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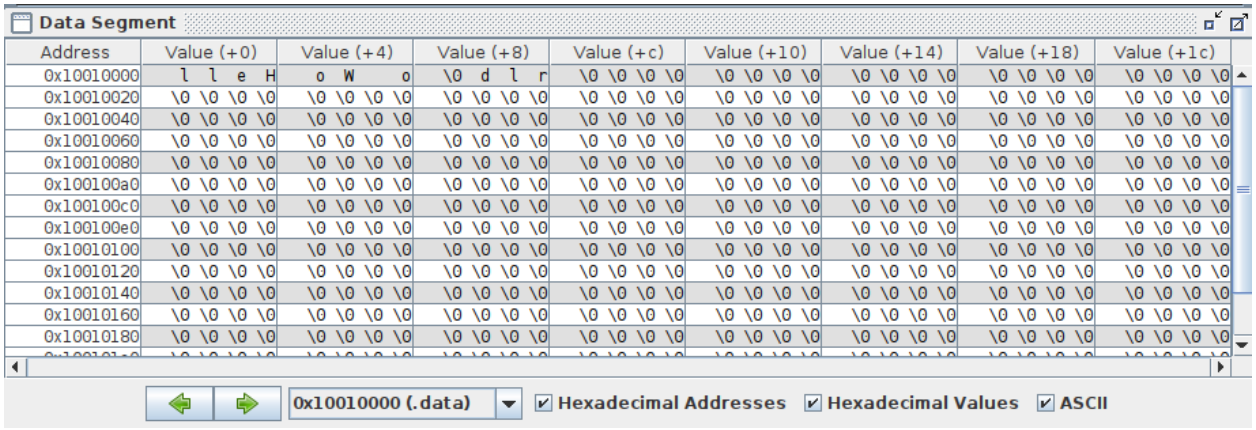
Mã lớp: 122032

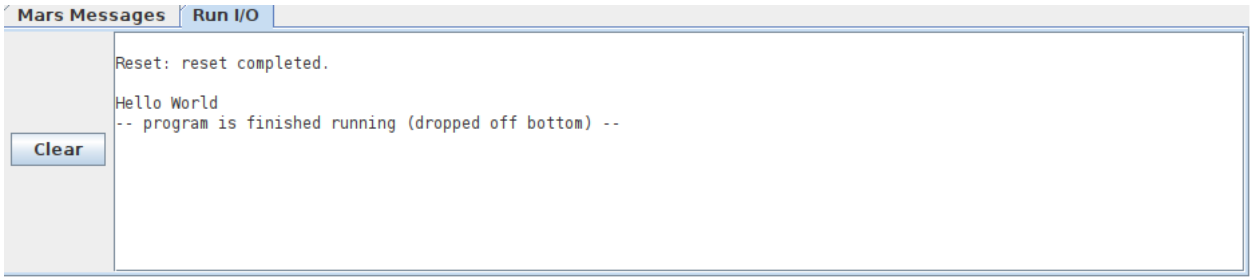
# Báo cáo Lab 05

1. Assignment 1




Xâu "Hello World" có địa chỉ 0x10010000

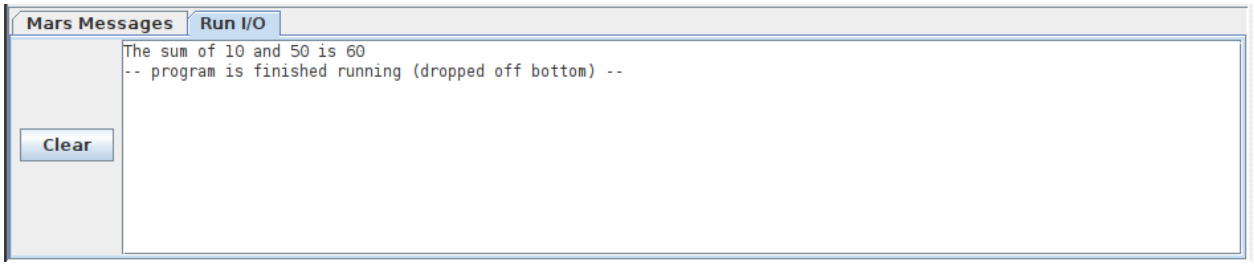
Result:



