.data

array: .space 80

prompt:.asciiz "Input Integer: "

small: .asciiz "Smallest value in the array: "

large: .asciiz "Largest value in the array: "

divis: .asciiz "Number of integers that are divisible by 4: "

newL: .asciiz "\n"

.text

main: li $t0, 20

la $t1,array

#load array

loop: la $a0,prompt

li $v0,4 #print prompt

syscall

li $v0,5 #loads int to v0

syscall

sw $v0,0($t1)

add $t0,$t0,-1

add $t1,$t1,4

bgtz $t0,loop

#call smallestLargest

la $a0,small

li $v0,4

syscall

li $a0, 20

la $a1,array

jal smallestLargest

move $a0,$v0 #smallest in v0

li $v0,1

syscall

la $a0,newL

li $v0,4

syscall

la $a0,large

li $v0,4

syscall

move $a0,$v1 #largest in v1

li $v0,1

syscall

la $a0,newL

li $v0,4

syscall

#call divisible

la $a0,divis

li $v0,4

syscall

li $a0, 20

la $a1,array

jal divisible

move $a0,$v1 #count was in v1

li $v0,1

syscall

la $a0,newL

li $v0,4

syscall

li $v0, 10 #stop

syscall

smallestLargest: #returns smallest in v0 and largest in v1

loop2:

b smallest

next: add $a0,$a0,-1

add $a1,$a1,4

bgtz $a0,loop2

jr $ra

smallest:

lw $t0,($a1) #load int from array to t0

bgt $t0,$v0,largest #skip if bigger than current

move $v0,$t0 #change v0 to new smallest

b largest

largest:

lw $t0,($a1) #load int from array to t0

blt $t0,$v1,next #skip if less than current

move $v1,$t0 #change v1 to new largest

b next

divisible: #returns count in v1

li $v1,0 #count is 0 to start

loop3:

lw $t0,($a1) #get int from array

remu $t1,$t0,4 #t1 = t0%4

bgtz $t1,next2 #skip if not divisible by 4

add $v1,$v1,1 #increase count

next2: add $a0,$a0,-1

add $a1,$a1,4

bgtz $a0,loop3

jr $ra

