111_HW1-Arithmetic

資電院學士班二年級

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Code and execution result
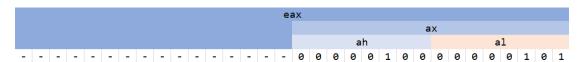
```
1    include Irvine32.inc
2    .data
3    Digit0 BYTE 4h
4    Digit1 BYTE 5h
5    Digit2 BYTE 1h
6    Digit3 BYTE 7h
7    MyId DWORD ?
8
9    .code
10   main PROC
11       MOV ah, Digit0
12       MOV al, Digit1
13       SHL eax, 16
14       MOV ah, Digit2
15       MOV al, Digit3
16       MOV MyId, eax
17
18       exit
19   main ENDP
20   END main
```
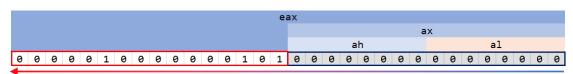
11	ah	0x04 '\x4'	ah = Digit0
	al	0x50 'P'	
	eax	0x00d30450	
	MyId	0x00000000	

12	ah	0x04 '\x4'	al = Digit1
	al	0x05 '\x5'	
	eax	0x00d30405	
	MyId	0x00000000	

13	ah	0x00 '\0'	Shift left16 bit on eax (eax *= 2^16)
	al	0x00 '\0'	
	eax	0x04050000	
	MyId	0x00000000	

14	ah	0x01 '\x1'	ah = Digit2
	al	0x00 '\0'	
	eax	0x04050100	
	MyId	0x00000000	

15	ah	0x01 '\x1'	ah = Digit3
	al	0x07 '\a'	
	eax	0x04050107	
	MyId	0x00000000	

16	ah	0x01 '\x1'	MyId = eax
	al	0x07 '\a'	
	eax	0x04050107	
	MyId	0x04050107	

Register change

Line 11

eax | ax | ah | al

- - - - - - - - - - - - - - - - 0 0 0 0 0 1 0 0 - - - - - - - -

Line 12

eax | ax | ah | al

- - - - - - - - - - - - - - - - 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1

Line 13

eax | ax | ah | al

0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Line 14

eax | ax | ah | al

0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0

Line 15

eax | ax | ah | al

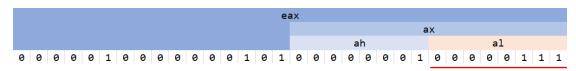0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 1 1 1

According to this work, we can practice the use of SHL.
And understand affect between eax, ah, and al