CS21 Lab 7, due 11/10/22

Exercise 1 — Arithmetic Evaluation (stack-based)

Write a program to evaluate 3ab - 2bc - 5a + 20ac – 16.

Prompt the user for the (32-bit single-precision) values a, b, and c. Try to use as small a number of registers as possible. Use anonymous variables on the stack to hold entered values and intermediate values from the calculations. Do not declare any variables in the .data section. Write the final value to the console with some descriptive text. Don't forget to clean up the stack!

Exercise 2 — Vowel Removal (stack-based)

Write a program that asks the user for a string. Read the string into a buffer. Echo-print the string.

Push a NUL character (remember, as a word) onto the stack. Now scan the string until you find the '\n', then back up and scan from right to left, starting with the right-most character (the one just before the '\n'.) Push each non-vowel character onto the stack. Skip over vowels. You may assume the string comprises all lower-case letters and spaces, and ends with a period '.'. Vowels are 'a', 'e', 'i', 'o', and 'u'.

Now pop the stack character by character (remember, words!) back into the buffer, stopping after you have stored the NUL byte you pushed at the beginning. Put characters into the buffer from left to right. The buffer will now contain the string, in the correct order, without vowels.

Print the final string.