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Assignment 2

1) write a program to add two 8 bit numbers.

```
.model small
```

```
.data
```

```
a db 20h
```

```
b db 10h
```

```
c db ?
```

```
.code
```

```
main proc near
```

```
    mov ax,@data
```

```
    mov ds,ax
```

```
    mov al,a
```

```
    mov ah,b
```

```
    add al,ah
```

```
    mov c,al
```

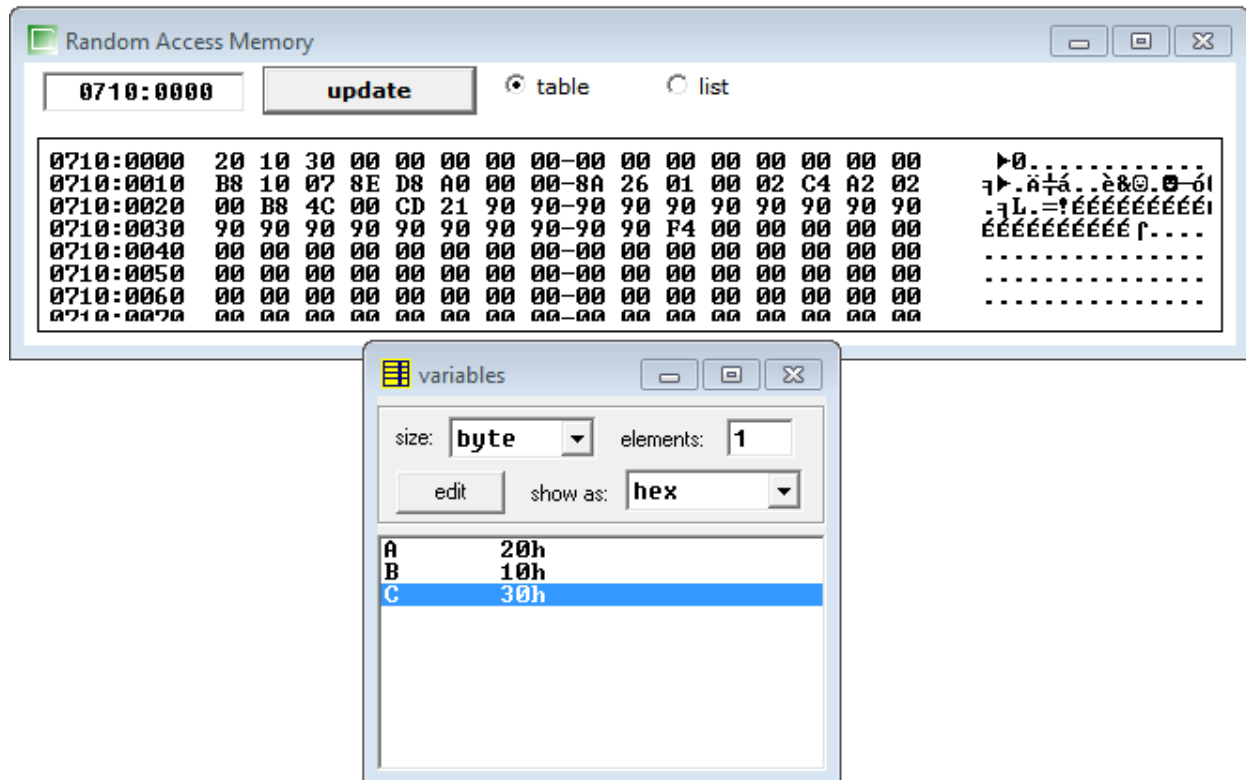
```
    mov ax,4ch
```

```
    int 21h
```

```
endp main
```

```
end main
```





2) Write program to add two 16 bit numbers.

.model small

.data

a dw 2010h

b dw 3000h

c dw ?