2. Assignment 2

```
#"The sum of (s0) and (s1) is (result)".
.data
message1: .asciiz "The sum of "
message2: .asciiz " and "
message3: .asciiz " is "

.text
        li $s0,10
        li $sl,50

#print message1:
        li $v0,4
        la, $a0, message1
        syscall

#print s0:
        li $v0,1
        add $a0, $zero, $s0
        syscall

#print mess2:
        li $v0,4
        la $a0,message2
        syscall

#print s1:
        li $v0,1
        add $a0, $zero, $sl
        syscall

#print mess3:
        li $v0,4
        la $a0,message3
        syscall

#print result:
        li $v0,1
        add $a0, $s0, $sl
        syscall
```

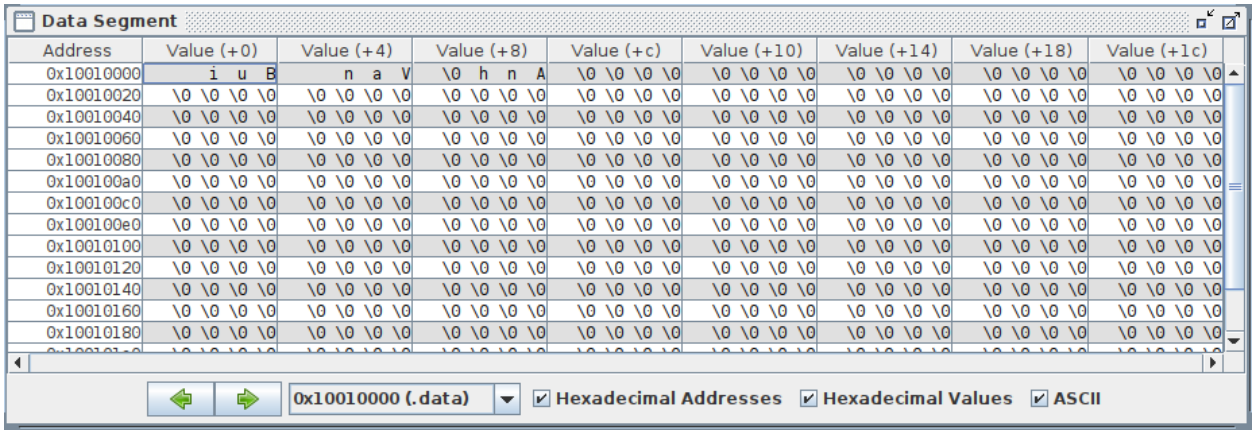
Result:



3. Assignment 3

```
#Laboratory Exercise 5, Sample Code 2
.data
x: .space 1000          # destination string x, empty
y: .asciiz "Bui Van Anh"        # source string y
.text

strcpy:
        la $a0,x
        la $a1,y
        add $s0,$zero,$zero #s0 = i=0
L1:
        add $t1,$s0,$a1 #t1 = s0 + a1 = i + y[0]
                        # = address of y[i]
        lb $t2,0($t1)   #t2 = value at t1 = y[i]
        add $t3,$s0,$a0 #t3 = s0 + a0 = i + x[0]
                        # = address of x[i]
        sb $t2,0($t3)   #x[i]= t2 = y[i]
        beq $t2,$zero,end_of_strcpy #if y[i]==0, exit
        nop
        addi $s0,$s0,1 #s0=s0 + 1 <-> i=i+1
        j L1 #next character
        nop
end_of_strcpy:
```

