Lab Homework Week 5 Report

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Objective: To understand how to write simple Assembly program and program structure.

Exercise5.asm code :

exercise5.asm - 記事本

檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)

```
TITLE  exercise5[exercise5.asm]
INCLUDE Irvine32.inc

.data

myID byte "102403020"          ;組長的學號

size_ID = LENGTHOF myID             ;size_ID表示myID的長度

myID2 byte "102403016"         ;組員的學號

size_ID2 = LENGTHOF myID2           ;size_ID2表示myID2的長度

.code

Convert PROC USES eax ebx edx   ;Convert會改變myID的內容0-A  1-B  以此類推

    L1:

       mov al, [esi]

       add al,11h

       mov [esi], al

       inc esi

       loop L1

    ret

Convert ENDP

Convert2 PROC       ;Convert2功能和Convert一樣

push eax
push ebx
push edx

L1:

       mov al, [esi]

       add al, 11h

       mov [esi], al

       inc esi

       loop L1
pop edx
pop ebx
pop eax

    ret

Convert2 ENDP
```

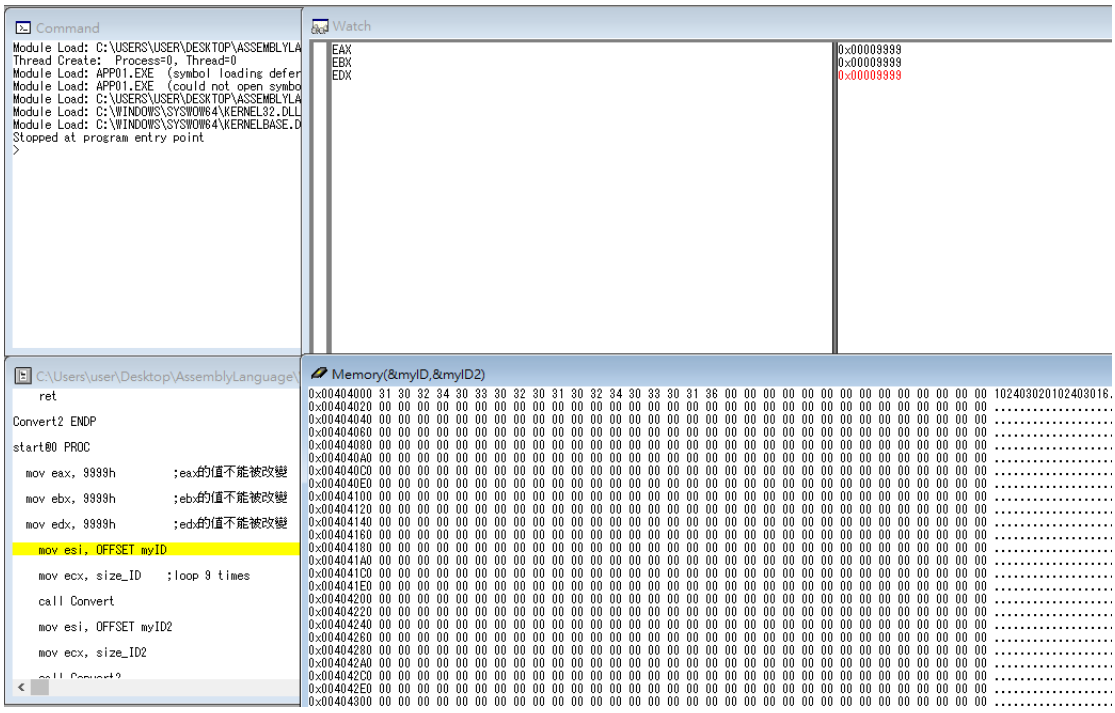
```
start@0 PROC
  mov eax, 9999h          ;eax的值不能被改變
  mov ebx, 9999h          ;ebx的值不能被改變
  mov edx, 9999h          ;edx的值不能被改變
    mov esi, OFFSET myID
    mov ecx, size_ID    ;loop 9 times
    call Convert
    mov esi, OFFSET myID2
    mov ecx, size_ID2
    call Convert2
    exit
start@0 ENDP
END start@0
```

This program start with using esi to store the memory address of “myID”, and then call function Convert to change the value of “myID” which esi point at it memory address 9 times by loop. After that, do the same thing to “myID2”.

＊Function Convert use “USES eax ebx edx” to ensure the value of eax,ebx and edx won’t be changed. Function Convert2 push them at first and pop them in the end.

