Name: Khan Arshad Abdulla **Date – 20/03/2022**
Roll No: 20CO24

Experiment No. 5

Aim- To find largest no. & smallest no. From an array of 5 elements.

1. Find Largest no:

```
          data segment
          block     db    31h,23h,45h,0AFh,72h
          largest   db  1 DUP(?)
          ends
          code segment
          START:
          assume CS: code, DS: data
          mov ax, data
          mov  ds, ax
          lea  si, block
          mov  cl, 04h
          cld
          mov  al , [si]
          UP  :  cmp  al , [si+1]
          jnc DOWN
          mov al,[si+1]
    DOWN: inc si
          dec cl
          jnz  UP
          mov  largest , al
          mov  ax,  4c00h
          int    21h
          ends
          end start
```

2. Find Smallest no:

```
          data segment
          block     db    31h,23h,45h,0AFh,72h
          smallest    db  1 DUP(?)
          ends
          code segment
          start:
            mov  ax , data
            mov  ds , ax
            lea  si , block
            mov  cl , 04h
            cld
            mov  al , [si]
          UP  :  cmp  al , [si+1]
                jc DOWN
               mov al,[si+1]
      DOWN: inc si
               dec cl
```

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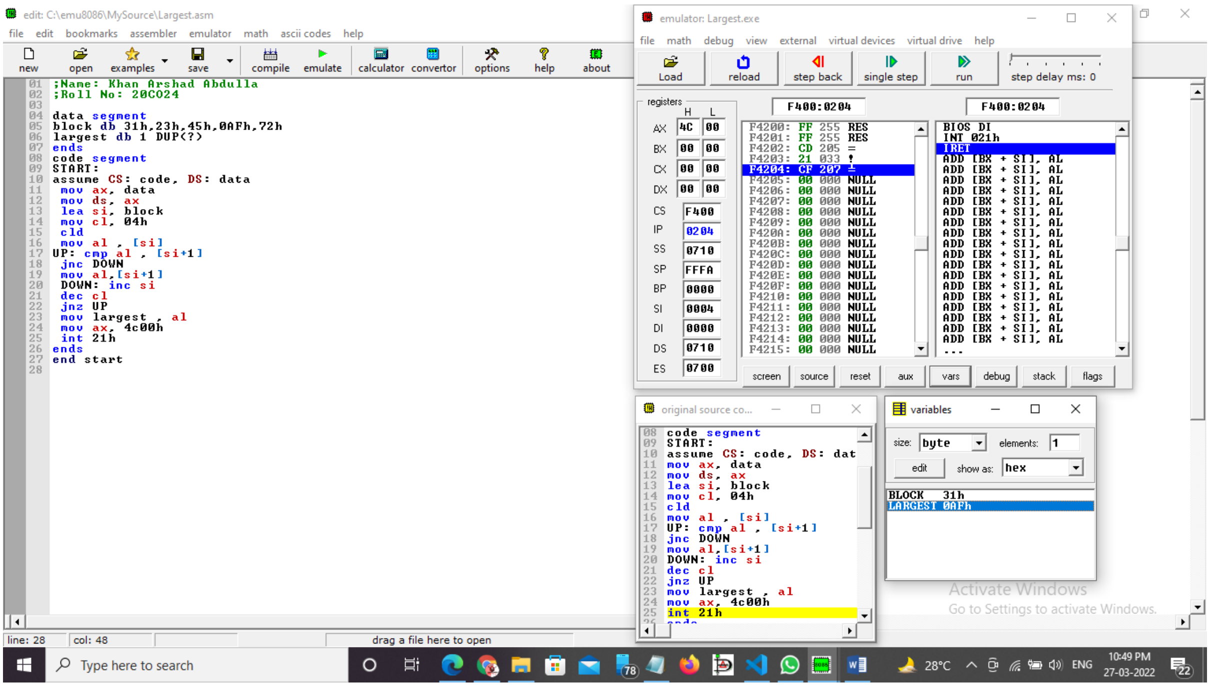
```
                jnz  UP
                mov  smallest , al
                mov  ax,  4c00h
                int    21h
        ends
        end start
```

Output –

1. Find Largest no:



edit: C:\emu8086\MySource\Largest.asm

```
;Name: Khan Arshad Abdulla
;Roll No: 20CO24

data segment
block db 31h,23h,45h,0AFh,72h
largest db 1 DUP(?)
ends
code segment
START:
assume CS: code, DS: data
 mov ax, data
 mov ds, ax
 lea si, block
 mov cl, 04h
 cld
 mov al , [si]
UP: cmp al , [si+1]
 jnc DOWN
 mov al,[si+1]
 DOWN: inc si
 dec cl
 jnz UP
 mov largest , al
 mov ax, 4c00h
 int 21h
ends
end start
```

line: 28 col: 48

emulator: Largest.exe

```
registers  H  L
AX        4C 00
BX        00 00
CX        00 00
DX        00 00
CS        F400
IP        0204
SS        0710
SP        FFFA
BP        0000
SI        0004
DI        0000
DS        0710
ES        0700
```

```
F400:0204
F4200: FF 255 RES
F4201: FF 255 RES
F4202: CD 205 =
F4203: 21 033 !
F4204: CF 207 ±
F4205: 00 000 NULL
F4206: 00 000 NULL
F4207: 00 000 NULL
F4208: 00 000 NULL
F4209: 00 000 NULL
F420A: 00 000 NULL
F420B: 00 000 NULL
F420C: 00 000 NULL
F420D: 00 000 NULL
F420E: 00 000 NULL
F420F: 00 000 NULL
F4210: 00 000 NULL
F4211: 00 000 NULL
F4212: 00 000 NULL
F4213: 00 000 NULL
F4214: 00 000 NULL
F4215: 00 000 NULL
```

```
F400:0204
BIOS DI
INT 021h
IRET
ADD [BX + SI], AL
...
```

variables — size: byte elements: 1 show as: hex

```
BLOCK   31h
LARGEST 0AFh
```