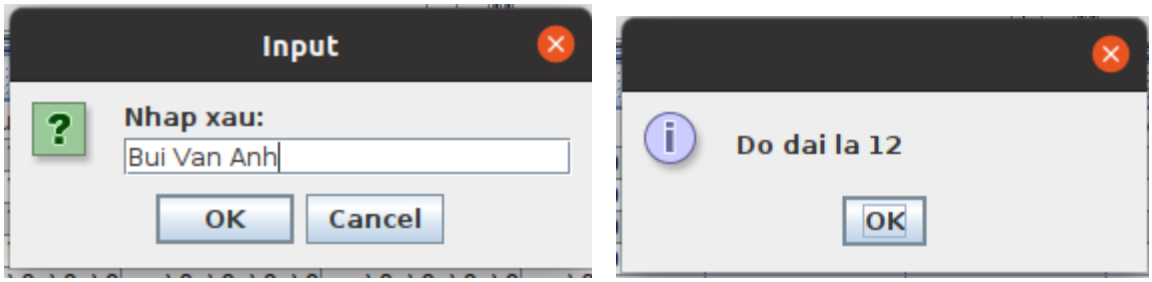
Result:



4. Assignment 4

```
.data
string: .space 50
Message1: .asciiz "Nhap xau:"
Message2: .asciiz "Do dai la "
.text
main:
get_string: #TODO
            li $v0, 54
            la $a0, Message1
            la $a1, string
            la $a2, 100
            syscall

get_length:  la $a0, string        # a0 = Address(string[0])
                                   #xor $v0, $zero, $zero # v0 = length = 0
             xor $t0, $zero, $zero # t0 = i = 0
check_char:  add $t1, $a0, $t0     # t1 = a0 + t0
                                   #= Address(string[0]+i)
             lb $t2, 0($t1)        # t2 = string[i]
             beq $t2,$zero,end_of_str # Is null char?
             #addi $v0, $v0, 1     # v0=v0+1->length=length+1
             addi $t0, $t0, 1      # t0=t0+1->i = i + 1
             j check_char
end_of_str:
end_of_get_length:
print_length: #TODO
             li $v0,56
             la $a0,Message2
             add $a1,$zero,$t0
             syscall
```

Result:

