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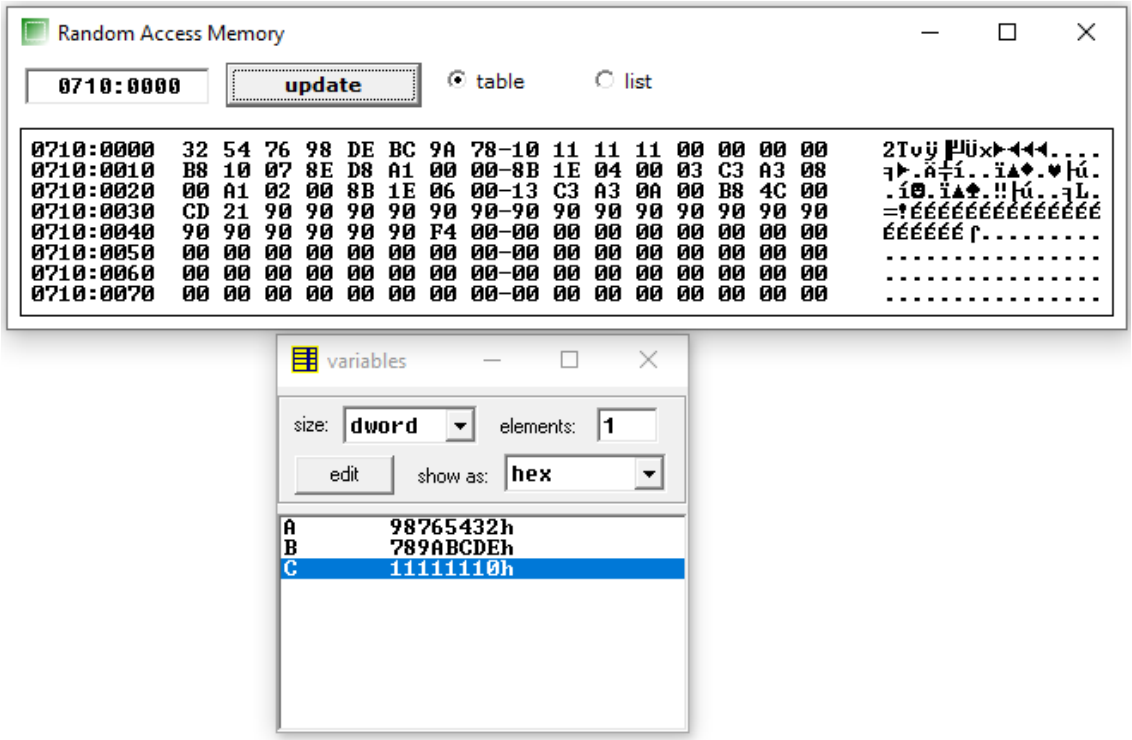
# Practical 3

