Brandon Nguyen

Salloum CS264

1 November 2016

Lab #3

.data

buffer: .space 20

array: .space 512

prompt: .asciiz "Enter a string(max 20 characters): "

return: .asciiz "\n"

space: .asciiz " "

number: .asciiz "Number of "

spaceC: .asciiz "Number of spaces "

isPali: .asciiz "Is it a palindrone? (0 is no, 1 is yes) "

.globl main

.text

main: la $a0, prompt

li $v0, 4

syscall

la $a0, buffer

la $a1, 20

li $v0, 8

syscall

li $t4, 4

la $a0, buffer

loop1: la $t0, array

lb $t1, ($a0)

beqz $t1, next

addi $a0, $a0, 1

mul $t1, $t1, 4

add $t0, $t0, $t1

lw $t2, ($t0)

addi $t2, $t2, 1

sw $t2, ($t0)

b loop1

next: la $a0, spaceC

li $v0, 4

syscall

la $a0, array

addi $a0, $a0, 128

lw $t0, ($a0)

move $a0, $t0

li $v0, 1

syscall

la $a0, return

li $v0, 4

syscall

la $a1, array

addi $a1, $a1, 260

li $t0, 65

li $t1, 26

printUpper:

la $a0, number

li $v0, 4

syscall

move $a0, $t0

li $v0, 11

syscall

la $a0, space

li $v0, 4

syscall

lw $a0, ($a1)

li $v0, 1

syscall

la $a0, return

li $v0, 4

syscall

addi $a1, $a1, 4

addi $t1, $t1, -1

addi $t0, $t0, 1

blez $t1, next2

b printUpper

next2: la $a1, array

addi $a1, $a1, 388

li $t0, 97

li $t1, 26

printLower:

la $a0, number

li $v0, 4

syscall

move $a0, $t0

li $v0, 11

syscall

la $a0, space

li $v0, 4

syscall

lw $a0, ($a1)

li $v0, 1

syscall

la $a0, return

li $v0, 4

syscall

addi $a1, $a1, 4

addi $t1, $t1, -1

addi $t0, $t0, 1

blez $t1, next3

b printLower

next3:

la $a0, isPali

li $v0, 4

syscall

la $a0, buffer

jal pali

move $a0, $v0

li $v0, 1

syscall

la $a0, return

li $v0, 4

syscall

stop: li $v0, 10

syscall

pali: li $v0, 1

slti $t0, $a1, 2

bnez $t0, retzz

move $t1, $a0

move $t2, $a0

len: lb $t3, ($t2)

beqz $t3, endLen

addi $t2, $t2, 1

b len

endLen: addi $t2, $t2, -2

loop2: bge $t1, $t2, retzz

lb $t3, ($t1)

lb $t4, ($t2)

bne $t3, $t4, false

addi $t1, $t1, 1

addi $t2, $t2, -1

b loop2

false: li $v0, 0

b retzz

retzz: jr $ra

