NATIONAL UNIVERSITY
of Computer & Emerging Sciences

COAL

LAB TASK 9

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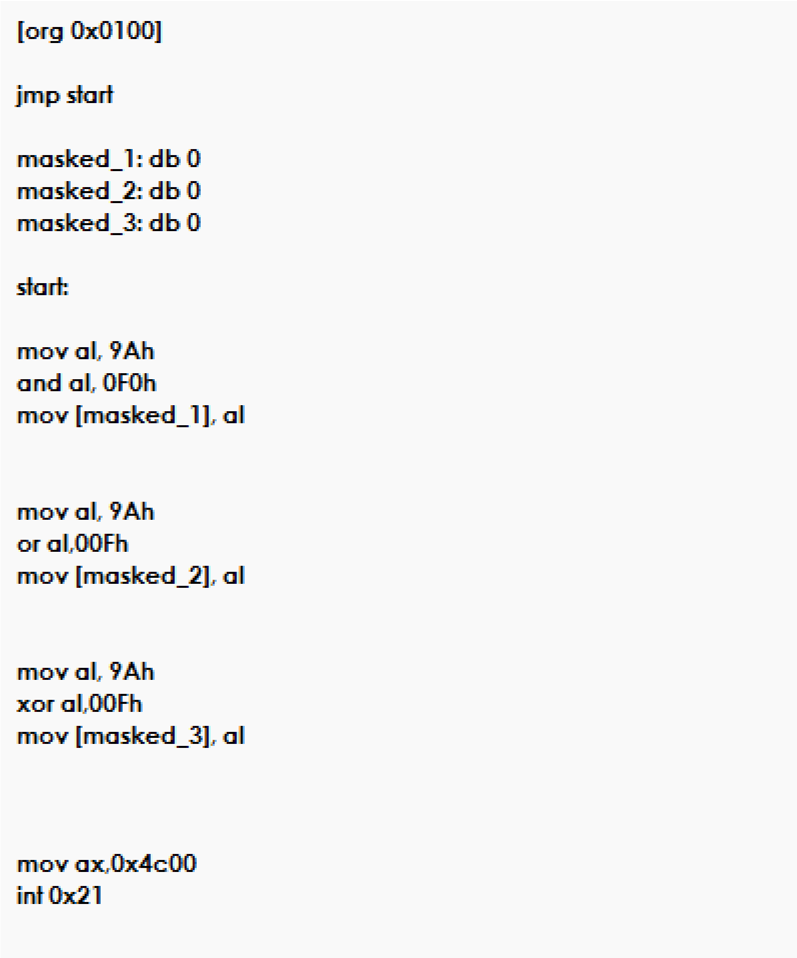
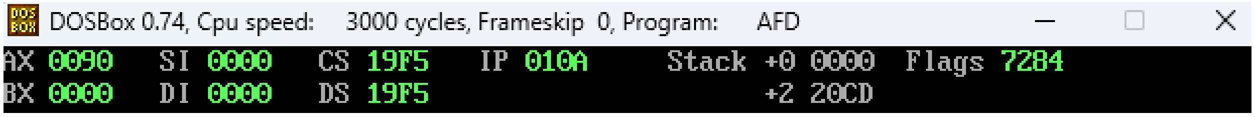
Question 1



```
[org 0x0100]

jmp start

masked_1: db 0
masked_2: db 0
masked_3: db 0

start:

mov al, 9Ah
and al, 0F0h
mov [masked_1], al


mov al, 9Ah
or al,00Fh
mov [masked_2], al


mov al, 9Ah
xor al,00Fh
mov [masked_3], al



mov ax,0x4c00
int 0x21
```

OUTPUT

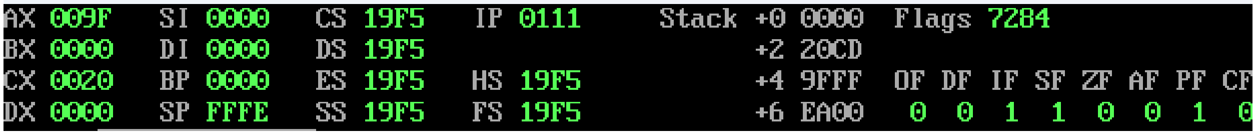
After Executing the And operation



DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: AFD

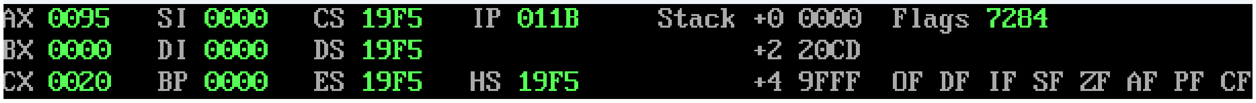
```
AX 0090   SI 0000   CS 19F5   IP 010A      Stack +0 0000  Flags 7284
BX 0000   DI 0000   DS 19F5                      +2 20CD
```