1) Write a program to perform addition of two 32-bit numbers

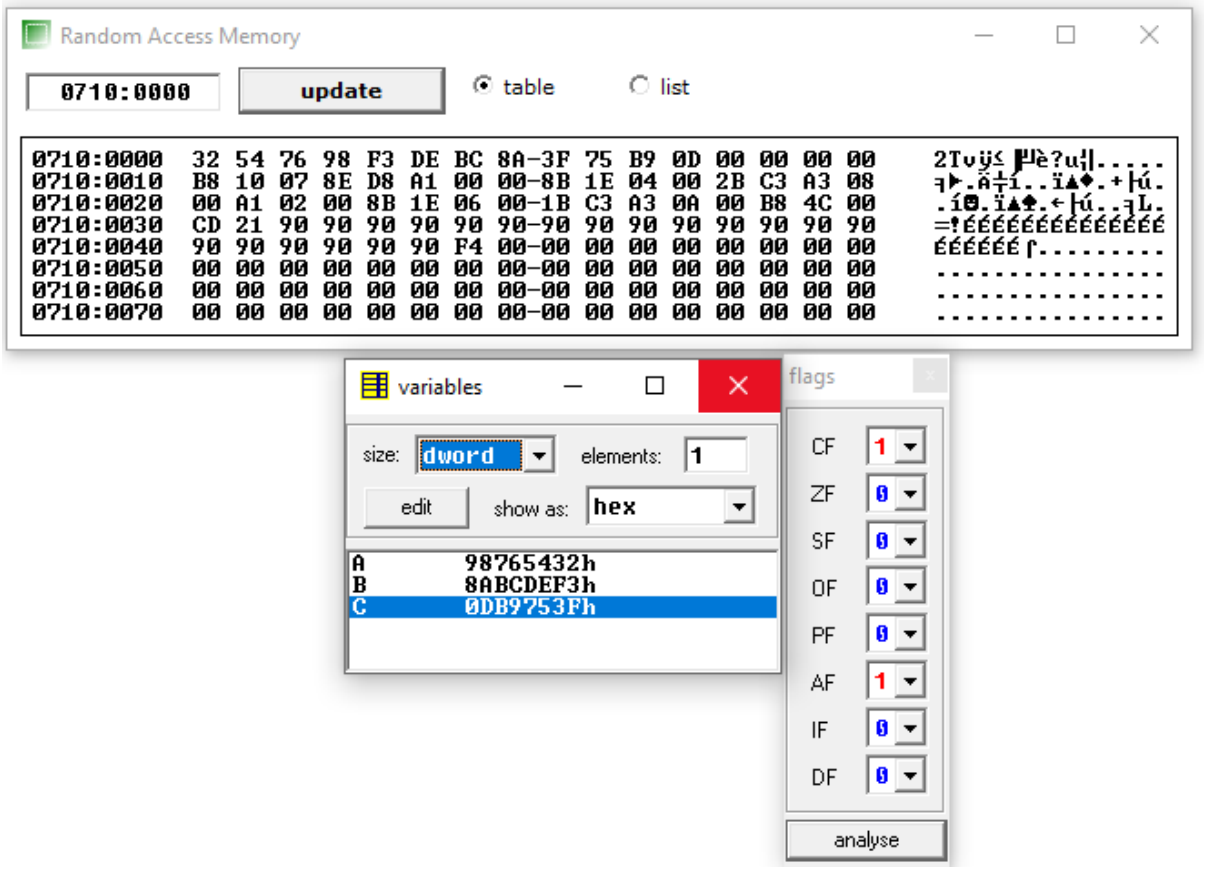
```
.model small
.data
a dd 98765432h
b dd 789ABCDEh
c dd ?

.code
main proc near
 mov ax,@data
 mov ds,ax

 mov ax,a
 mov bx,b
 add ax,bx
 mov c,ax

 mov ax,a+2
 mov bx,b+2
 adc ax,bx
 mov c+2,ax

 mov ax,04ch
 int 21h
endp
end
```




2) Write a program to perform subtraction of two 32-bit numbers

```
.model small
.data
a dd 98765432h
b dd 8ABCDEF3h
c dd ?

.code
main proc near
 mov ax,@data
 mov ds,ax

 mov ax,a
 mov bx,b
 sub ax,bx
 mov c,ax

 mov ax,a+2
```