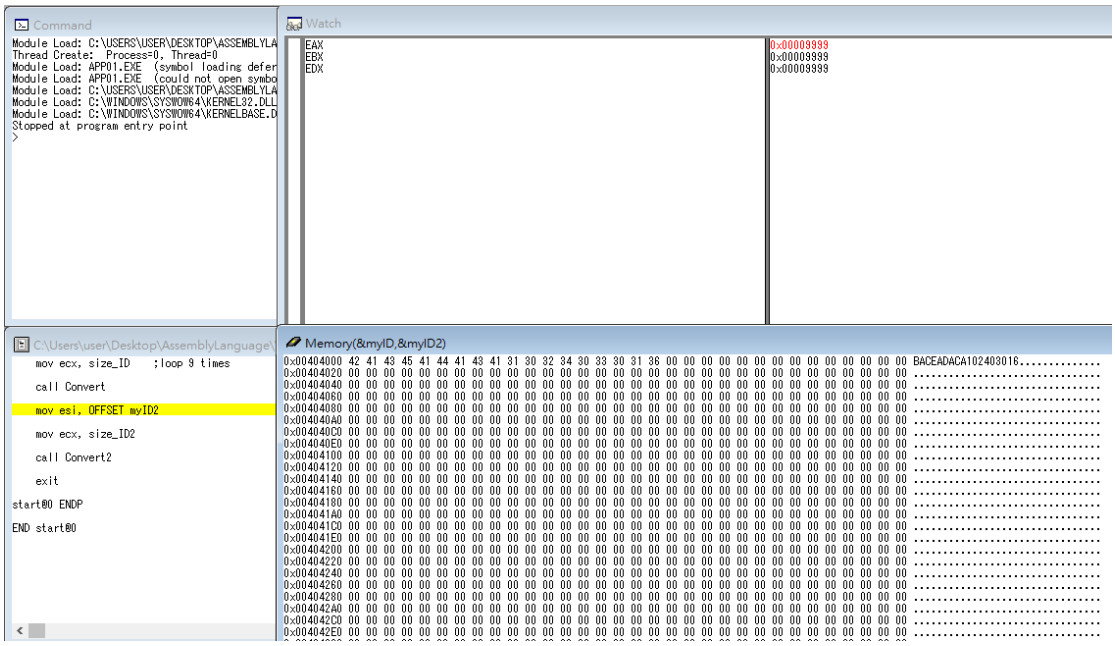
In the initial state : eax.ebx and edx are set to 9999h, the value of

“myID” is 102403020, the value of “myID2” is 102403016.

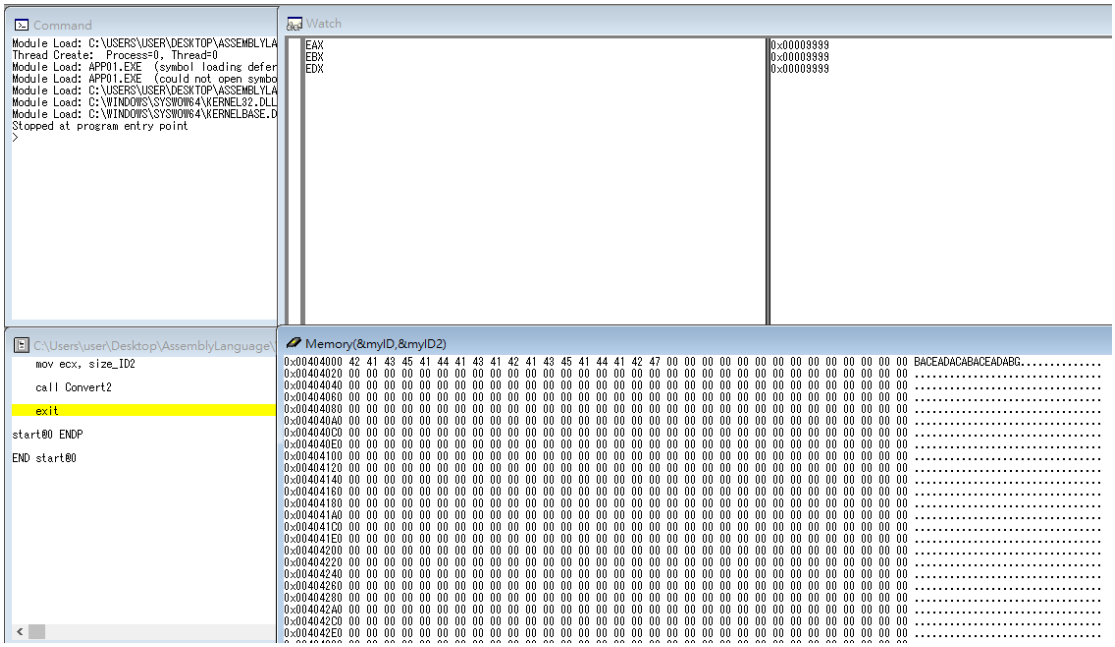


After Convert executed : the value of “myID” has been changed to

English character. The value of eax,ebx and edx remain 9999h.



After Convert2 executed : the value of “myID2” has been changed to English character. The value of eax,ebx and edx remain 9999h.



Reviews

We felt exercise5 was easier than previous exercises, but we still faced some problems when we were doing this work. First, we set myID and myID2 as ‘1’ ‘0’ ‘2’ ‘4’ … instead of “102403020” at first. We found that both of them work but the latter was more simple and easy to read. Moreover, we stocked the procedure in the loop that step down button couldn’t be pressed. Finally, we found that we missed the key instruction “inc esi” to run the loop, we added it on our code, referred other codes from the guided note and finished the lab exercise.