

Homework1:Helloworld

Part1: 传统方式

详情见仓库中的文件，代码示例如下：

```
STKSEG SEGMENT STACK
DW 32 DUP(0)
STKSEG ENDS

DATASEG SEGMENT
    MSG DB "Hello world$"
DATASEG ENDS

CODESEG SEGMENT
    ASSUME CS:CODESEG,DS:DATASEG
MAIN PROC FAR
    MOV AX,DATASEG
    MOV DS,AX
    MOV AH,9
    MOV DX,OFFSET MSG
    INT 21H
    MOV AX,4C00H
    INT 21H
MAIN ENDP
CODESEG ENDS
    END MAIN
```

Part2: 另类方式

通过直接写内存方式执行代码，步骤如下：

1.进入debug：

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Progra...
Welcome to DOSBox v0.74-3

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount f f:\32
Drive F is mounted as local directory f:\32\

Z:\>f:

F:\>debug
```

2.写数据“Hello\$”对应的 ASCII 码 48 65 6c 6c 6f 24 写入内存
Debug 下用-e 076a: 0 回车 一次写入

```
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Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount f f:\32
Drive F is mounted as local directory f:\32\

Z:\>f:

F:\>debug
-e 076a: 0
076A:0000  00.48  00.65  00.6c  00.6c  00.6f  00.24
```

3.写代码的机器码 b8 6b 07 be d8 ba 02 00 b4 09 cd 21 b8 00 4c cd 21 （17 个字节） 写入内存 Debug
下用-e 076b: 0 回车 一次写入

```
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Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount f f:\32
Drive F is mounted as local directory f:\32\

Z:\>f:

F:\>debug
-e 076a: 0
076A:0000 00.48 00.65 00.6c 00.6c 00.6f 00.24

-e 076b: 0
076B:0000 00.b8 00.6b 00.07 00.be 00.d8 00.ba 00.02 00.00
076B:0008 00.b4 00.09 00.cd 00.21 00.b8 00.00 00.4c 00.cd
076B:0010 00.21_
```

4.修改寄存器及执行，如下图所示

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Progra...

-r
AX=0000 BX=0000 CX=0000 DX=0000 SP=00FD BP=0000 SI=0000 DI=0000
DS=073F ES=073F SS=073F CS=073F IP=0100 NU UP EI PL NZ NA PO NC
073F:0100 0000 ADD [BX+SI],AL DS:0000=CD
-r cs
CS 073F
:076b
-r ds
DS 073F
:076a
-r
AX=0000 BX=0000 CX=0000 DX=0000 SP=00FD BP=0000 SI=0000 DI=0000
DS=076A ES=073F SS=073F CS=076B IP=0100 NU UP EI PL NZ NA PO NC
076B:0100 0000 ADD [BX+SI],AL DS:0000=48
-r ip
IP 0100
:0
-r
AX=0000 BX=0000 CX=0000 DX=0000 SP=00FD BP=0000 SI=0000 DI=0000
DS=076A ES=073F SS=073F CS=076B IP=0000 NU UP EI PL NZ NA PO NC
076B:0000 B8B07 MOV AX,076B
-g
Hello
F:\>_
```