After Executing the OR operation



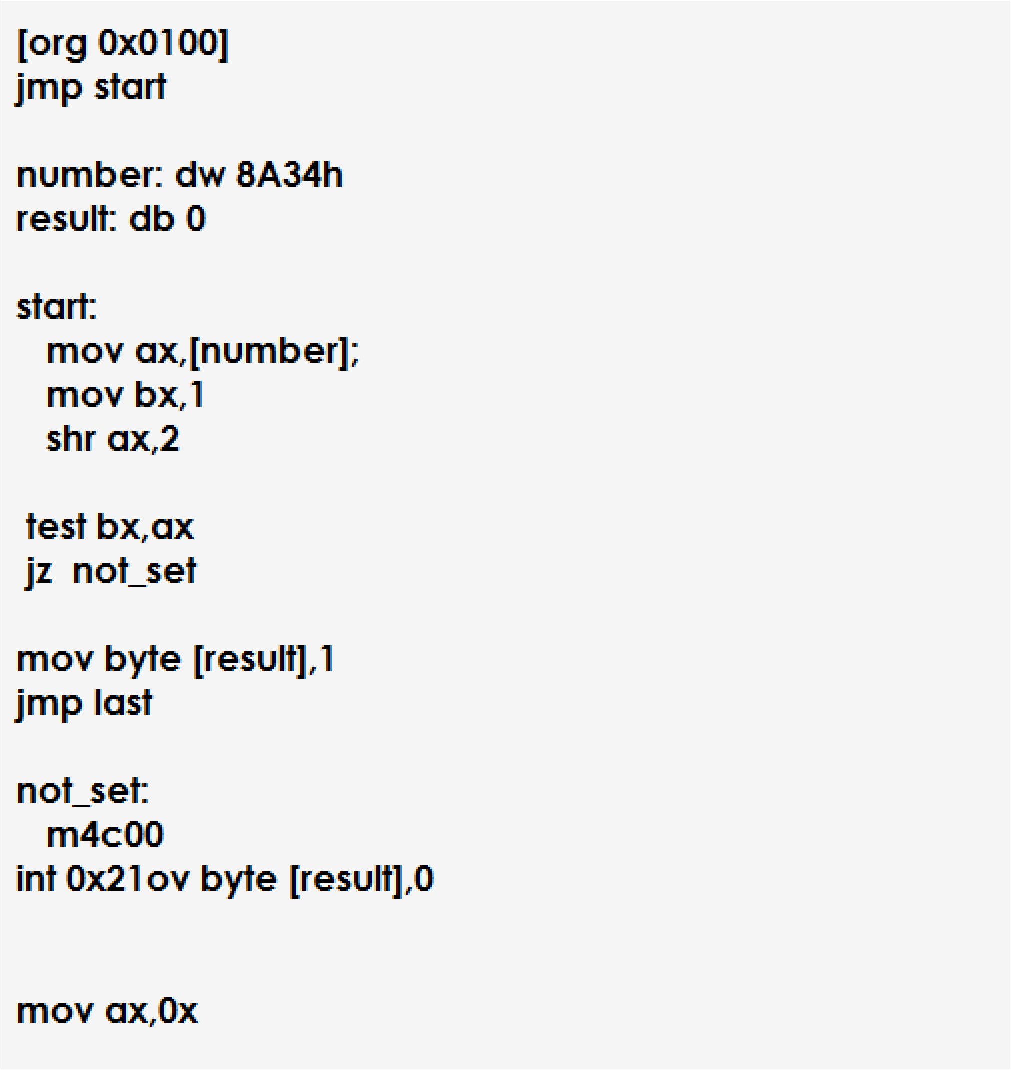
```
AX 009F   SI 0000   CS 19F5   IP 0111      Stack +0 0000  Flags 7284
BX 0000   DI 0000   DS 19F5                      +2 20CD
CX 0020   BP 0000   ES 19F5   HS 19F5            +4 9FFF  OF DF IF SF ZF AF PF CF
DX 0000   SP FFFE   SS 19F5   FS 19F5            +6 EA00   0  0  1  1  0  0  1  0
```