.code

main proc near

mov ax,@data

mov ds,ax

mov ax,a

mov bx,b

```

add ax,bx

mov c,ax

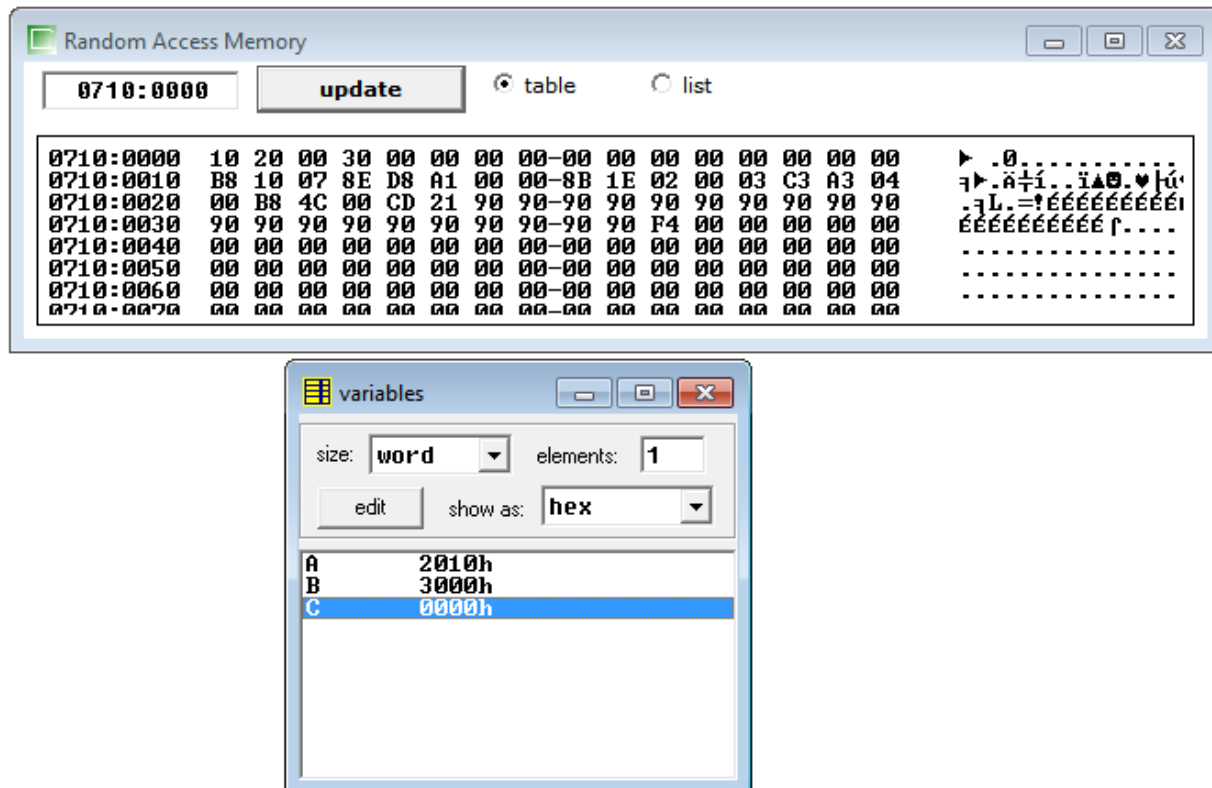
mov ax,4ch

int 21h

endp main

end main

```



3) Write program to subtract two 8 bit numbers.

```

.model small

.data

a db 75h

b db 30h

c db ?

```

```

.code
main proc near
    mov ax,@data
    mov ds,ax
    mov al,a
    mov ah,b
    sub al,ah
    mov c,al
    mov ax,4ch
    int 21h
endp main
end main