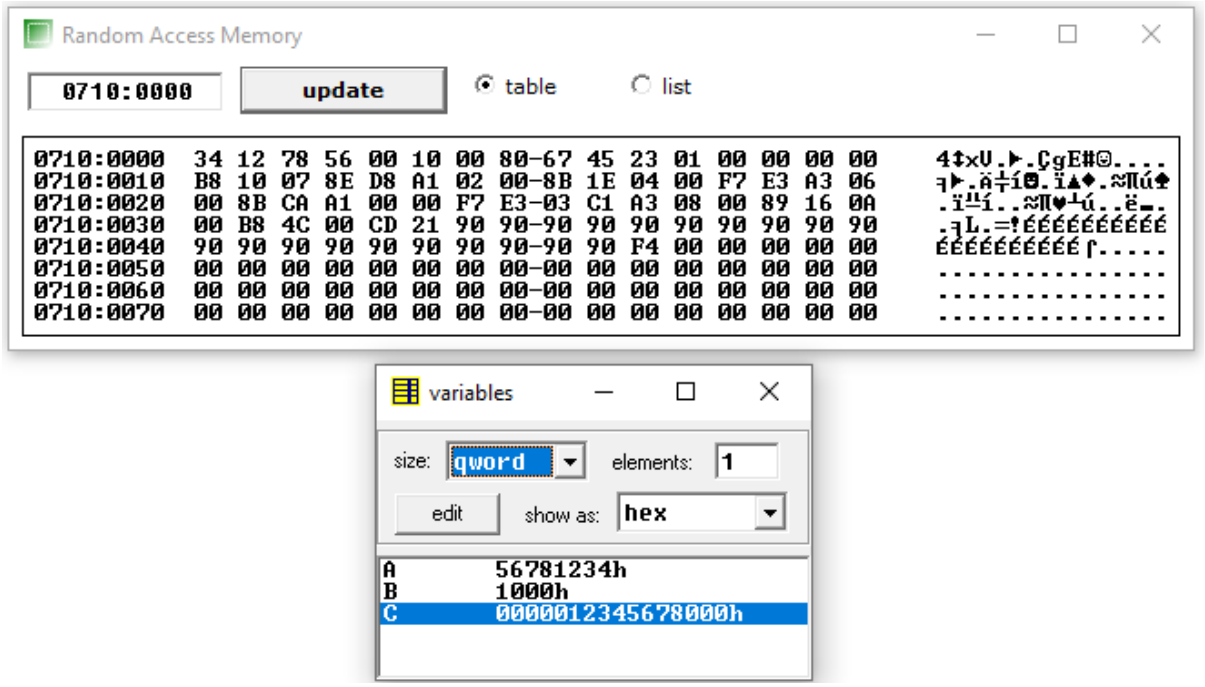
```
mov bx,b+2
sbb ax,bx
mov c+2,ax

mov ax,04ch
int 21h
endp
end
```




3) Write a program to perform multiplication of a 32-bit number by a 16-bit number

```
.model small
.data
a dw 1234h,5678h
b dw 1000h
c dw 03 dup(?)
```

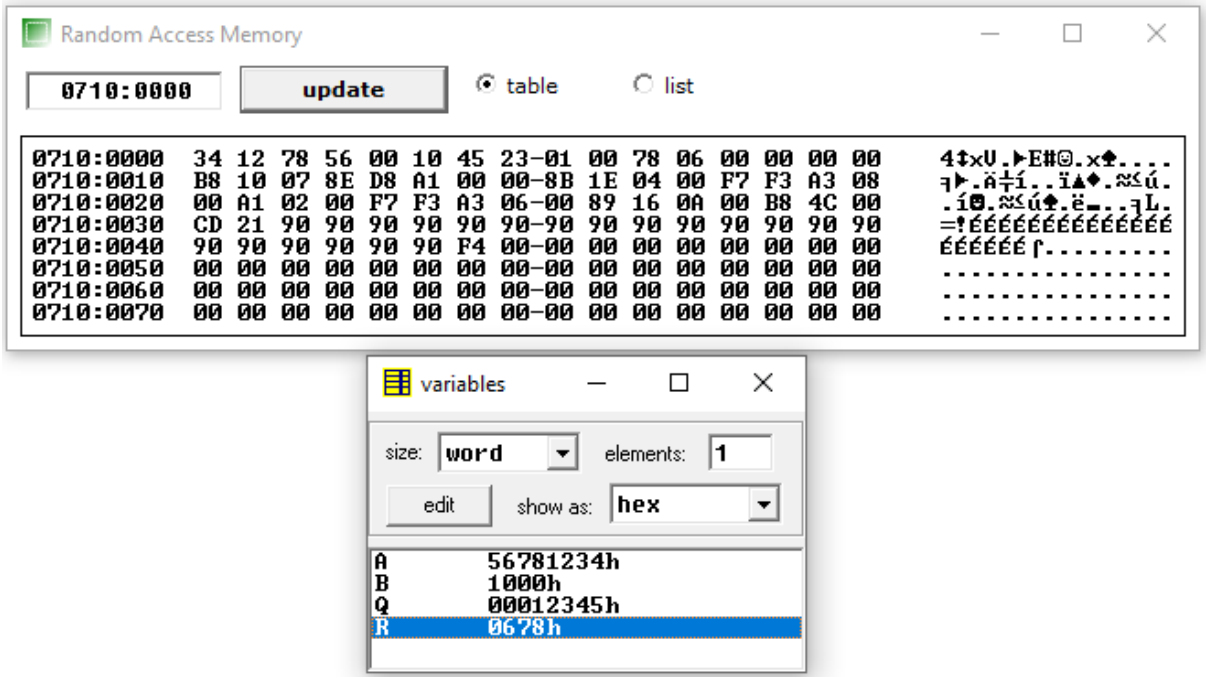
```
.code
main proc near
    mov ax,@data
    mov ds,ax

    mov ax,a+2
    mov bx,b
    mul bx
    mov c,ax
    mov cx,dx

    mov ax,a
    mul bx
    add ax,cx
    mov c+2,ax
    mov c+4,dx

    mov ax,04ch
    int 21h
endp
end
```




