

Assembly Language LAB

Islamic University – Gaza

Engineering Faculty

Department of Computer Engineering

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ECOM 2125: Assembly Language LAB

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Lab # 3

Data Transfer & Arithmetic *HW Solution*

Homework:

1. Write an assembly code to put the byte array *your name* in the double word array *New_yourname* in the opposite direction:

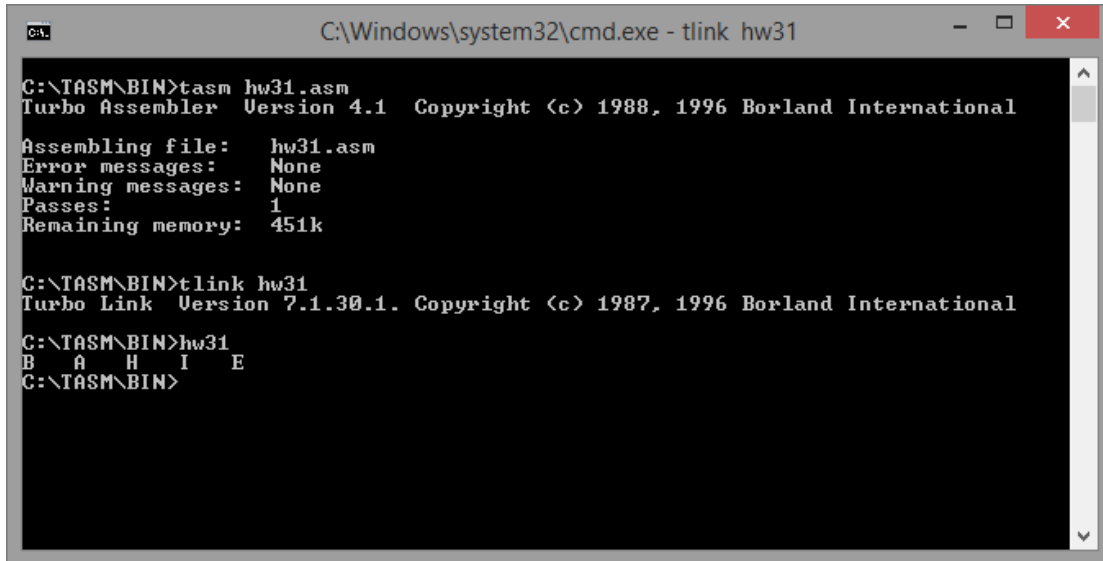
```
eihab db 'E','T','H','A','B'  
New_eihab dd 5 dup('','$')
```

Then print the content of array *New_yourname*

Solution:

```
.model small  
.386  
.stack 100h  
.data  
  
eihab db 'E','T','H','A','B'  
New_name dd 5 dup('','$',?)  
.code  
main:  
    mov ax,@data  
    mov ds,ax  
  
    movzx eax,[eihab+4]  
    mov [New_name],eax  
  
    movzx eax,[eihab+3]  
    mov [New_name+4],eax  
  
    movzx eax,[eihab+2]  
    mov [New_name+8],eax  
  
    movzx eax,[eihab+1]  
    mov [New_name+12],eax  
  
    movzx eax,[eihab]  
    mov [New_name+16],eax  
  
    mov ah,09h  
    mov dx, offset New_name  
    int 21h  
  
    mov ah,4ch  
    int 21h  
end main
```

Output:



```
C:\Windows\system32\cmd.exe - tlink hw31
C:\TASM\BIN>tasm hw31.asm
Turbo Assembler Version 4.1 Copyright (c) 1988, 1996 Borland International
Assembling file:   hw31.asm
Error messages:   None
Warning messages: None
Passes:           1
Remaining memory: 451k

C:\TASM\BIN>tlink hw31
Turbo Link Version 7.1.30.1. Copyright (c) 1987, 1996 Borland International
C:\TASM\BIN>hw31
B A H I E
C:\TASM\BIN>
```

2. Use the array odd to find the square of the numbers between 1 and 5 and put the square of each number in the array square:

```
odd db 1,3,5,7,9
square db 5 dup(?)
```

Solution:

```
.model small
.386
.stack 100h
.data
odd db 1,3,5,7,9
square db 5 dup(?)
.code
main:
    mov ax,@data
    mov ds,ax

    mov al,odd
    mov square,al    ; 1 = 1*1
    add al,odd+1
    mov square+1,al ; 4 = 2*2
    add al,odd+2
    mov square+2,al ; 9 = 3*3
    add al,odd+3
    mov square+3,al ; 16 = 4*4
    add al,odd+4
    mov square+4,al ; 25 = 5*5

    mov ah,4ch
    int 21h
end main
```