After Executing the XOR operation



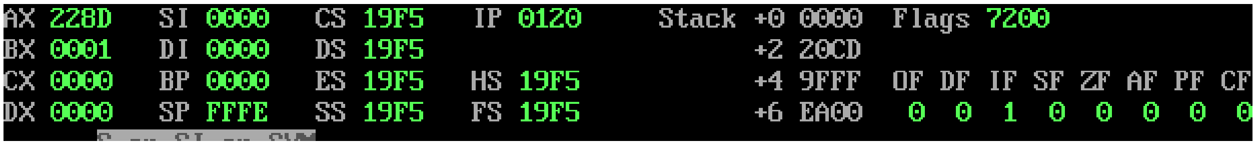
```
AX 0095   SI 0000   CS 19F5   IP 011B      Stack +0 0000  Flags 7284
BX 0000   DI 0000   DS 19F5                      +2 20CD
CX 0020   BP 0000   ES 19F5   HS 19F5            +4 9FFF  OF DF IF SF ZF AF PF CF
```

Question 2



```
[org 0x0100]
jmp start

number: dw 8A34h
result: db 0

start:
   mov ax,[number];
   mov bx,1
   shr ax,2

 test bx,ax
 jz  not_set

mov byte [result],1
jmp last

not_set:
   m4c00
int 0x21ov byte [result],0


mov ax,0x
```

OUTPUT

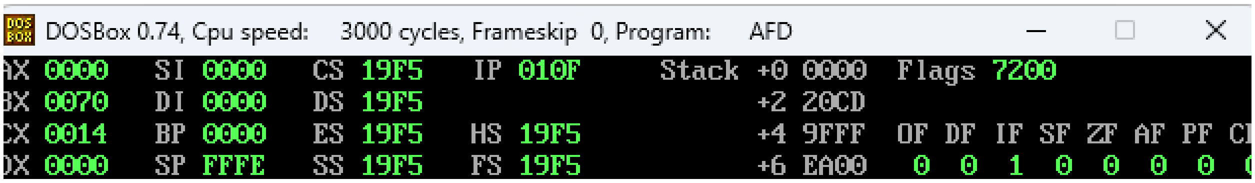


```
AX 228D    SI 0000    CS 19F5    IP 0120      Stack +0 0000  Flags 7200
BX 0001    DI 0000    DS 19F5                       +2 20CD
CX 0000    BP 0000    ES 19F5    HS 19F5            +4 9FFF  OF DF IF SF ZF AF PF CF
DX 0000    SP FFFE    SS 19F5    FS 19F5            +6 EA00   0  0  1  0  0  0  0  0
```

Question 3

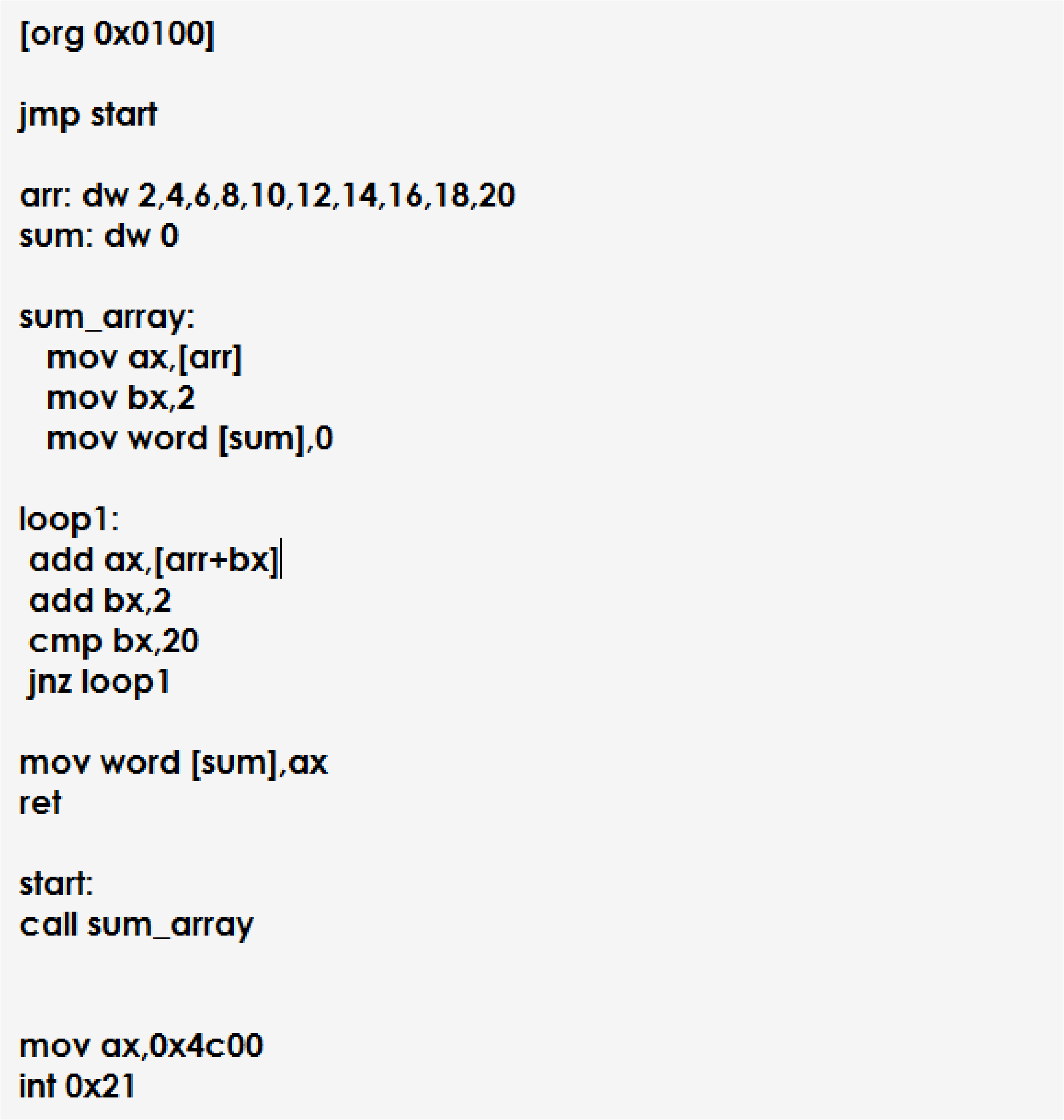
```
[org 0x0100]
jmp start

number: db 7Ch

clear_lower:
   and bl,0F0h
   ret

start:
  mov bl,[number]
  call clear_lower

mov ax,0x4c00
int 0x21
```

