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CS264

Lab 1:

Program:

.data

array: .space 80

prompt: .asciiz "Input Integer: "

prompt2:.asciiz "Input Number Of Integers Per Line:"

newLine:.asciiz "\n"

aspace: .asciiz " "

.text

.globl main

main: #setup

li $t0, 20 #counter var to 20

la $a1, array #load array address into $a1

#loading loop

loopl:

la $a0, prompt #load prompt into $a0

li $v0, 4 #print ascii

syscall

li $v0,5 #load int

syscall

sw $v0, 0($a1) #save from v0 to array

add $t0,$t0,-1 #decrement counter var

add $a1,$a1,4 #increment to next space in array

bgtz $t0,loopl #if $t0 > 0, loop back to loopl

#printing setup by line loop

li $t0,20 #load counter var to 20

la $a1,array #load array address to a1

#printing by line loop

looppl:

lw $a0,0($a1) #load int from a1 to a0(from right to left)

li $v0,1 #print int

syscall

la $a0,newLine #load newLine

li $v0,4 #print ascii

syscall

add $t0,$t0,-1 #decrement counter var

add $a1,$a1,4 #move to next spot in array

bgtz $t0,looppl #loop back to looppl

#add a newLine

la $a0,newLine #load newLine

li $v0,4 #print ascii

syscall

#printing setup by space loop

li $t0,20 #load counter var to 20

la $a1,array #load array address to a1

#printing by space loop

loopsc:

lw $a0,0($a1) #load int from a1 to a0(from right to left)

li $v0,1 #print int

syscall

la $a0,aspace #load space

li $v0,4 #print ascii

syscall

add $t0,$t0,-1 #decrement counter var

add $a1,$a1,4 #move to next spot in array

bgtz $t0,loopsc #loop back to loopsc

#add a newLine

la $a0,newLine #load newLine

li $v0,4 #print ascii

syscall

#get an int and then ask again if less than 20

rqstInt:

li $t0, 20 #counter var to 20

li $t1, 0 #number of ints printed counter

la $a1, array #load array address into $a1

la $a0, prompt #load prompt into $a0

li $v0, 4 #print ascii

syscall

li $v0,5 #load int

syscall

move $t2,$v0 #save user input from v0 to holder var

#inner loop that prints with spaces

#print ints with spaces

printSpcLoop:

lw $a0,0($a1) #load int from a1 to a0(from right to left)

li $v0,1 #print int

syscall

la $a0,aspace #load space

li $v0,4 #print ascii

syscall

add $t0,$t0,-1 #decrement counter var

add $a1,$a1,4 #move to next spot in array

add $t1,$t1,1 #increment number of ints printed counter

blez $t0,newLineLoop #if done with printing go to newLineLoop

blt $t1,$t2,printSpcLoop #if $t1 counter var is less than user input

#don't make a new line

#print out ints and newline after done with printing with spaces

newLineLoop:

li $t1,0 #reset number of ints printed counter

#add a newLine

la $a0,newLine #load newLine

li $v0,4 #print ascii

syscall

bgtz $t0,printSpcLoop #loop back to spaceLoop if still need to print things

Ouput:

 