4) Write a program to perform division of 32 bit number by 16 bit number

```
.model small
.data
a dw 1234h,5678h
b dw 1000h
q dd ?
r dw ?

.code
main proc near
   mov ax,@data
   mov ds,ax

   mov ax,a
   mov bx,b
   div bx
   mov q+2,ax
```

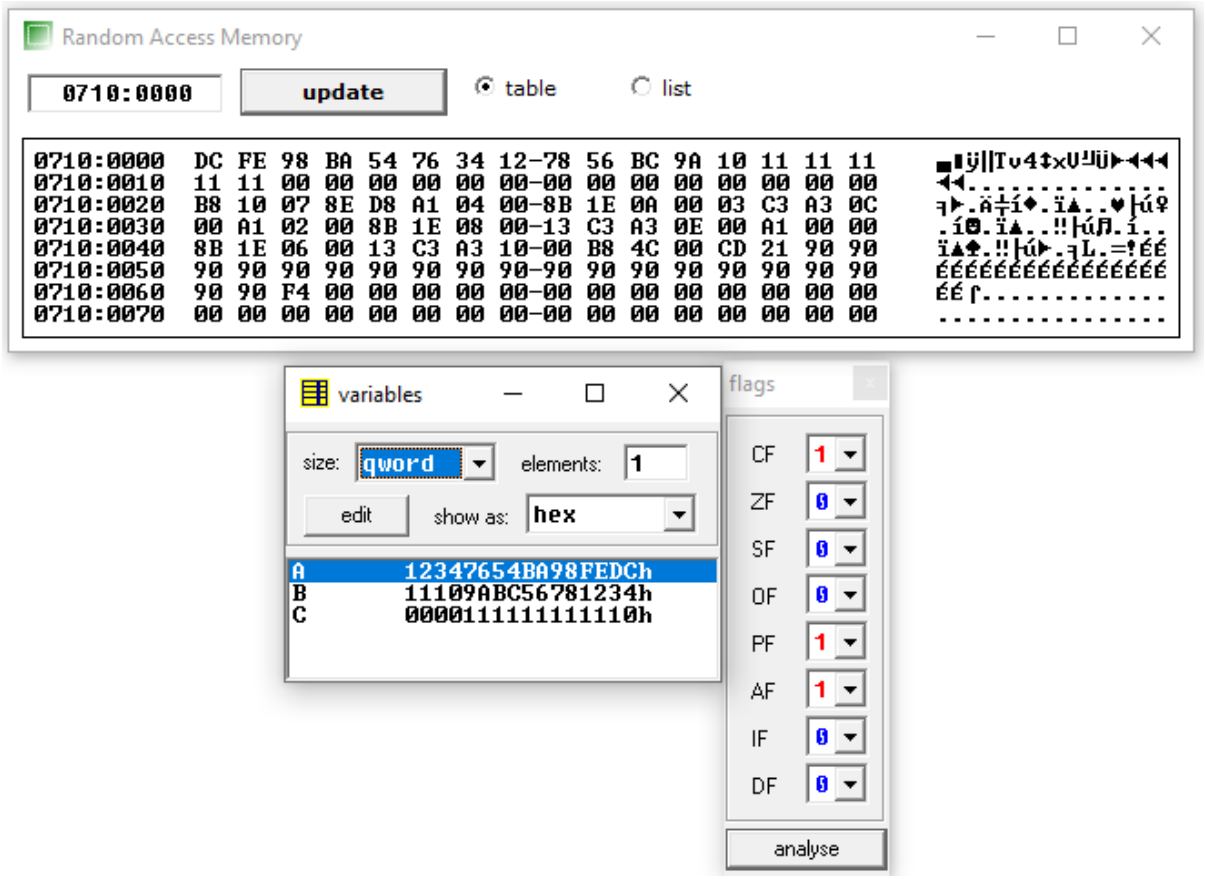
```
    mov ax,a+2
    div bx
    mov q,ax
    mov r,dx

    mov ax,04ch
    int 21h
endp
end
```




