TRƯỜNG ĐẠI HỌC BÁCH KHOA HÀ NỘI

BÁO CÁO MÔN HỌC

Tên học phần : Thực hành Kiến trúc máy tính IT3280

Học kỳ 20212 năm học 2021-2022

ĐỀ BÀI

Midterm

Bài làm

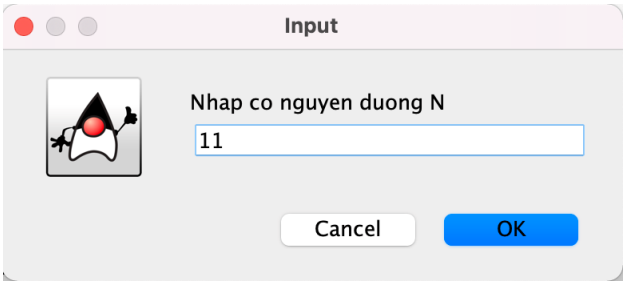
Topic A:

Assignment 5:

Code:

```
 .data
A:        .space 100
Message1:        .asciiz  "Nhap co nguyen duong N"
Message2:        .asciiz "Tong cac chu so la so le la: "
Message3:        .asciiz "Tong cac chu so la so chan la: "
.text
main:
        la $s0, A #Create array A
        li $t0, 0 #Number first
        li $t1 1 #Number second
        li $s2, 1 #count Number of array A
        li $v0, 51
        la $a0, Message1 #Enter so nguyen N
        syscall
        add $s1, $zero, $a0 #N
        syscall
```

Kết quả:



Topic B:

Assignment 9:

Code:

```
.data
        Message1:       .asciiz "So phan tu cua mang: "
        Error:  .asciiz "phan tu phai lon hon 0\n"
        Message2:       .asciiz "phan tu thu "
        Message3:       .asciiz " la:"
        Message4:       .asciiz "Phan tu chan nho nhat lon hon tat ca cac so le trong mang la: "
        Message5:       .asciiz " Mang khong co phan tu le"space:
        .asciiz "\t"
        arr:    .word 0:100
.text
main:
# Nhap So Luong Phan Tu
        la $a0,msg_input
        li $v0,4
        syscall
# Chuyen qua thanh ghi $t0
        li $v0,5
        syscall
        move $t0,$v0
# Nhap cac phan tu cua mang
```

```
        li $v0,4
        la $a0,msg_input2
        syscall
        li $t1,0
        la $t2,arr
lap:
        li $v0,5
        syscall
        sw $v0,($t2)
        addi $t1,$t1,1
        addi $t2,$t2,4
        blt $t1,$t0,lap
# xu ly
        li $t1,0
        la $t2,arr
xuly:
        lw $t4,($t2)
        ble $t4,$t3,tiep
# input on display
        li $v0,1
        move $a0,$t4
        syscall
# Khoang Trang
        li $v0,4
        la $a0,space
        syscall
tiep:
        addi $t1,$t1,1
        addi $t2,$t2,4
        blt $t1,$t0,xuly
```

```
        li $v0,10
        syscall
/////
        Nhap_so_phan_tu:
        li $v0,4
        la $a0,mess1            # print   string
        syscall

        li $v0,5                # read integer
        syscall

        add $t5,$t5,$v0         # luu so phan tu cua mang vào $t5 (n phan tu)
        slt $t9,$t5,$zero# kiem tra n < 0 thí lenh duoi se nhay den nhan loi ($t5<0 thi $t9=1)
        bne $t9,$zero,loi       # $t9 = 0, khong co loi
        j ketthuc

loi:
        li $v0,4
        la $a0,error            #in chuoi
        syscall

        j Nhap_so_phan_tu       #nhap lai

ketthuc:
        li $t1,0                # i = 0
nhap_mang:
        beq $t1,$t5,end_nhapmang # i = n thi ket thuc vong lap

        li $v0,4
        la $a0,mess2            #in chuoi
```

```
        syscall

        li $v0,1
        add $a0,$t1,$zero       # in i
        syscall

        li $v0,4
        la $a0,mess3            #in chuoi
        syscall

        li $v0,5                # nhan 1 so nguyen nhap tu ban phim
        syscall

        sll $t2,$t1,2           # dich trai i sang 2 bit ($t1*4 = $t2)
        sw      $v0,A($t2)              # luu gia tri so vua nhap vao A[i]

        addi $t1,$t1,1          # i++
        j nhap_mang

end_nhapmang:
        li $t9,0  #sum
        li $t1,0  # i=0
        la $a0,A        #load dia chi mang A ( A[0] )
        li $t8,3

khaibao:
        li $s0, 10000000                #max
        add $s2, $s0, 0         # min = max
        li      $t1, 0                  # i=0
        li      $s3, 2
```

```
        j loop
loop_up:
        addi $t1,$t1,1                  ///////    (//////Em đang làm dở//////)
```

Nhập mảng:

```
Nhap so phan tu cua mang: 8
Nhap phan tu: 11
2
3
9
12
8
3
4
11      2       3       9       12      8       3       4
-- program is finished running --
```

Topic C:

Assignment 3:

Code:

```
.data
inputString:       .space 100 # Buffer 100 byte chua chuoi ki tu can
.text
        li $v0, 8
        la $a0, inputString   # save address of inputString
        li $a1, 100
        syscall

        li $v0,4
        li $t0,0
loop:
        lb $t1, inputString($t0)
        beq $t1, 0,exit
```

```
        bgt $t1, 'a',toupcase
        blt $t1, 'Z',tolowcase


toupcase:
        sub $t1, $t1, 32
        sb $t1, inputString($t0)
        addi $t0,$t0,1
        j loop
tolowcase:
        add $t1, $t1, 32
        sb $t1, inputString($t0)
        addi $t0,$t0,1
        j loop
exit:
        li $v0, 4
        la $a0, inputString
        syscall

        li $v0, 10              # exit program
        syscall
```

Kết quả:

```
tRaNhoAnG
TrAnHOaNg*
-- program is finished running --
```