COMPUTER ARCHITECT LAB WEEK 5

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1)

```
.data
out_string: .asciiz "\n Please input an integer: \n"
output: .asciiz "result: \n"
.text
input_proccess:
li $v0,4
la $a0, out_string
syscall
li $v0,5
syscall
move $t0,$v0
add $t1,$t1,$t0
#blt $t0,$zero,print_out
bgtz $t0,input_proccess
#print_out:
li $v0,4
la $a0, output
syscall
li $v0,1
```

```
add $a0,$t1,$zero
syscall
```

2)

```
.data
out_string: .asciiz "\n Please input an integer: \n"
output: .asciiz "result: \n"
out_string2: .asciiz "\n Please input an another integer: \n"
.text
li $v0,4
la $a0, out_string
syscall
input_proccess:
addi $t1,$zero,10
addi $t2,$zero,5
li $v0,5
syscall
move $t0,$v0
add $t3,$t1,$t2
sub $t4,$t1,$t2
sub $t5,$t2,$t1
beq $t0,$zero,end_program0
beq $t0,1,end_program1
beq $t0,2,end_program2
```

```
li $v0,4
la $a0, out_string2
syscall
j input_proccess
end_program0:
li $v0,4
la $a0, output
syscall
li $v0,1
add $a0, $t3, $zero
syscall
li $v0,10
syscall
end_program1:
li $v0,4
la $a0, output
syscall
li $v0,1
add $a0, $t4, $zero
syscall
li $v0,10
syscall
end_program2:
li $v0,4
```

```
la $a0, output
syscall
li $v0,1
add $a0, $t5, $zero
syscall
li $v0,10
syscall
```

3)

```
.data
out_string: .asciiz "\n Please input an integer: \n"
out_string2: .asciiz "\n position of the integer: \n"
out_string3: .asciiz "\n The integer did not exist \n"
list: .word 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
size: .word 10
.text
li $v0,4
la $a0, out_string
syscall
input_proccess:
li $v0,5
syscall
move $t0,$v0
lw $t3, size
```

```
la $t1, list # get array address
li $t2, 0 # set loop counter
cal_loop:
beq $t2,$t3,exit
lw $t5,($t1)
beq $t5,$t0,print_pos
addi $t2, $t2, 1 # advance loop counter
addi $t1, $t1, 4 # advance array pointer
j cal_loop

print_pos:
add $t4,$zero,$zero
addi $t4,$t4,1
li $v0,4
la $a0, out_string2
syscall
add $a0,$t2,$zero
li $v0,1
syscall
addi $t2, $t2, 1 # advance loop counter
addi $t1, $t1, 4
j cal_loop
print_loop_end:
li $v0,4
```

```
la $a0, out_string3
syscall
li $v0,10
syscall
exit:
beqz $t4,print_loop_end
li $v0,10
syscall
```