5) Write a program to perform addition of two n-word arrays

```
.model small
.data
a dw 0FEDCh,0BA98h,7654h
b dw 1234h,5678h,9ABCh
c dw 03 dup(?)

.code
main proc near
    mov ax,@data
```

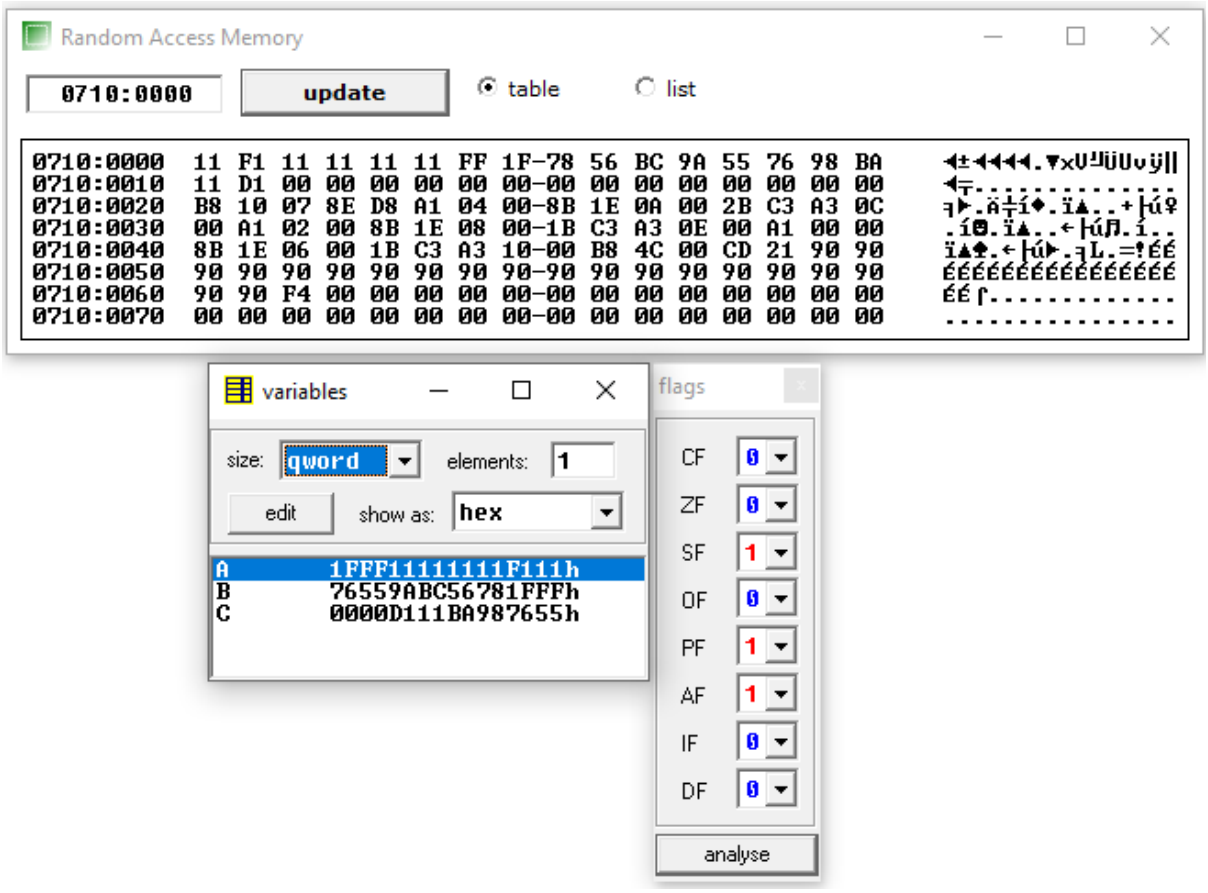
```
    mov ds,ax

    mov ax,a+4
    mov bx,b+4
    add ax,bx
    mov c,ax

    mov ax,a+2
    mov bx,b+2
    adc ax,bx
    mov c+2,ax

    mov ax,a
    mov bx,b
    adc ax,bx
    mov c+4,ax

    mov ax,04ch
    int 21h
endp
end
```




