Shaheed Zulfikar Ali Bhutto Institute of Science & Technology

COMPUTER SCIENCE DEPARTMENT

Computer organization and Assembly language

Lab Task # 03

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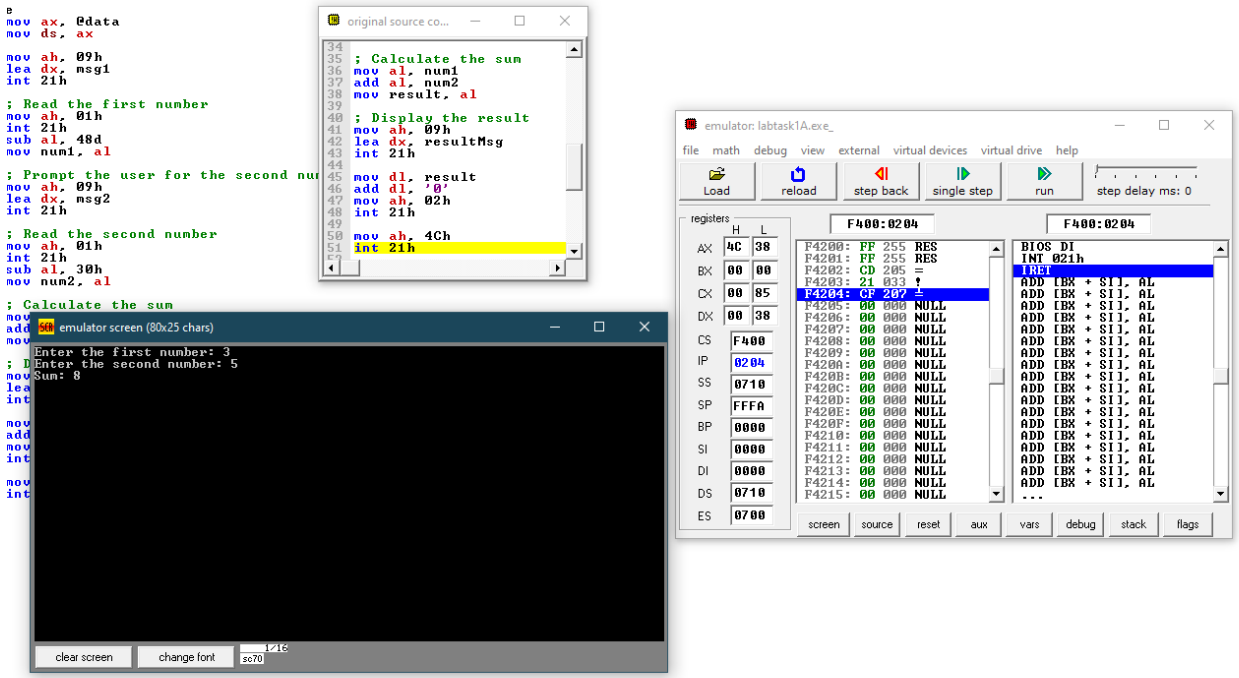
Code # 01

```
01  .model small
02  .data
03      num1 db ?
04      num2 db ?
05      result db ?
06      msg1 db "Enter the first number: $"
07      msg2 db 10d, 0Dh, "Enter the second number: $"
08      resultMsg db 10d, 13d, "Sum: $"
09
10  .code
11      mov ax, @data
12      mov ds, ax
13
14      mov ah, 09h
15      lea dx, msg1
16      int 21h
17
18      ; Read the first number
19      mov ah, 01h
20      int 21h
21      sub al, 48d
22      mov num1, al
23
24      ; Prompt the user for the second number
25      mov ah, 09h
26      lea dx, msg2
27      int 21h
28
29      ; Read the second number
30      mov ah, 01h
31      int 21h
32      sub al, 30h
33      mov num2, al
34
35      ; Calculate the sum
36      mov al, num1
37      add al, num2
38      mov result, al
39
40      ; Display the result
41      mov ah, 09h
42      lea dx, resultMsg
43      int 21h
44
45      mov dl, result
46      add dl, '0'
47      mov ah, 02h
48      int 21h
49
50      mov ah, 4Ch
51      int 21h
```

