22C:060: Computer Organization
Spring 2011
Assignment 2
Total points = 50

Assigned February 15, due February 22, 2011. 11:59:59 PM

Instructions to submit your homework

1. Be generous about using comments to improve readability. This includes a comment at the beginning specifying the purpose of the program.

2. To submit the program, *zip* (or *tar*) them into a single file that has your last name as the prefix. Use ICON drop box to submit your assignment.

The Questions

Part 1 (20 points) Write a program using MIPS assembly language to multiply two 8-bit unsigned integers **x** and **y**. For each integer as well as the product, use a 32-bit representation. Since the integers are small, there should not be any problem with overflow. Use repeated addition to carry out multiplication. The algorithm is trivially simple, and does not need any explanation. The user should be able to enter a number between 0 and 255 after the prompts "Enter x" and "Enter y" are displayed on the screen. The result should be displayed on the screen as "Product = "

Part 2 (10 points) Use the programs in Part 1 as a subroutine to compute the square of the elements of an unsigned integer array A = [1, 7, 13, 20, 125, 5, 35, 12]. You can enter the array elements directly into the data section of your program. Show the result as "A square ="

 (Do not use the **mult** instruction of MIPS for doing any part of this assignment)

Part 3 (20 points) Write a program that accepts as inputs an asciiz string consisting of a sequence of words separated by one or more blanks, and outputs the string with all blanks removed. Example:

> input: "the quick brown fox"

> output "thequickbrownfox"

The user should be able to enter a string of maximum length 64 characters after the prompt "Enter the input string:" and the result will be displayed on the screen as "The output string is:"