#Christopher Rabb

#Salam Salloum

.data

array: .space 80

Prompt: .asciiz "\nEnter an integer: "

SL: .asciiz "\nThe smallest and largest: "

Space: .asciiz " "

Four: .asciiz "\nIntegers divisible by 4: "

.globl main

.text

main: la $t0, array

li $t1, 20

loop: la $a0, Prompt

li $v0, 4

syscall

li $v0, 5

syscall

sw $v0, 0($t0)

addi $t0, $t0, 4

addi $t1, $t1, -1

bgtz $t1, loop

la $a0, array

li $a1, 19

lw $t2, 0($a0) #load first element into variable

lw $t3, 0($a0) #load first element into variable

jal smalar

la $a0, SL

li $v0, 4

syscall

move $a0, $t2 #smallest number

li $v0, 1

syscall

la $a0, Space

li $v0, 4

syscall

move $a0, $t3 #greatest number

li $v0, 1

syscall

la $a0, Four

li $v0, 4

syscall

la $a0, array

li $a1, 20

jal divFour

li $v0, 10

syscall

smalar: blez $a1, ret #exit function

addi $a0, $a0, 4

addi $a1, $a1, -1

lw $t4, 0($a0)

bgt $t2, $t4, less #number is less than

blt $t3, $t4, great #number is greater than

bgtz $a1, smalar #loop until all elements are checked

ret: jr $ra

less: lw $t2, 0($a0) #puts element in variable

j smalar

great: lw $t3, 0($a0) #puts element in variable

j smalar

divFour:

move $t0, $a0 #move array address

move $t1, $a1 #move number of elements

check: blez $t1, out

lw $a0, 0($t0) #load element into variable

addi $t0, $t0, 4

addi $t1, $t1, -1

rem $a1, $a0, 4 #Remainder of $a0/4

bnez $a1, check #if remainder != 0, loop

li $v0, 1

syscall

la $a0, Space

li $v0, 4

syscall

bgtz $t1, check

out: jr $ra