```

Random Access Memory

0710:0000 update table list

0710:0000	75	30	45	00	00	00	00	00-00	00	00	00	00	00	00	00	00	u0E.....
0710:0010	B8	10	07	8E	D8	A0	00	00-8A	26	01	00	2A	C4	A2	02	00	q┐.ā+ā. .è&@.*-ó!
0710:0020	00	B8	4C	00	CD	21	90	90-90	90	90	90	90	90	90	90	90	.qL.=!éééééééééé!
0710:0030	90	90	90	90	90	90	90	90-90	90	F4	00	00	00	00	00	00	éééééééééééééééé!
0710:0040	00	00	00	00	00	00	00	00-00	00	00	00	00	00	00	00	00
0710:0050	00	00	00	00	00	00	00	00-00	00	00	00	00	00	00	00	00
0710:0060	00	00	00	00	00	00	00	00-00	00	00	00	00	00	00	00	00
0710:0070	00	00	00	00	00	00	00	00-00	00	00	00	00	00	00	00	00

variables

size: byte elements: 1

edit show as: hex

A	75h
B	30h
C	45h

4) Write a program to subtract two 16 bit numbers.

```
.model small
```

```
.data
```

```
a dw 5427h
```

```
b dw 2536h
```

```
c dw ?
```

```
.code
```

```
main proc near
```

```
    mov ax,@data
```

```
    mov ds,ax
```

```
    mov ax,a
```

```
    mov bx,b
```

```
    add ax,ax
```

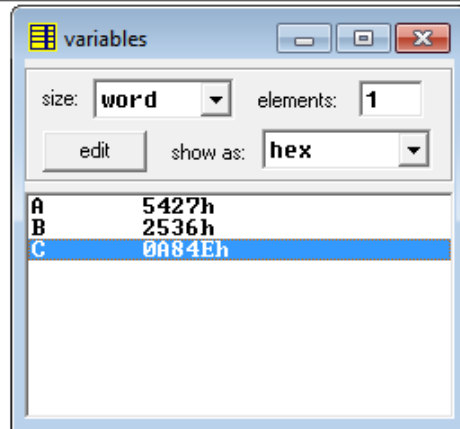
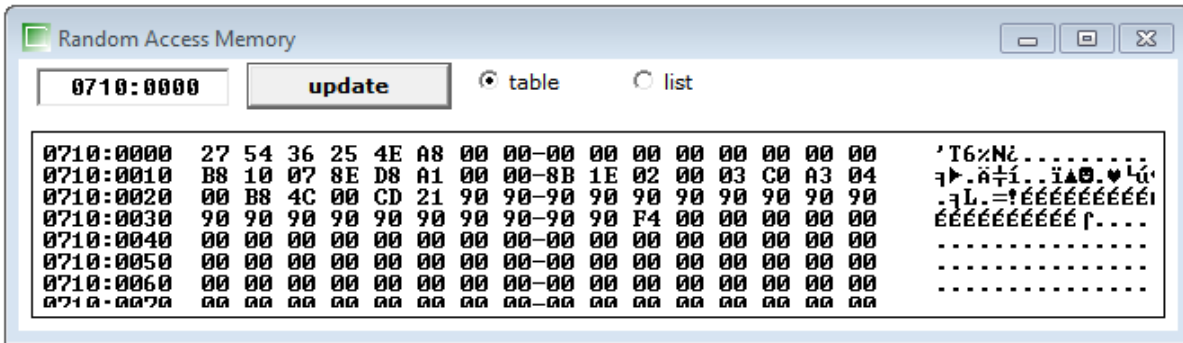
```
    mov c,ax
```

```
    mov ax,4ch
```

```
    int 21h
```

```
endp main
```

```
end main
```