6) Write a program to perform subtraction of two n-word arrays

```
.model small
.data
a dw 0F111h,1111h,1111h
b dw 1FFFh,5678h,9ABCh
c dw 03 dup(?)

.code
main proc near
   mov ax,@data
   mov ds,ax

   mov ax,a+4
   mov bx,b+4
   sub ax,bx
   mov c,ax
```

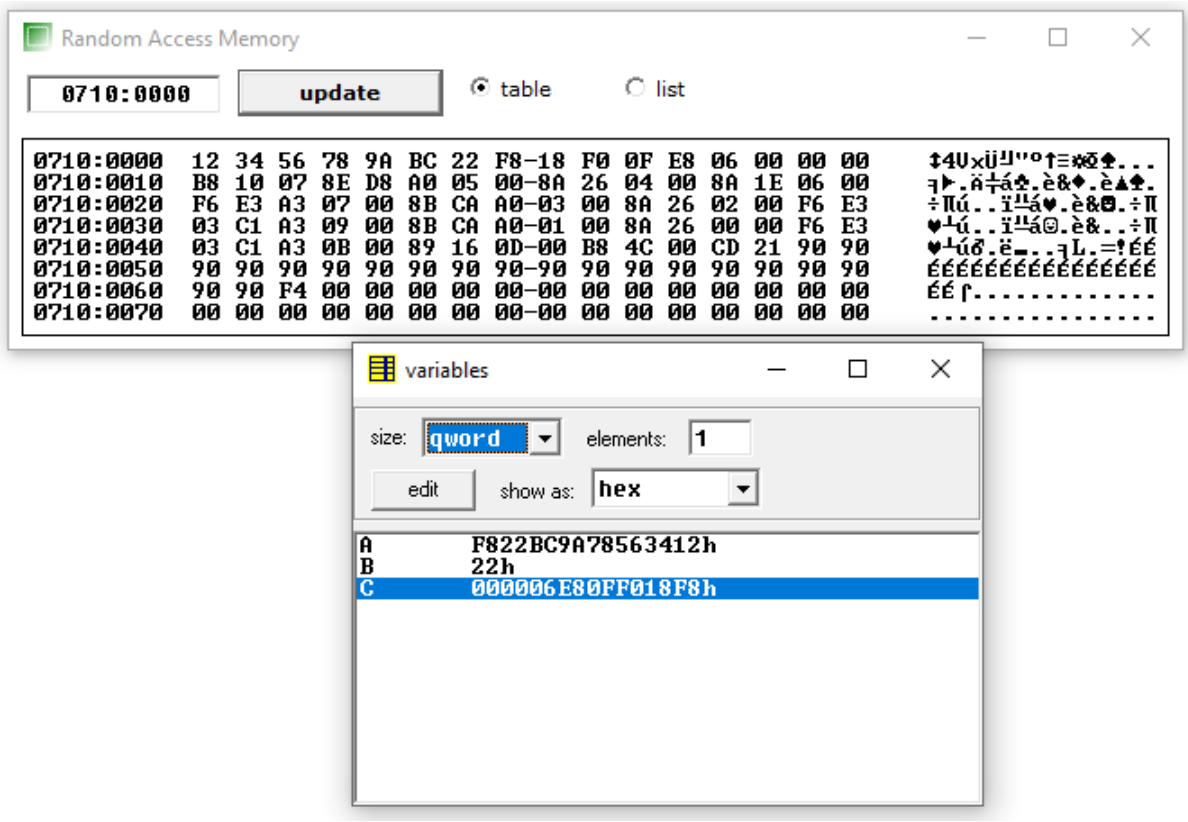
```
    mov ax,a+2
    mov bx,b+2
    sbb ax,bx
    mov c+2,ax

    mov ax,a
    mov bx,b
    sbb ax,bx
    mov c+4,ax

    mov ax,04ch
    int 21h
endp
end
```



