Họ và tên: Phạm Hoàng Duy

MSSV: 22520339

**Báo cáo Lab4**

**2. Thực hành**

**2.1.**

.text

bne $s0,$s1,Else

If:

add $s2,$t0,$t1

j Exit

Else:

sub $s2,$t0,$t1

Exit:

**2.2.**

.text

addi $s2,$0,0

addi $s0,$0,0

Loop:

bgt $s0,$s1,endloop

add $s2,$s2,$s0

addi $s0,$s0,1

j Loop

End:

**3. Bài tập**

**3.1.**

.data

nofront: .asciiz "Khong ton tai ky tu truoc\n"

noback: .asciiz "Khong ton tai ky tu sau\n"

nhap: .asciiz "Nhap ky tu: "

truoc: .asciiz "Ky tu truoc: "

sau: .asciiz "Ky tu sau: "

loi: .asciiz "invalid type"

endl: .asciiz "\n"

in: .asciiz "Ky tu la chu in"

thuong: .asciiz "Ky tu la chu thuong"

so: .asciiz "Ky tu la so"

.text

li $v0,4

la $a0,nhap

syscall

li $v0,12

syscall

move $s0,$v0

li $v0,4

la $a0,endl

syscall

jal check\_upper

jal check\_lower

jal check\_number

jal invalid

j end\_proc

check\_upper:

blt $s0,'A',end\_func

bgt $s0,'Z',end\_func

li $t2,'A'

jal front

li $t2,'Z'

jal back

li $v0,4

la $a0,in

syscall

j end\_proc

check\_lower:

blt $s0,'a',end\_func

bgt $s0,'z',end\_func

li $t2,'a'

jal front

li $t2,'z'

jal back

li $v0,4

la $a0,thuong

syscall

j end\_proc

check\_number:

blt $s0,'0',end\_func

bgt $s0,'9',end\_func

li $t2,'0'

jal front

li $t2,'9'

jal back

li $v0,4

la $a0,so

syscall

j end\_proc

invalid:

li $v0,4

la $a0,loi

syscall

jr $ra

front:

addi $a0,$s0,-1

blt $a0,$t2,do

li $v0,4

la $a0,truoc

syscall

li $v0,11

addi $a0,$s0,-1

syscall

li $v0,4

la $a0,endl

syscall

jr $ra

do:

li $v0,4

la $a0,nofront

syscall

jr $ra

back:

addi $a0,$s0,1

bgt $a0,$t2,do2

li $v0,4

la $a0,sau

syscall

li $v0,11

addi $a0,$s0,1

syscall

li $v0,4

la $a0,endl

syscall

jr $ra

do2:

li $v0,4

la $a0,noback

syscall

jr $ra

end\_func:

jr $ra

end\_proc:

**3.2.**

.data #khai báo vùng nhớ data

input: .asciiz "Input : "

a: .asciiz "a = "

b: .asciiz "b = "

cong: .asciiz "a + b = "

tru: .asciiz "a - b = "

nhan: .asciiz "a \* b = "

chia: .asciiz "a / b = "

output: .asciiz "Output : "

endl: .asciiz "\n"

.text

li $v0,4 #xuất "Input : "

la $a0,input

syscall

la $a0,a

syscall

li $v0,7

syscall

mov.d $f2,$f0

li $v0,4

la $a0,b

syscall

li $v0,7

syscall

mov.d $f4,$f0

li $v0,4

la $a0,output

syscall

la $a0,cong

syscall

li $v0,3

add.d $f12,$f2,$f4

syscall

li $v0,4

la $a0,endl

syscall

la $a0,tru

syscall

sub.d $f12,$f2,$f4

li $v0,3

syscall

li $v0,4

la $a0,endl

syscall

la $a0,nhan

syscall

mul.d $f12,$f2,$f4

li $v0,3

syscall

li $v0,4

la $a0,endl

syscall

la $a0,chia

syscall

div.d $f12,$f2,$f4

li $v0,3

syscall