5) Write a program to set following flags. 1 CF 2AF 3 ZF 4 SF 5 OF 6PF

.model small

.data

a db 100

b db 50

c db 10h

d db 2bh

e db 39h

f db 30h

g db 40h

.code

main proc near

mov ax,@data

mov ds,ax

mov al,a

mov ah,b

add al,ah

mov al,c

mov ah,c

sub al,ah

mov al,d

mov ah,e

add al,ah

mov al,f

mov ah,g

sub al,ah

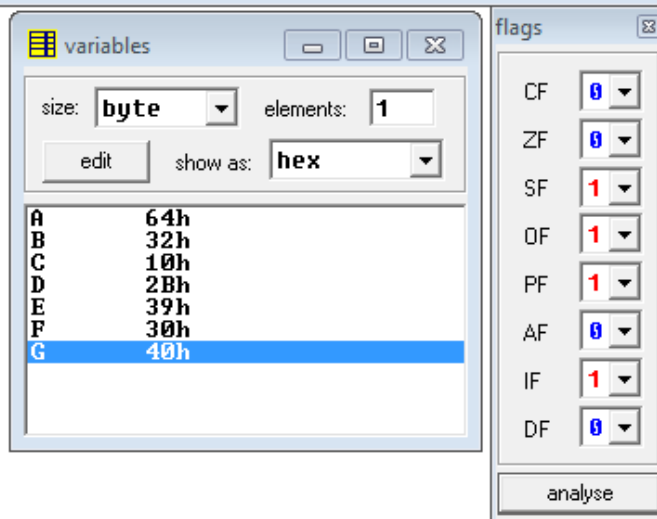
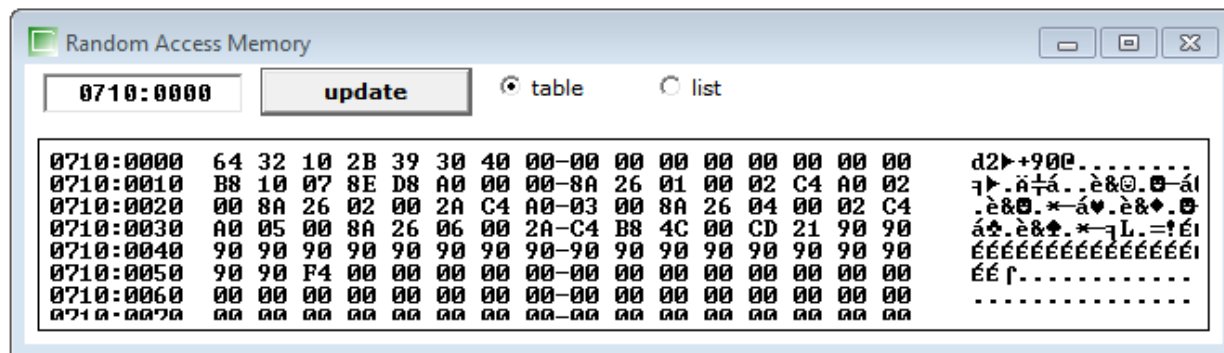
mov ax,4ch

int 21h

endp main

end main





Random Access Memory

0710:0000

update

☒ table

☐ list

0710:0000	64	32	10	2B	39	30	40	00-00	00	00	00	00	00	00	00	d2▶+900.....
0710:0010	B8	10	07	8E	D8	A0	00	00-8A	26	01	00	02	C4	A0	02	q▶.ā▶ā...è&@.0-ā
0710:0020	00	8A	26	02	00	2A	C4	A0-03	00	8A	26	04	00	02	C4	.è&@.*-ā♥.è&♦.0
0710:0030	A0	05	00	8A	26	06	00	2A-C4	B8	4C	00	CD	21	90	90	ā.è&♦.*-qL.=!é
0710:0040	90	90	90	90	90	90	90	00-90	90	90	90	90	90	90	90	éééééééééééééééé
0710:0050	90	90	F4	00	00	00	00	00-00	00	00	00	00	00	00	00	éééééééééééééééé
0710:0060	00	00	00	00	00	00	00	00-00	00	00	00	00	00	00	00
0710:0070	00	00	00	00	00	00	00	00-00	00	00	00	00	00	00	00