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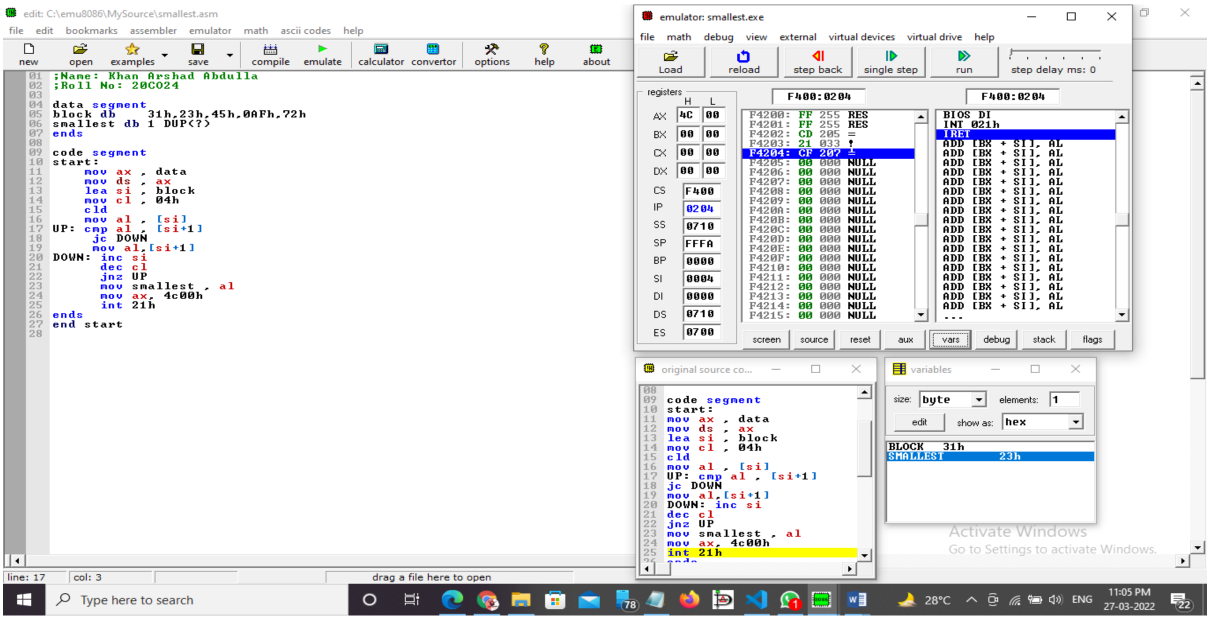
2. Find Smallest no:



edit: C:\emu8086\MySource\smallest.asm

```
;Name: Khan Arshad Abdulla
;Roll No: 20CO24

data segment
block db    31h,23h,45h,0AFh,72h
smallest db 1 DUP(?)
ends

code segment
start:
       mov ax , data
       mov ds , ax
       lea si , block
       mov cl , 04h
       cld
       mov al , [si]
UP:  cmp al , [si+1]
        jc DOWN
        mov al,[si+1]
DOWN:  inc si
         dec cl
         jnz UP
         mov smallest , al
         mov ax, 4c00h
         int 21h
ends
end start
```

line: 17 col: 3

emulator: smallest.exe

```
registers  H  L
AX        4C 00
BX        00 00
CX        00 00
DX        00 00
CS        F400
IP        0204
SS        0710
SP        FFFA
BP        0000
SI        0004
DI        0000
DS        0710
ES        0700
```

```
F400:0204
F4200: FF 255 RES
F4201: FF 255 RES
F4202: CD 205 =
F4203: 21 033 !
F4204: CF 207 ±
F4205: 00 000 NULL
F4206: 00 000 NULL
F4207: 00 000 NULL
F4208: 00 000 NULL
F4209: 00 000 NULL
F420A: 00 000 NULL
F420B: 00 000 NULL
F420C: 00 000 NULL
F420D: 00 000 NULL
F420E: 00 000 NULL
F420F: 00 000 NULL
F4210: 00 000 NULL
F4211: 00 000 NULL
F4212: 00 000 NULL
F4213: 00 000 NULL
F4214: 00 000 NULL
F4215: 00 000 NULL
```

```
F400:0204
BIOS DI
INT 021h
IRET
ADD [BX + SI], AL
...
```

variables — size: byte elements: 1 show as: hex

```
BLOCK   31h
SMALLEST         23h
```

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Load reload step back single step run step delay ms: 0
screen source reset aux vars debug stack flags
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Name: Khan Arshad Abdulla **Date – 20/03/2022**
Roll No: 20CO24

Procedure –

1. **Launch emu8086 IDE** from menu.
2. **Edit** your program , save as file_name.asm
3. **Compile** your program to check for syntax errors, rectify if any error is present. Save and recompile your program.
4. **Run** to observe output of your program.

Conclusion - To find largest no. & smallest no from an array of 5 elements, we use the CMP Instruction. We have also use the Carry Flag and the Zero Flag