7) Write a program to perform multiplication of n-byte array with array with an 8-bit number.

```
.model small
.data
a db 12h,34h,56h,78h,9Ah,0BCh
b db 22h
c dw 04 dup(?)

.code
main proc near
   mov ax,@data
   mov ds,ax

   mov al,a+5
   mov ah,a+4
   mov bl,b
   mul bl
   mov c,ax
   mov cx,dx

   mov al,a+3
   mov ah,a+2
   mul bl
   add ax,cx
   mov c+2,ax
   mov cx,dx

   mov al,a+1
   mov ah,a
   mul bl
   add ax,cx
   mov c+4,ax
   mov c+6,dx
```

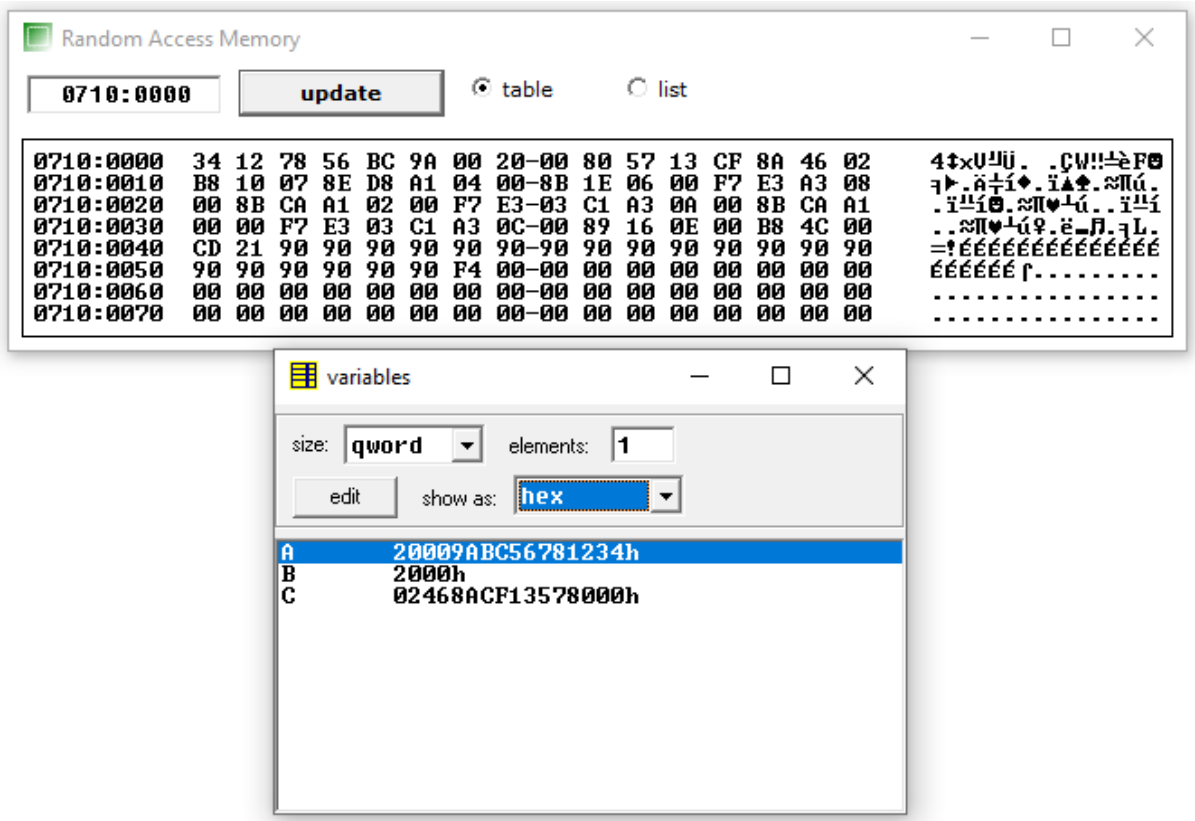
```
    mov ax,04ch
    int 21h
endp
end
```