variables

size: byte

elements: 1

edit

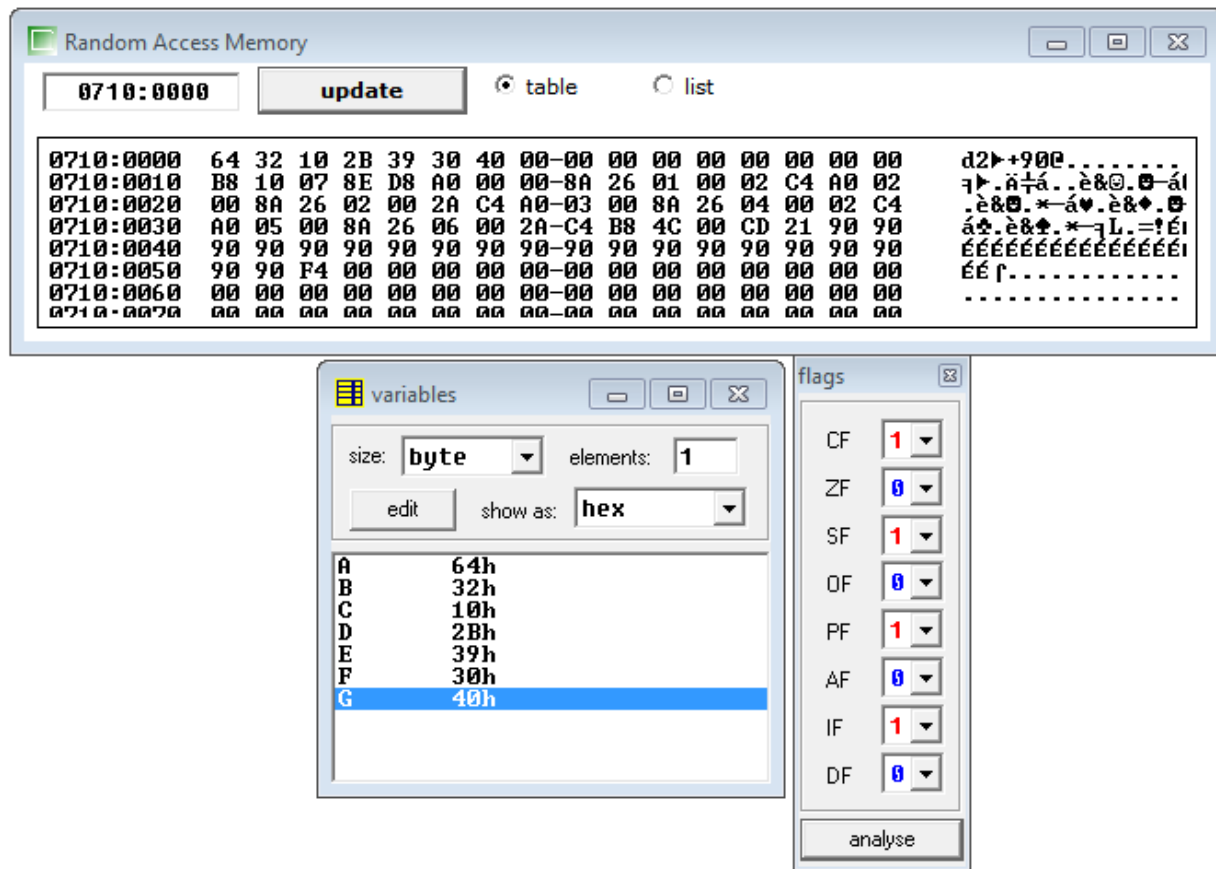
show as: hex

A	64h
B	32h
C	10h
D	2Bh
E	39h
F	30h
G	40h

flags

CF	0
ZF	0
SF	0
OF	0
PF	0
AF	1
IF	1
DF	0

analyse



6) Write a program to Mul two 8 bit numbers.

.model small

.data

a db 50

b db 60

c dw ?

