

Cpr E 381 Homework 2

1. Install a version of spim (the MIPS simulator). The software is available for Windows and Linux/Unix/Mac OSX systems. It can be found on the CD included with your book or can be downloaded from the web (<http://pages.cs.wisc.edu/~larus/spim.html>).

Read the platform specific introduction to the simulator.

Type the program at right into a text file named "hw2.s".

Load the program into spim.

- A) Run the program several times trying different values. Submit results for at least three distinct values.
- B) What is the program doing? Keep your answers brief.
- C) Submit a line commented source code describing the program.
- D) Translate and submit the program into C code.

You will want to look at Chapter 2 as a reference for instructions. Appendix A from the book (may be on the CD) will also be useful, especially for the "syscall" operations.

```
.data
str1: .ascii " Please enter a number >= 1 : "
str2: .ascii "\n\n The result is:"
.text
.globl main

main:
    li $v0, 4
    la $a0, str1
    syscall

    li $v0, 5
    syscall
    move $t1, $v0

    addi $t3, $zero, 1
    slti $t2, $t1, 1
    beq $t3, $t2, do_nothing

    addi $t0, $t0, 0
loop:
    sge $t2, $t1, $t3
    beq $t2, $zero, end

    add $t0, $t0, $t1
    addi $t1, $t1, -1
    j loop

end:
    li $v0, 4
    la $a0, str2
    syscall

    li $v0, 1
    move $a0, $t0
    syscall

do_nothing:

    li $v0, 10
    syscall
```