



RIPHAH
INTERNATIONAL UNIVERSITY

COAL (Lab)

Task 1

Name: Abubakar Awan

SAP ID: 54257

Semester: 3rd

Q1: Multiply numbers using variables and store the result in variables.

```
.model small
```

```
.stack 100h
```

```
.data
```

```
var1 db 2 ; variable 1 with value 2
```

```
var2 db 2 ; variable 2 with value 2
```

```
var3 db 3 ; variable 3 with value 3
```

```
result dw ? ; Define a word (16-bit) to store the multiplication  
result
```

```
.code
```

```
main proc
```

```
mov ax, @data
```

```
mov ds, ax
```

```
; Load var1 into AX
```

```
mov al, var1
```

; Multiply var1 by var2

mov bl, var2

mul bl

; Now multiply the result by var3

mov bl, var3

mul bl

; Store the result in the result variable

mov result, ax

; Exit program syntax

mov ah, 4Ch

int 21h

main endp

end main

Q2: Write assembly code to swap two numbers using variables. Screenshot of the variables before and after swap should be attached.

```
.model small
.stack 100h
.data
    num1 db 5 ;first number
    num2 db 8 ;second number

.code
main proc

    mov ax, @data
    mov ds, ax

    ; Load num1 into AL register
    mov al, num1

    ; Load num2 into BL register
```

```
mov bl, num2
```

```
;swapping values
```

```
mov cl, bl
```

```
mov bl, al
```

```
mov al, cl
```

```
; Store the swapped values back into variables
```

```
mov num1, al
```

```
mov num2, bl
```

```
; Exit program
```

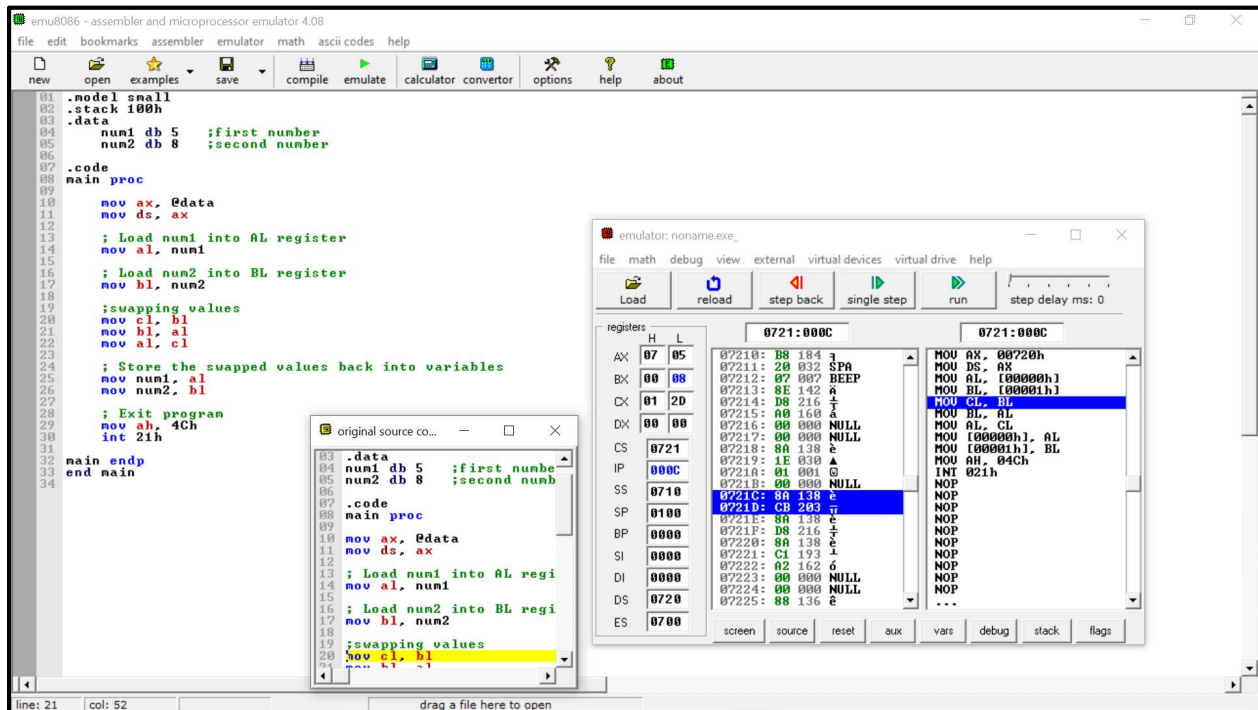
```
mov ah, 4Ch
```

```
int 21h
```

```
main endp
```

```
end main
```

Before Swapping



After Swapping