.code

main proc near

```

mov ax,@data

mov ds,ax

mov al,a

mov bl,b

mul bl

mov c,ax

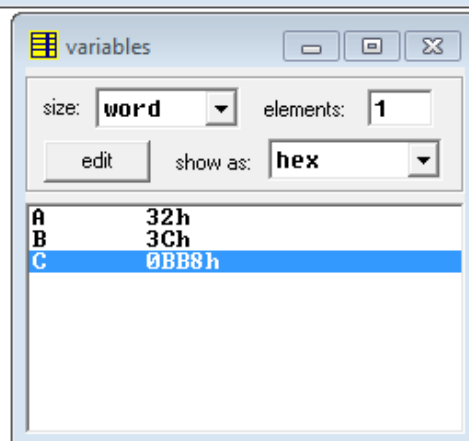
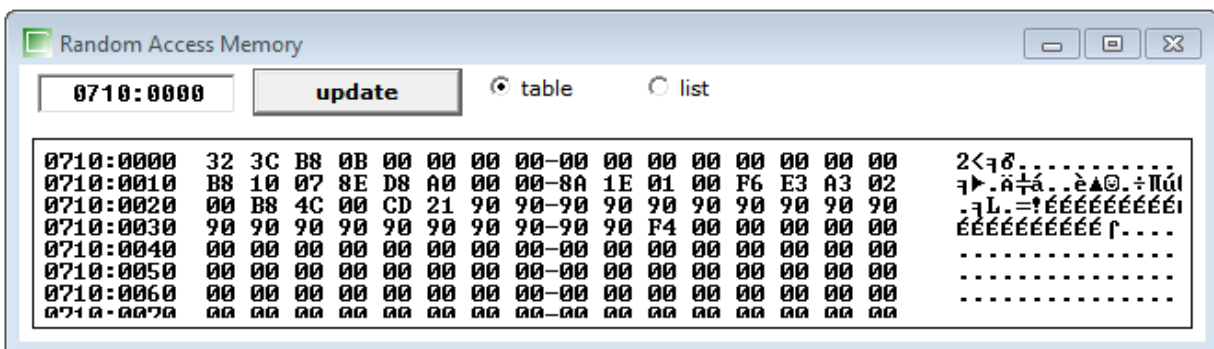
mov ax,4ch

int 21h

endp main

end main

```



7) Write a program to Mul two 16 bit numbers

```
.model small
```

```
.data
```

a dw 3000

b dw 3000

c dw ?