OUTPUT


DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: AFD

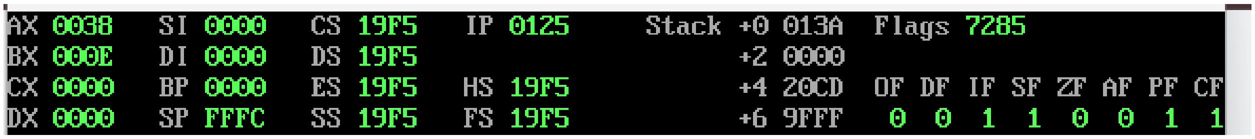
```
AX 0000   SI 0000   CS 19F5   IP 010F      Stack +0 0000  Flags 7200
BX 0070   DI 0000   DS 19F5                      +2 20CD
CX 0014   BP 0000   ES 19F5   HS 19F5            +4 9FFF  OF DF IF SF ZF AF PF CF
DX 0000   SP FFFE   SS 19F5   FS 19F5            +6 EA00   0  0  1  0  0  0  0  0
```

Question 4



```
[org 0x0100]

jmp start

arr: dw 2,4,6,8,10,12,14,16,18,20
sum: dw 0

sum_array:
   mov ax,[arr]
   mov bx,2
   mov word [sum],0

loop1:
 add ax,[arr+bx]
 add bx,2
 cmp bx,20
 jnz loop1

mov word [sum],ax
ret

start:
call sum_array


mov ax,0x4c00
int 0x21
```

OUTPUT

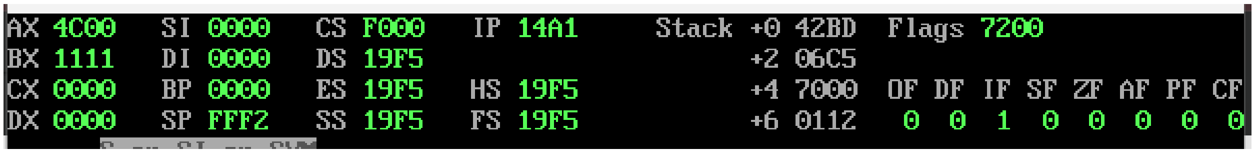


```
AX 0038   SI 0000   CS 19F5   IP 0125      Stack +0 013A  Flags 7285
BX 000E   DI 0000   DS 19F5                      +2 0000
CX 0000   BP 0000   ES 19F5   HS 19F5            +4 20CD  OF DF IF SF ZF AF PF CF
DX 0000   SP FFFC   SS 19F5   FS 19F5            +6 9FFF   0  0  1  1  0  0  1  1
```

Question 5

```
[org 0x0100]

jmp start

start:
   mov ax,1111h
   mov bx,2222h
   push ax
   push bx

   pop ax
   pop bx



mov ax,0x4c00
int 0x21
```

OUTPUT



```
AX 4C00   SI 0000   CS F000   IP 14A1     Stack +0 42BD  Flags 7200
BX 1111   DI 0000   DS 19F5                     +2 06C5
CX 0000   BP 0000   ES 19F5   HS 19F5           +4 7000  OF DF IF SF ZF AF PF CF
DX 0000   SP FFF2   SS 19F5   FS 19F5           +6 0112   0  0  1  0  0  0  0  0
```