

CS 240 Laboratory 10 Assignment

Due: Wednesday, before lab

Write a program in MIPS assembly language that implements your lab microcomputer multiplication program from lab 9. Use the same algorithm (successive addition - in other words, I don't want you to use a multiplication instruction).

Your program should use strings to prompt the user for the two values to multiply, rather than assuming the values are at address 2 and 3. Store the values input by the user in memory at addresses labeled **op1** and **op2**. Store the result of the calculation in memory at an address labeled **result**, and then print the result to the console.

Here is the program from lab 9:

	0:	0072	LW	R0 R7 2	Load a 2 stored at address 2 to R7 (loop counter)
	2:	0083	LW	R0 R7 3	Load a 3 stored at address 3 to R8 (addend)
	4:	5002	OR	R0 R0 R2	Initialize R2 (result) to 0
(loop)	6:	7703	BEQ	R7 R0 3	If loop counter is 0, go to end addr.E = (PC+2 + 2*3)
	8:	2822	ADD	R8 R2 R2	result = result + addend
	A:	3717	SUB	R7 R1 R7	counter = counter - 1
	C:	8003	JMP	003	jump to loop = offset*2
(end)	E:	0055	LW	R0 R5 5	Load a 5 stored address 5 to R5
	10:	1525	SW	R5 R2 5	Store result from R2 to address 10
	12:	05F5	LW	R5 R15 R15	Load result to R15
	14:	5FFF	OR	R15 R15 R15	Display result

Use a text editor (i.e. Notepad on a PC, TextWrangler on a Mac) to create your source file. Save your program as **multiply.asm**, and send it to me as an attachment to an email.