.code

main proc near

mov ax,@data

mov ds,ax

mov ax,a

mov bx,b

mul bx

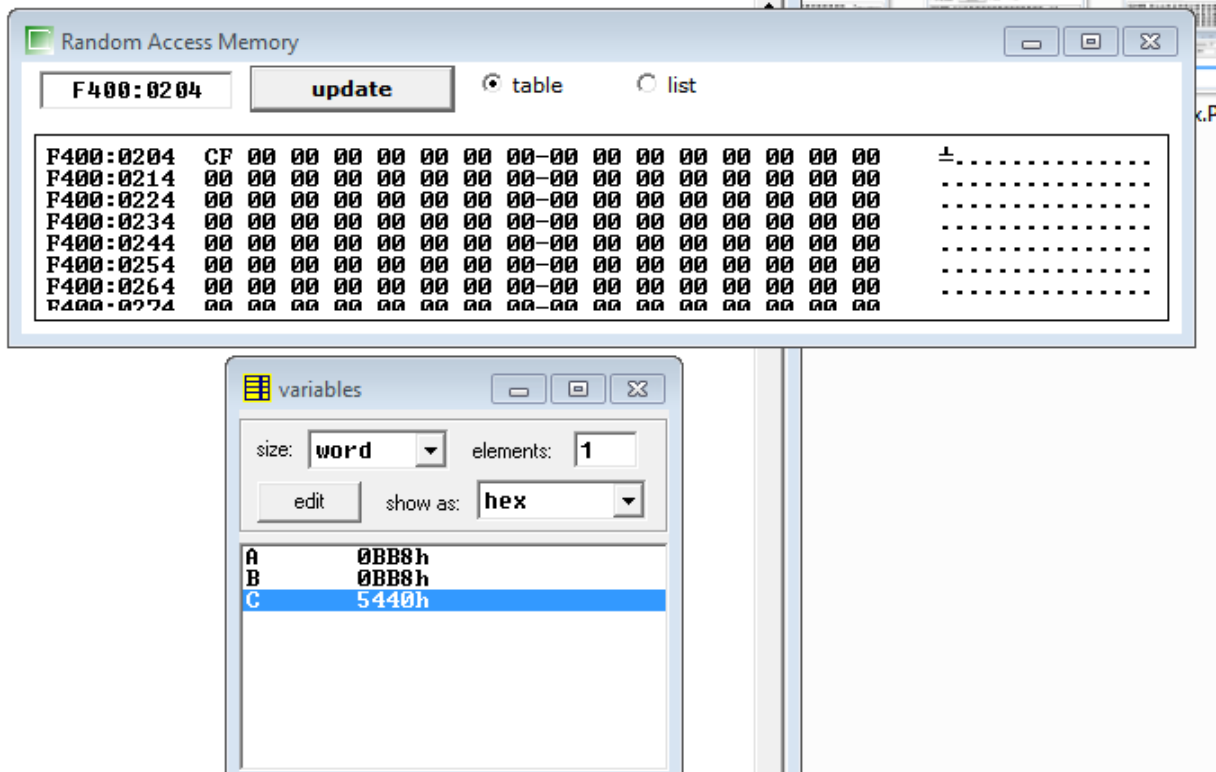
mov c,ax

mov ax,4ch

int 21h

endp main

end main



8) Write a program to divide 16 bit number by 8 bit number.

.model small

.data

a dw 1010h

b db 11h

c dw ?

.code

main proc near

mov ax,@data

mov ds,ax

mov ax,a

mov bl,b

div bl

```

mov c,ax

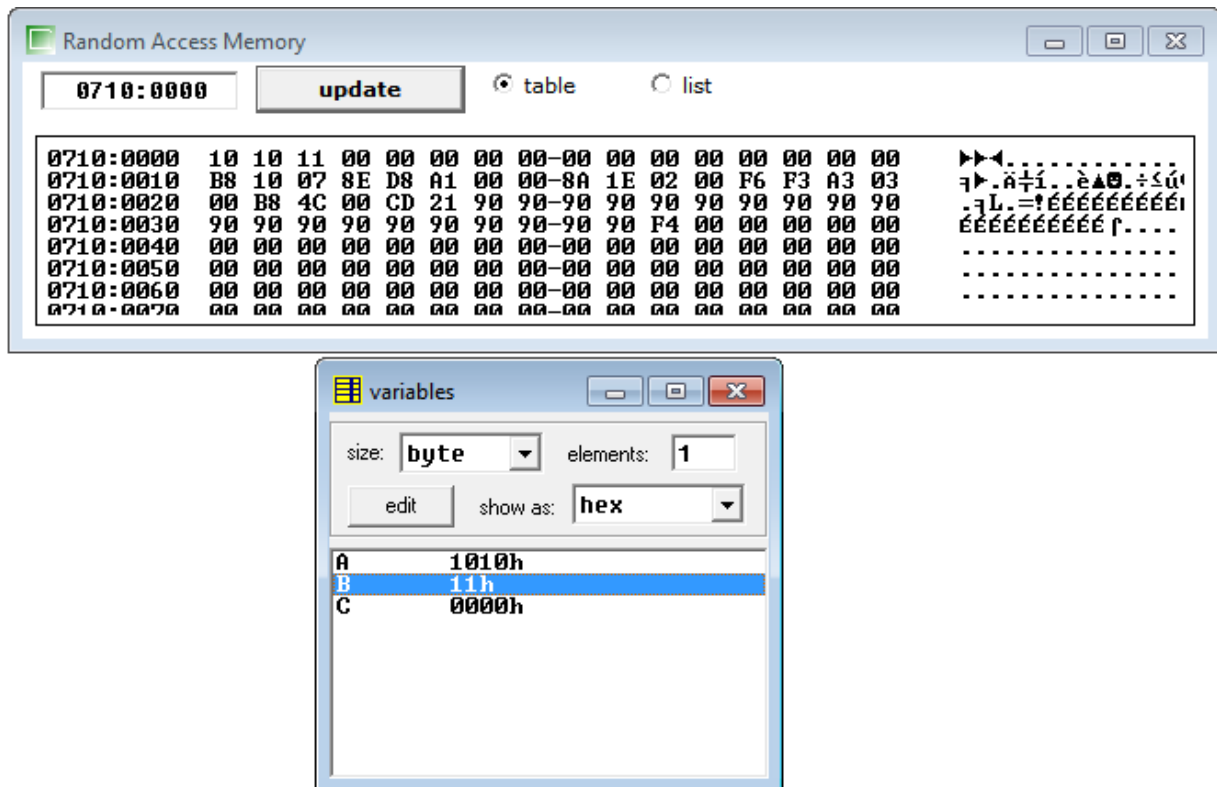
mov ax,4ch

int 21h

endp main

end main