8) Write a program to perform multiplication of an n-word array with 16-bit number

```
.model small
.data
a dw 1234h,5678h,9ABCh
b dw 2000h
c dw 04 dup(?)


.code
main proc near
    mov ax,@data
```

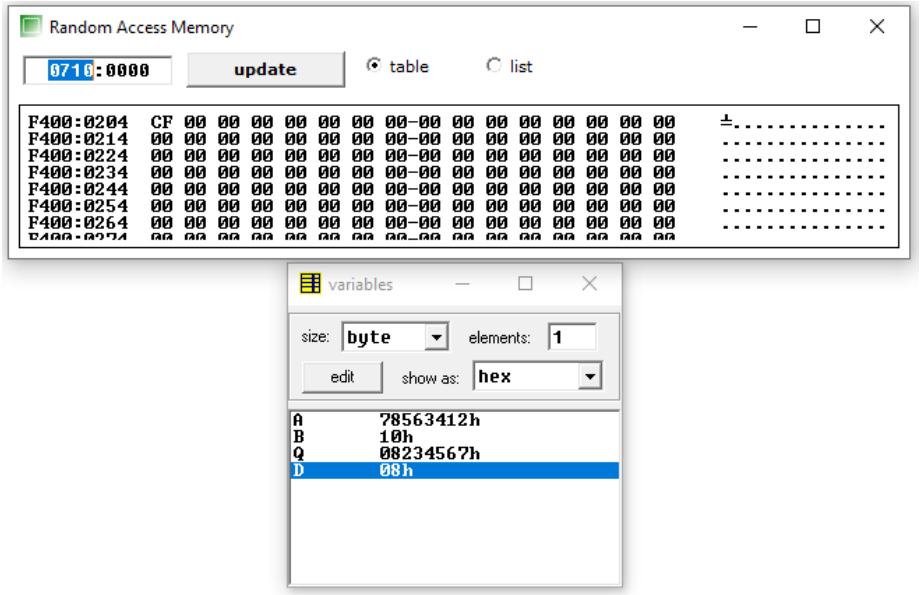
```
    mov ds,ax

    mov ax,a+4
    mov bx,b
    mul bx
    mov c,ax
    mov cx,dx

    mov ax,a+2
    mul bx
    add ax,cx
    mov c+2,ax
    mov cx,dx

    mov ax,a
    mul bx
    add ax,cx
    mov c+4,ax
    mov c+6,dx


    mov ax,04ch
    int 21h
endp
end
```




9) Write a program for division of an n-byte array with an 8-bit number

```
.model small
.data
a db 12h,34h,56h,78h
b db 10h
q db 03 dup(?)
d db ?

.code
main proc near
   mov ax,@data
   mov ds,ax

   mov ah,a
   mov al,a+1
   mov bl,b
```

```
    div bx
    mov q+3,ah
    mov q+2,al

    mov ah,a+2
    mov al,a+3
    div bx
    mov q+1,ah
    mov q,al
    mov d,dl


    mov ax,04ch
    int 21h
endp
end
```




10) Write a program for division of an n-word array with a 16-bit number.

```
.model small
.data
a dw 1234h,5678h,9ABCh
```

```
b dw 1111h
q dw 03 dup(?)
d dw ?

.code
main proc near
   mov ax,@data
   mov ds,ax

   mov ax,a
   mov bx,b
   div bx
   mov q+4,ax

   mov ax,a+2
   div bx
   mov q+2,ax

   mov ax,a+4
   div bx
   mov q,ax
   mov d,dx

   mov ax,04ch
   int 21h
endp
end
```