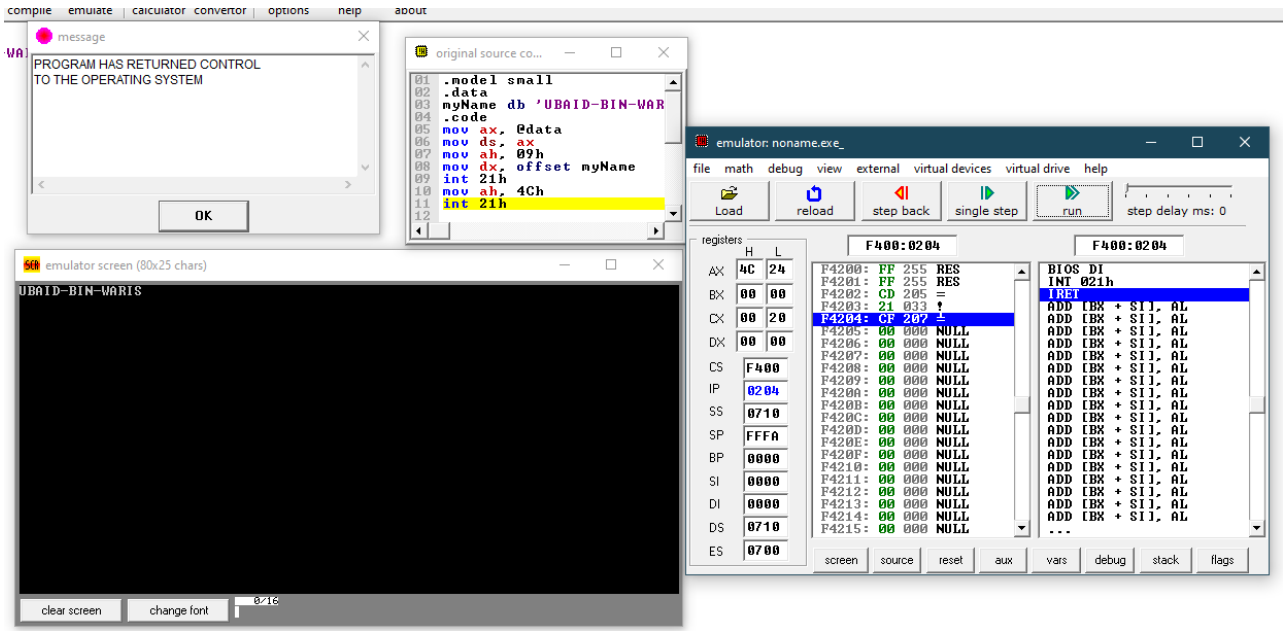
Output



Code #02

```
new   open   examples   save   compile   emulate
01 .model small
02 .data
03     myName db 'UBAID-BIN-WARIS$'
04 .code
05     mov ax, @data
06     mov ds, ax
07     mov ah, 09h
08     mov dx, offset myName
09     int 21h
10 mov ah, 4Ch
11 int 21h
12
```

