CS 350: Programming Assignment 1e: 100 Points

Due 11:59 PM Feb 28, 2015

The objective of this assignment is to write several string manipulation functions in C. The functions to be written and their expected semantics are described below.

1. **Reverse words:** Write a function that reverses the order of words in a sentence. Words are a group of characters separated by a space. For example, the output for the string “C programs, are awesome” will be “awesome are programs, C”.

2. **Subset check:** Write a function to check if a given string is a subset of another. If the user enters the first string as “HelloHelo” and the second string as “loH”, the answer is true, else the answer is false.

3. **Partial copy:** Write a function to copy a string starting from the ***first time that a given character appears.*** For example, if the user enters “Have a nice day” as the string and “d” as the character, the output is “day”. If the requested character is not in the string, the output should be blank, i.e., an empty string.

The program should be named “assignment1e.c”. The program should allow the input string(s) and the function to be called as command line parameters. For example,

./assignment1e “This is a string” 1

The above call implies that the function to be called is reversing words (number 1 in the list above). The input string is put inside quotes. When you run the program, the variable argc will be set to 3. argv[0] will be set to the program name. argv[1] will be equal to the string “This is a string”. argv[2] will be set to the string “1”. You will have to parse these parameters and perform the required function. The output should only display the final output, i.e., string a is This. Do not say things like “the output is … etc.”. Also make sure there are no other debug statements printed in your final submission.

Note that, if you do not use quotes to input your string, each word will be treated as a separate parameter.

Sample inputs for parts 2 and 3 are as follows

./assignment1e “This is winter” “win” 2

./assignment2e “How are you” “o” 3

Based on the function that is called, if the required number of parameters is not input or if there is an error in the specification of the parameters, an error should be displayed. All error messages should start as “Error: “, followed by your own error message. **You can assume that the maximum length of each input string will be 100 characters.**

Submission Instructions:

Programs, written in C, must compile using *gcc* compiler on LCSEE Linux cluster (shell.csee.wvu.edu). To receive full credit, your program must be submitted by the deadline. Please note that Linux keeps track of the submission time. You are advised to keep a copy of your submission in your own account (with the original time-stamp). Remember that late assignments will be penalized by 5% of the grade for each day of delay (including weekend days). To submit, use the following command from the shell server, inside the folder where your code is stored:

>> submit –c /cloudproject/2015springcs350/assignment1e.submit assignment1e.c

The due date is **11:59PM, February 28th**.

Academic Honesty:

Each student in the class is expected to develop his/her assignment alone. Do not share programs, or program parts, with your colleagues. Violators of this policy will be held responsible for academic dishonesty, and will bear consequences in accordance to the rules and regulations of West Virginia University.