculty of Computer and Informatics Engineering
BLG 102E - Int to Scientific&Eng.Computing (C)
Spring 2021-2022

Midterm 3

- Midterm exam will take **75 minutes** and it will be held in ITU computer laboratories.
- The questions will be announced through Ninova. **Submit your solutions to the corresponding Ninova announcements**: The solution for Q1 must be submitted to the **Midterm 3 – Q1**, whereas the solution for Q2 must be submitted to the **Midterm 3 – Q2**.
- Make sure your source code is compiled and linked successfully, and passed all the tests given with the questions before your submission.
- You are **not** allowed to use any data structures or types that have not been taught in the lectures.
- Remember to use **–std=c99 –Wall –Werror** flags while compiling with gcc.

Q1. (70 pts) Check the program "m3q1.c" for stripping leading (left) or trailing (right) spaces from a string. The user enters a string and a character that indicates which side will be stripped ('l' for "left", 'r' for "right", 'b' for "both") and prints out the accordingly stripped string between '|' delimiters.
The main function is already implemented and you're not allowed to change it in any way.

a) **(20 pts)** Write the lstrip (left strip) function so that it takes a source (src) string and a destination (dst) string, strips leading spaces from the source string and puts the result in the destination string. For example, if the user enters the string "| dennis ritchie |" and the character 'l', the output must be "|dennis ritchie |".
A possible implementation template has been given as comments; you can uncomment it and fill it in or write your own implementation.
You're not allowed to call any function for the implementation.

b) **(30 pts)** Write the rstrip (right strip) function that removes trailing spaces from the source string and puts the result in the destination string. For example, if the user enters the string
"| dennis ritchie |" and the character 'r', the output must be
"| dennis ritchie|".
You're not allowed to call any function for the implementation.

c) **(20 pts)** Write the strip function (strip on both ends). For example, if the user enters the string
"| dennis ritchie |" and the character 'b', the output must be
"|dennis ritchie|".
Your implementation must use the lstrip and rstrip functions you have implemented, and no other function.

Use "test_m3q1.t" file to test your program using calico. (python -m calico.cli m3q1.t).
Don't forget to submit your code through Ninova.

Q2. (30 pts) Modify the code "m3q2.c" to accomplish the following:

The program generates n integers in the range [a..b] with a given random number generation seed value. n, a, b and seed are entered by the user. Fix the errors in the code so that when the user enters the numbers "5 1 6 10", the program will print the output "2 5 3 6 1".

If you can't generate the exact requested output, you can still submit your incomplete solution. Partial grading will be applied where possible. But note that the incomplete solution is still supposed to be compilable and linkable.