```



9) Write a program to interchange value of two variables.

```
.model small
```

```
.data
```

```
a db 50h
```

```
b db 60h
```

```
.code
```

```
main proc near
```

```

mov ax,@data

mov ds,ax

mov al,a

mov ah,b

mov a,ah

mov b,al

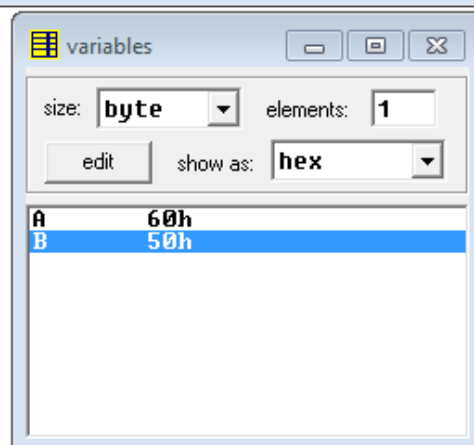
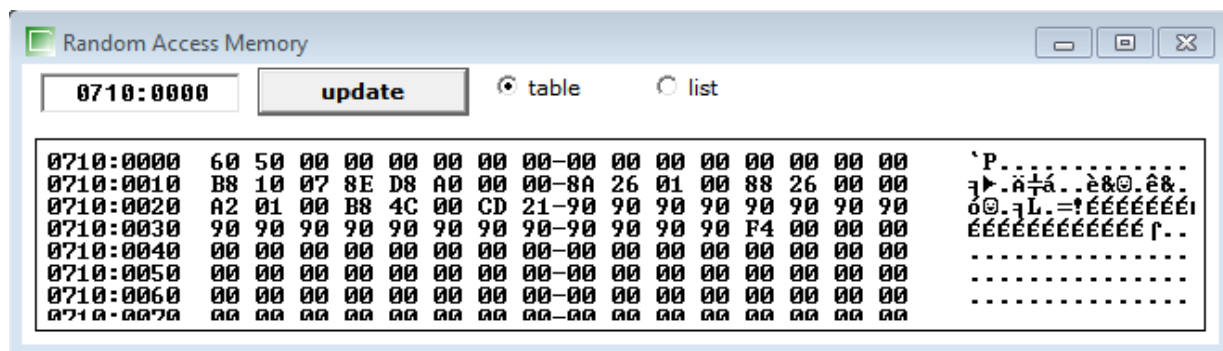
mov ax,4ch

int 21h

endp main

end main

```



10) Write a program to find maximum value of array.

```
.model small
```


.data

a db 11,33,22,10,44

n db 4

b db 0

max db ?

.code

main proc near

mov ax,@data

mov ds,ax

mov bh,b

lea si,a

mov bl,[si]

flagthree:

inc si

mov al,[si]

cmp bl,al

ja flagone

mov bl,al

flagone:

mov ah,n

cmp ah,bh

je flagtwo

dec n

jmp flagthree

```

flagtwo:

mov max,bl

mov ax,4ch

int 21h

endp main

end main

```

