Assignment #11 – MIPS Functions 1 **CS 218 Spring 2021**

Purpose: Write a MIPS program that will work implement some useful functions.

Instructions

Function 1 - Length of a Null Terminated String
This function will take a single argument: an address to a null terminated string. The function will return the number of characters (not including the NULL) in the string.

Function 2 - Casefold String to Upper Case
This function will take a single argument: an address to a null terminated string. The function will change all the lower case letters in the string to upper case.

Function 3 – Print Factors of a Number
This function will take a single word sized integer argument and print all the positive factors of the given number separated by commas. Make negative inputs positive.

A factor of a number is any number that evenly divides a number with no remainder.

12 has factors of 1, 2, 3, 4, 6, and 12.

For an input of 0, print "All Positive Integers" instead.

In main:
Ask the user to enter a message to casefold. Use a buffer size of 31 to read in the string. Output the size of the string as well as the casefolded version.

Then ask the user to enter a number. Output the positive factors of the number.

Submission
Once completed, upload the MIPS assembly source code file (.asm) to the class website.

Example Execution

```
Enter a message: Hello, Program!
String Length: 16
Casefolded Message: HELLO, PROGRAM!


-----
Enter a number: 16
Positive Factors: 1, 2, 4, 8, 16
```

Note that the length is 16 since the linefeed was included in the buffer.

Example Execution

```
Enter a message: Factors of 0.
String Length: 14
Casefolded Message: FACTORS OF 0.


-----
Enter a number: 0
Positive Factors: All Positive Integers
```

Example Execution

```
Enter a message: Factors of Negative 12 are...
String Length: 30
Casefolded Message: FACTORS OF NEGATIVE 12 ARE...


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Enter a number: -12
Positive Factors: 1, 2, 3, 4, 6, 12
```