Output

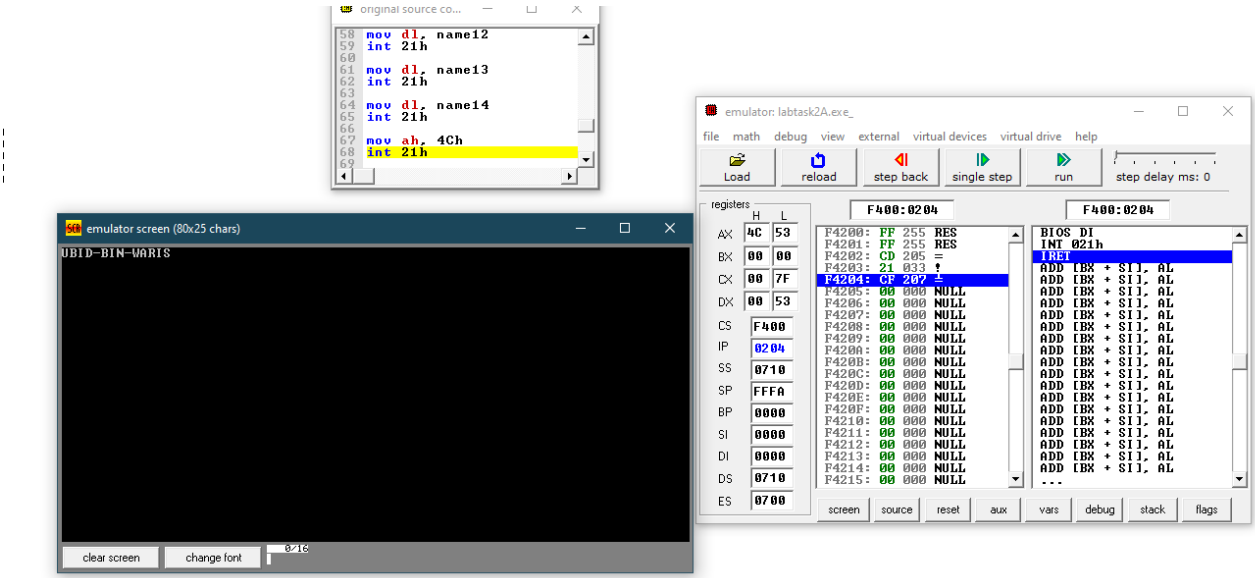

compile emulate calculator convertor options help about
message
PROGRAM HAS RETURNED CONTROL
TO THE OPERATING SYSTEM
OK
original source co...
.model small
.data
myName db 'UBAID-BIN-WAR
.code
mov ax, @data
mov ds, ax
mov ah, 09h
mov dx, offset myName
int 21h
mov ah, 4Ch
int 21h
emulator: noname.exe_
file math debug view external virtual devices virtual drive help
Load reload step back single step run step delay ms: 0
registers
AX 4C 24
BX 00 00
CX 00 20
DX 00 00
CS F400
IP 0204
SS 0710
SP FFFA
BP 0000
SI 0000
DI 0000
DS 0710
ES 0700
F400:0204
F400:0204
BIOS DI
INT 021h
IRET
emulator screen (80x25 chars)
UBAID-BIN-WARIS
clear screen
change font
screen source reset aux vars debug stack flags

Code #03

open examples save compile emulate calculato

```
.model small
.data
     name1 db 'U', 0
     name2 db 'B', 0
     name3 db 'I', 0
     name4 db 'D', 0
     name5 db '-', 0
     name6 db 'B', 0
     name7 db 'I', 0
     name8 db 'N', 0
     name9 db '-', 0
     name10 db 'W', 0
     name11 db 'A', 0
     name12 db 'R', 0
     name13 db 'I', 0
     name14 db 'S', 0

.code
main:
     mov ax, @data
     mov ds, ax

     mov ah, 02h

     mov dl, name1
     int 21h

     mov dl, name2
     int 21h

     mov dl, name3
     int 21h

     mov dl, name4
     int 21h

     mov dl, name5
     int 21h

     mov dl, name6
     int 21h

     mov dl, name7
     int 21h

     mov dl, name8
     int 21h

     mov dl, name9
     int 21h

     mov dl, name10
     int 21h

     mov dl, name11
     int 21h

     mov dl, name12
     int 21h

     mov dl, name13
     int 21h

     mov dl, name14
     int 21h

     mov ah, 4Ch
     int 21h
```

OUTPUT


original source co...
58 mov dl, name12
59 int 21h
60
61 mov dl, name13
62 int 21h
63
64 mov dl, name14
65 int 21h
66
67 mov ah, 4Ch
68 int 21h
69
emulator: labtask2A.exe_
file math debug view external virtual devices virtual drive help
Load reload step back single step run step delay ms: 0
registers
H L
AX 4C 53
BX 00 00
CX 00 7F
DX 00 53
CS F400
IP 0204
SS 0710
SP FFFA
BP 0000
SI 0000
DI 0000
DS 0710
ES 0700
F400:0204
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
BIOS DI
INT 021h
IRET
ADD [BX + SI], AL
---
screen source reset aux vars debug stack flags
emulator screen (80x25 chars)
UBID-BIN-WARIS
clear screen
change font
0/16