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CS 264
Lab 2

```
.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
```

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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
```

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            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
```
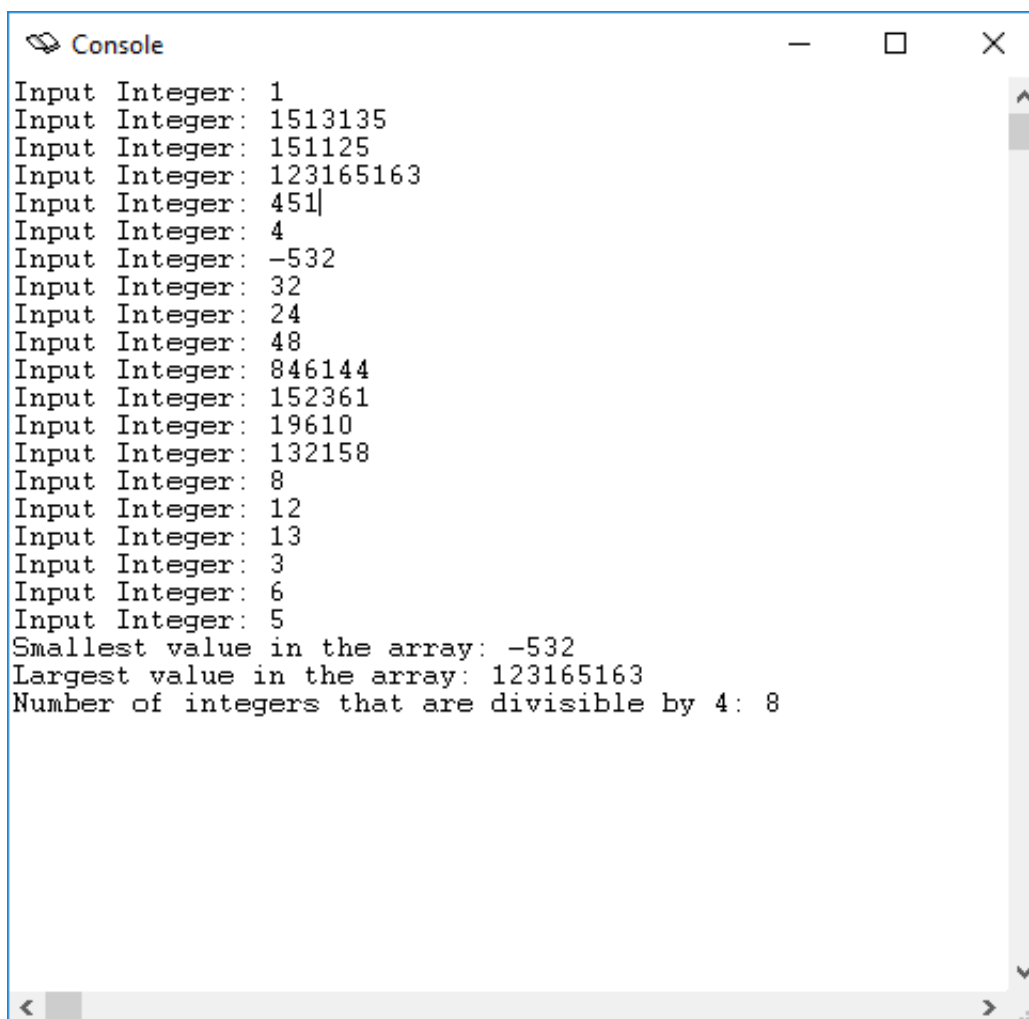
loop3:

       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

```
Console                              —    □    ✕
Input Integer: 1
Input Integer: 1513135
Input Integer: 151125
Input Integer: 123165163
Input Integer: 451|
Input Integer: 4
Input Integer: -532
Input Integer: 32
Input Integer: 24
Input Integer: 48
Input Integer: 846144
Input Integer: 152361
Input Integer: 19610
Input Integer: 132158
Input Integer: 8
Input Integer: 12
Input Integer: 13
Input Integer: 3
Input Integer: 6
Input Integer: 5
Smallest value in the array: -532
Largest value in the array: 123165163
Number of integers that are divisible by 4: 8
```