CSCE 212: Intro to Computer Architecture
Project 2 Code (80%)

Project Details

Purpose of this project is to increase your understanding of data, address, memory contents, and strings. You are expected to use MIPS assembly language instructions, assembler directives and system calls to handle string manipulation tasks. You are tasked to develop a program that finds how many times a word is used in a given statement. To test your program, you should hardcode the below sample statement in your code, and ask user to input two different words, such as "Gamecocks" and "Football", and then print the number of times these words are repeated in the sample statement.

NOTE: Your program should **NOT** be case sensitive and regardless of how user types the words (Uppercase, Lowercase, combination of uppercase and lowercase) it should correctly find the corresponding words.

Sample Statement:

The South Carolina Gamecocks football program represents the University of South Carolina in the sport of American football. The Gamecocks compete in the Football Bowl Subdivision of the National Collegiate Athletic Association (NCAA) and the Eastern Division of the Southeastern Conference. Will Muschamp currently serves as the team's head coach. They play their home games at Williams-Brice Stadium. Currently, it is the 20th largest stadium in college football.

Sample Output:

Please input first word: Gamecocks (or gamecocks, or GAMEcocks , …)
Please input second word: Football (or FootBall, footBALL, …)
GAMECOCKS: 2
FOOTBALL: 4

Project 2 Report (20%)

Project Report submission: 100 points total as follows:

Professional preparation: [10 points total] as follows:
i.e. Typed document with text of the paragraphs in Times New Roman 11 pt font, clear and grammatically well-formed explanations, cover sheet provided, page numbering and document heading numbering (1.0, 2.0, 3.0, etc to identify the required sections listed below).

Report Content: [90 points total]

1.0 Project Description: project name and description including program inputs and outputs. [10 pts]

2.0 Program Design: description of how your code operates, and a flowchart with sufficient explanation about the program design. [10 pts for description and 10 pts for high quality flowchart]

3.0 Symbol Table: a Table describing all Registers used and their specific purpose in the code, where each register is listed on a separate row and identified by register name **`$t0, $s0,`** etc., as well as any Labels used and their purpose on separate rows. [10 pts for register table and 10 pts for label table]

4.0 Learning Coverage: provide a list of at least 5 technical topics learned from this project. [10 points]

5.0 Test Plan: provide details in sentences identifying the inputs chosen to test the program and why these were selected, and justification why they provide adequate test coverage. [15 points]

6.0 Test Results: provide screen shot(s) of at least 3 proper MIPS code executions in MARS for your Test Plan inputs. [15 points]