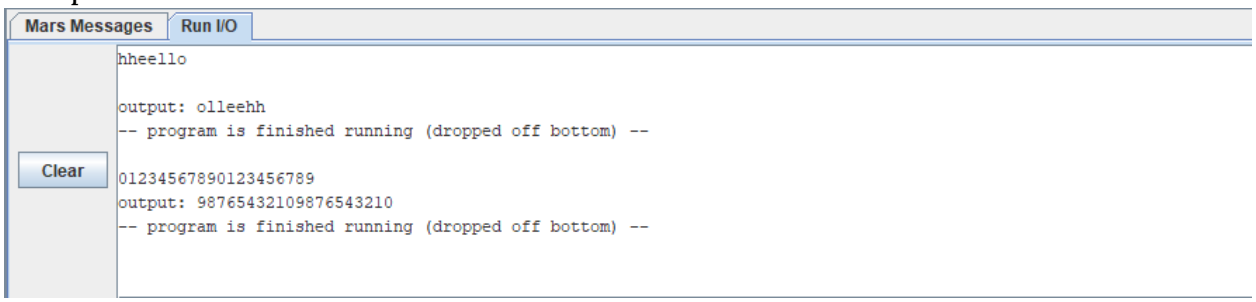


5. Assignment 5

```
.data
mes: .asciiz "\noutput: "
string: .space 50
reverse: .space 50
.text
        la      $s0, string
        xor     $s1, $0, $0
read_char:
        li      $v0, 12
        syscall

        add     $s1, $s0, $t0
        addi    $t0, $t0, 1
        beq     $v0, 10, end_read_char
        sb      $v0, 0($s1)
        beq     $t0, 20, end_read_char
        j       read_char
end_read_char:
get_length:  la $a0, string          # a0 = Address(string[0])
             #xor $v0, $zero, $zero # v0 = length = 0
             xor $t0, $zero, $zero # t0 = i = 0
check_char:          add $t1, $a0, $t0 # t1 = a0 + t0
                          #= Address(string[0]+i)
             lb $t2, 0($t1) # t2 = string[i]
             beq $t2,$zero,end_of_str # Is null char?
             #addi $v0, $v0, 1 # v0=v0+1->length=length+1
             addi $t0, $t0, 1 # t0=t0+1->i = i + 1
             j check_char
end_of_str:
end_of_get_length:

print_reverse:
        la $a0,string
        la $a1,reverse
        subi $s1,$t0,1
        xor $s0,$0,$0
loop:
        add $t1,$s1,$a0
        lb $t2,0($t1)
        add $t3,$s0,$a1
        sb $t2,0($t3)
        beq $s1,$0,exit
        addi $s0,$s0,1
        subi $s1,$s1,1
```

```
        j loop
exit:
li $v0,4
la $a0,mes
syscall
li $v0,4
la $a0,reverse
syscall
```

Kết quả:

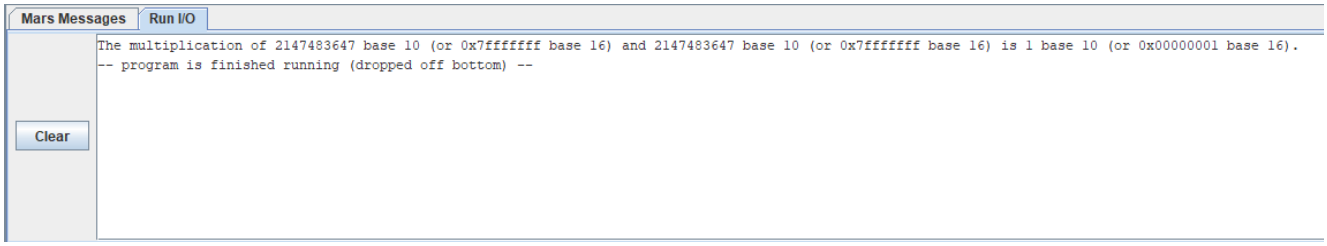



6. Assignment 6

```
# “The multiplication of X base 10 (or X’ base 16) and Y base 10 (or Y’
# base 16) is Z base 10 (or Z’ base 16).”
.data
        mes1: .asciiz "The multiplication of "
        mes2: .asciiz " base 10 (or "
        mes3: .asciiz " base 16) and "
        mes4: .asciiz " base 16) is "
        mes5: .asciiz " base 16)."
.text
        li $s0,0x7fffffff #X=?
        li $s1,0x7fffffff #Y=?
        mul $t0,$s0,$s1

        li $v0,4
        la $a0,mes1
        syscall

#print X
        li $v0,1
        add $a0, $zero, $s0
        syscall

        li $v0,4
        la $a0,mes2
        syscall
```

```
        #print X'
        li $v0,34
        add $a0,$zero,$s0
        syscall

        li $v0,4
        la $a0,mes3
        syscall

#print Y
        li $v0,1
        add $a0, $zero, $s1
        syscall

        li $v0,4
        la $a0,mes2
        syscall

#print Y'
        li $v0,34
        add $a0,$zero,$s1
        syscall

        li $v0,4
        la $a0,mes4
        syscall

#print Z
        li $v0,1
        add $a0, $zero, $t0
        syscall

        li $v0,4
        la $a0,mes2
        syscall

#print Z'
        li $v0,34
        add $a0,$zero,$t0
        syscall

        li $v0,4
        la $a0,mes5
        syscall
```

Kết quả:


Mars Messages
Run I/O
Clear
The multiplication of 2147483647 base 10 (or 0x7fffffff base 16) and 2147483647 base 10 (or 0x7fffffff base 16) is 1 base 10 (or 0x00000001 base 16).
-- program is finished running (dropped off bottom) --