

## LAB 7

### TASK #01:

.data

array: .space 40

newline: .ascii "\n"

.text

main:

li \$t0, 0

la \$t1, array

li \$t2, 10

li \$t3, 2

init\_loop:

sw \$t3, 0(\$t1)

addi \$t0, \$t0, 1

addi \$t1, \$t1, 4

addi \$t3, \$t3, 2

blt \$t0, \$t2, init\_loop

li \$t0, 0

la \$t1, array

li \$t2, 10

print\_loop:

li \$v0, 1

lw \$a0, 0(\$t1)

syscall

li \$v0, 4

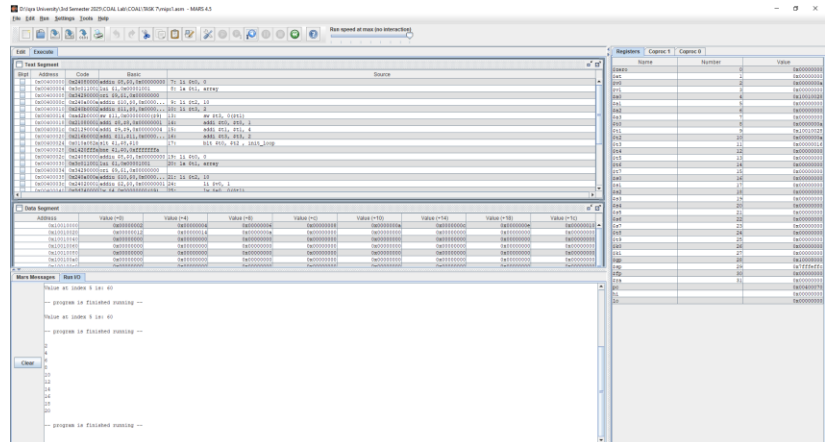
la \$a0, newline

syscall

addi \$t1, \$t1, 4

addi \$t0, \$t0, 1

blt \$t0, \$t2, print\_loop



## LAB 7

```
li $v0, 10
```

```
syscall
```

### TASK #02:

```
.data
```

```
array: .word 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 # 10-element array
```

```
msg: .ascii "Value at index 5 is: "
```

```
newline: .ascii "\n"
```

```
.text
```

```
.globl main
```

```
main:
```

```
li $v0, 4 # syscall 4 = print string
```

```
la $a0, msg
```

```
syscall
```

```
la $t0, array # Load base address of array
```

```
li $t1, 5 # Index = 5
```

```
li $t2, 4 # Word size = 4 bytes
```

```
mul $t1, $t1, $t2 # Offset = index * 4
```

```
add $t3, $t0, $t1 # Address of array[5]
```

```
lw $a0, 0($t3) # Load value at array[5]
```

```
li $v0, 1 # syscall 1 = print integer
```

```
syscall
```

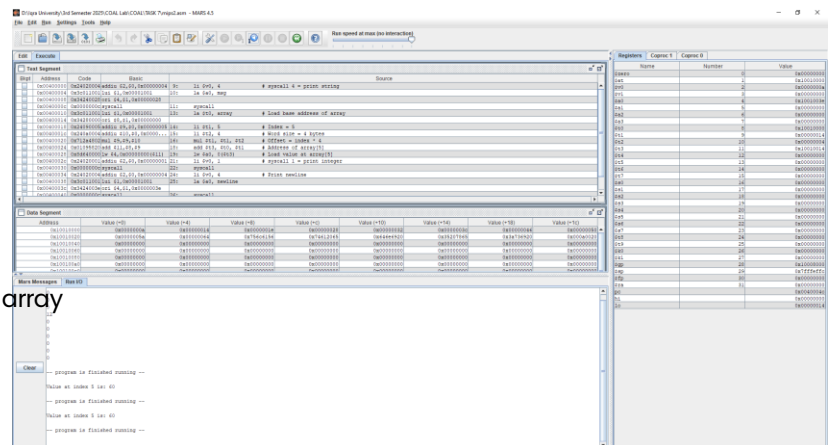
```
li $v0, 4 # Print newline
```

```
la $a0, newline
```

```
syscall
```

```
li $v0, 10 # Exit
```

```
syscall
```



### TASK #03:

```
.data
```

```
array: .space 40 # Reserve space for 10 integers (10 * 4 bytes)
```

```
newline: .ascii "\n" # Corrected spelling of "newlinw"
```

```
prompt1: .ascii "Enter number here: "
```

```
.text
```

Date : 16/5/2025

## LAB 7

.globl main

main:

la \$t0, array

# \$t0 = base address of array

# Prompt for input

li \$v0, 4

la \$a0, promptl

syscall

# Read integer

li \$v0, 5

syscall

move \$t1, \$v0

# Corrected: get user input from \$v0, not \$a0

# Store input at index 3

li \$t2, 4

li \$t3, 3

mul \$t3, \$t3, \$t2

# Offset = 3 \* 4 = 12

add \$t4, \$t0, \$t3

# \$t4 = address of array[3]

sw \$t1, 0(\$t4)

# Store user input at array[3]

# Print all 10 array elements

la \$t0, array

# Reset \$t0 to start of array

li \$t2, 0

# Loop counter

li \$t3, 10

# Loop limit

print\_loop:

lw \$a0, 0(\$t0)

# Load array[i]

li \$v0, 1

syscall

# Print integer

li \$v0, 4

la \$a0, newline

syscall

# Print newline

addi \$t2, \$t2, 1

addi \$t0, \$t0, 4

# Move to next element

blt \$t2, \$t3, print\_loop

# Loop if i < 10

li \$v0, 10

syscall

# Exit

