Brandon Nguyen

CS 264

Professor Salloum

22 November 2016

Lab #5

.data

array: .space 480

recordT: .space 48

newLine: .asciiz "\n"

newPara: .asciiz "\n\n"

promptN: .asciiz "Please enter a name (up to 40 characters): "

promptA: .asciiz "Please enter an age: "

promptS: .asciiz "Please enter a salary: "

prompt2: .asciiz "Enter first record to be swapped(index begins at 0): "

prompt3: .asciiz "Enter second record to be swapped(index ends at 9): "

name1: .asciiz "name: "

age: .asciiz "age: "

salary: .asciiz "salary: "

entry: .asciiz "Record #: "

.globl main

.text

main: la $t0, array

li $t1, 10

li $t2, 0

loop1:

la $a0, promptN

li $v0, 4

syscall

move $a0, $t0

li $a1, 40

li $v0, 8

syscall

la $a0, promptA

li $v0, 4

syscall

li $v0, 5

syscall

sw $v0, 40($t0)

la $a0, promptS

li $v0, 4

syscall

li $v0, 5

syscall

sw $v0, 44($t0)

la $a0, newLine

li $v0, 4

syscall

addi $t0, $t0, 48

addi $t1, $t1, -1

bgtz $t1,loop1

la $a0, newLine

li $v0, 4

syscall

la $t0, array

li $t1, 10

loop2: la $a0, entry#

li $v0, 4

syscall

move $a0, $t2

li $v0, 1

syscall

la $a0, newLine

li $v0, 4

syscall

la $a0, name1

li $v0, 4

syscall

move $a0, $t0

li $v0, 4

syscall

la $a0, age

li $v0, 4

syscall

lw $a0, 40($t0)

li $v0, 1

syscall

la $a0, newLine

li $v0, 4

syscall

la $a0, salary

li $v0, 4

syscall

lw $a0, 44($t0)

li $v0, 1

syscall

la $a0, newPara

li $v0, 4

syscall

addi $t0, $t0, 48

addi $t1, $t1, -1

addi $t2, $t2, 1

bgtz $t1,loop2

swap: la $a0, prompt2

li $v0, 4

syscall

li $v0, 5

syscall

la $a1, array

li $s0, 48

mul $t1, $v0, $s0

add $t0, $a1, $t1

la $a0, recordT

li $t2, 48

loop3: lb $t1, ($t0)

sb $t1, ($a0)

addi $t0, $t0, 1

addi $a0, $a0, 1

addi $t2, $t2, -1

bgtz $t2, loop3

la $a0, prompt3

li $v0, 4

syscall

li $v0, 5

syscall

add $t1, $t0, -48

mul $t2, $v0, $s0

add $t0, $a1, $t2

li $t3, 48

loop4: lb $t2, ($t0)

sb $t2, ($t1)

addi $t0, $t0, 1

addi $t1, $t1, 1

addi $t3, $t3, -1

bgtz $t3, loop4

la $a0, recordT

addi $t1, $t0, -48

li $t3, 48

loop5: lb $t2, ($a0)

sb $t2, ($t1)

addi $t1, $t1, 1

addi $a0, $a0, 1

addi $t3, $t3, -1

bgtz $t3, loop5

la $t0, array

li $t1, 10

li $t2, 0

loop6: la $a0, entry#

li $v0, 4

syscall

move $a0, $t2

li $v0, 1

syscall

la $a0, newLine

li $v0, 4

syscall

la $a0, name1

li $v0, 4

syscall

move $a0, $t0

li $v0, 4

syscall

la $a0, age

li $v0, 4

syscall

lw $a0, 40($t0)

li $v0, 1

syscall

la $a0, newLine

li $v0, 4

syscall

la $a0, salary

li $v0, 4

syscall

lw $a0, 44($t0)

li $v0, 1

syscall

la $a0, newPara

li $v0, 4

syscall

addi $t0, $t0, 48

addi $t1, $t1, -1

addi $t2, $t2, 1

bgtz $t1,loop6

end: li $v0, 10

syscall

Output:

Please enter a name (up to 40 characters): a

Please enter an age: 0

Please enter a salary: 0

Please enter a name (up to 40 characters): b

Please enter an age: 1

Please enter a salary: 1

Please enter a name (up to 40 characters): c

Please enter an age: 2

Please enter a salary: 2

Please enter a name (up to 40 characters): d

Please enter an age: 3

Please enter a salary: 3

Please enter a name (up to 40 characters): e

Please enter an age: 4

Please enter a salary: 4

Please enter a name (up to 40 characters): f

Please enter an age: 5

Please enter a salary: 5

Please enter a name (up to 40 characters): g

Please enter an age: 6

Please enter a salary: 6

Please enter a name (up to 40 characters): h

Please enter an age: 7

Please enter a salary: 7

Please enter a name (up to 40 characters): j

Please enter an age: 8

Please enter a salary: 8

Please enter a name (up to 40 characters): k

Please enter an age: 9

Please enter a salary: 9

Record #: 0

name: a

age: 0

salary: 0

Record #: 1

name: b

age: 1

salary: 1

Record #: 2

name: c

age: 2

salary: 2

Record #: 3

name: d

age: 3

salary: 3

Record #: 4

name: e

age: 4

salary: 4

Record #: 5

name: f

age: 5

salary: 5

Record #: 6

name: g

age: 6

salary: 6

Record #: 7

name: h

age: 7

salary: 7

Record #: 8

name: j

age: 8

salary: 8

Record #: 9

name: k

age: 9

salary: 9

Enter first record to be swapped(index begins at 0): 0

Enter second record to be swapped(index ends at 9): 1

Record #: 0

name: b

age: 1

salary: 1

Record #: 1

name: a

age: 0

salary: 0

Record #: 2

name: c

age: 2

salary: 2

Record #: 3

name: d

age: 3

salary: 3

Record #: 4

name: e

age: 4

salary: 4

Record #: 5

name: f

age: 5

salary: 5

Record #: 6

name: g

age: 6

salary: 6

Record #: 7

name: h

age: 7

salary: 7

Record #: 8

name: j

age: 8

salary: 8

Record #: 9

name: k

age: 9

salary: 9