

PW N° 03

Exercise 1 :

What will be the values of the registers used after the execution of the following program?
The user enters both values 17 and 4

```
.text
li $v0,5
syscall
move $t0,$v0
li $v0,5
syscall
move $t1,$v0
div $t2,$t1,$t0
mul $t3,$t0,$t1
mfhi $a0
li $v0,1
syscall
li $v0,10
syscall
```

Exercise 3 :

What is the role of each program?

Code1 :

```
.data
m1:.asciiz "message1 "
m2:.asciiz "message2 "
.text
li $v0,5
syscall
rem $t1,$v0,2
beqz $t1,étiq1
li $v0, 4
la $a0, m1
syscall
j exit
étiq1:li $v0, 4
la $a0, m2
syscall
exit : li $v0, 10
syscall
```

Exercise 2 :

Write the assembler program corresponding to the following algorithm:

Algorithm Pos-neg-null;

Var n: integer;

Begin

Write("give a number :");

Read(n);

If (n < 0) then

Write (" the number is negative ");

else

If (n > 0) then

Write (" the number is positive ");

else

Write ("the number is null");

endif

endif

end.

Code2 :

```
.text
li $v0,5
syscall
move $t0,$v0
li $t1,1
li $t2,0
for : bgt $t1,$t0,fin
add $t2, $t2, $t1
add $t1, $t1, 1
j for
fin:
li $v0, 1
move $a0,$t2
syscall
li $v0, 10
syscall
```

Exercise 4:

Write an assembly program that calculates x^y given that x and y are integers.

Exercise 5:

Write an assembly program that calculates the factorial of an integer N.

Exercise 6:

Write an assembly program that displays the minimum and maximum of three numbers entered on the keyboard.