

第22章 副程式的連結

module 1

```
...  
CALL A22SUB1  
...
```

module 2

```
A22SUB1 PROC  
...
```

```

        EXTRN  A22SUB1:FAR
STACKSEG SEGMENT PARA STACK 'Stack'
        DW    64 DUP (?)
STACKSEG ENDS
;-----
DATASEG SEGMENT PARA 'Data'
QTY     DW    0140H
PRICE  DW    2500H
DATASEG ENDS
;-----
CODESEG SEGMENT PARA 'Code'
BEGIN   PROC   FAR
        ASSUME CS:CODESEG, DS:DATASEG, SS: STACKSEG
        MOV   AX,DATASEG
        MOV   DS,AX
        MOV   AX,PRICE
        MOV   BX,QTY
        CALL  A2SUB1
        MOV   AX,4C00H
        INT   21H
BEGIN   ENDP
CODESEG ENDS
        END    BEGIN
;-----
CODESEG SEGMENT PARA 'Code'
A22SUB1 PROC   FAR
        ASSUME CS:CODESEG
        PUBLIC A22SUB1
        IMUL  BX
        RETF
A22SUB1 ENDP
CODESEG ENDS
        END    A22SUB1

```

使用堆疊傳送參數: 傳值

```

        EXTRN A22SUB4:FAR
;-----
STACKSEG SEGMENT PARA STACK 'Stack'
        DW    64 DUP (?)
STACKSEG ENDS
;-----
DATASEG SEGMENT PARA 'Data'
QTY     DW    0140H
PRICE  DW    2500H
DATASEG ENDS
;-----
CODESEG SEGMENT PARA PUBLIC 'Code'
BEGIN   PROC   FAR
        ASSUME CS:CODESEG, DS:DATASEG, SS: STACKSEG
        MOV   AX,DATASEG
        MOV   DS,AX
        PUSH PRICE
        PUSH QTY
        CALL  A22SUB4
        MOV   AX,4C00H
        INT   21H
BEGIN   ENDP
CODESEG ENDS
        END    BEGIN

```

7E	2500	+8
7C	0140	+6
7A	CS	+4
78	IP	+2
76	BP	← BP

```

CODESEG SEGMENT PARA PUBLIC 'Code'
A22SUB4 PROC   FAR
        ASSUME CS:CODESEG
        PUBLIC A22SUB4
        PUSH  BP
        MOV   BP,SP
        MOV   AX,[BP+8]
        MOV   BX,[BP+6]
        MUL  BX
        POP   BP
        RETF
        4
A22SUB4 ENDP
CODESEG ENDS
        END

```

使用堆疊傳送參數: 傳地址

```
EXTRN A22SUB5:FAR
;-----
STACKSEG SEGMENT PARA STACK 'Stack'
    DW 64 DUP (?)
STACKSEG ENDS
;-----
DATASEG SEGMENT PARA 'Data'
    QTYDW 0140H
    PRICE DW 2500H
DATASEG ENDS
;-----
CODESEG SEGMENT PARA PUBLIC 'Code'
BEGIN PROC FAR
    ASSUME CS:CODESEG, DS:DATASEG, SS: STACKSEG
    MOV AX,DATASEG
    MOV DS,AX
    LEA CX,PRICE
    LEA DX,QTY
    PUSH CX
    PUSH DX
    CALL A2SUB5
    MOV AX,4C00H
    INT 21H
BEGIN ENDP
CODESEG ENDS
END BEGIN
```

CODESEG	SEGMENT	PARA	PUBLIC
'Code'			
A22SUB5	PROC	FAR	
	ASSUME	CS:CODESEG	
	PUBLIC	A22SUB5	
	PUSH	BP	
	MOV	BP,SP	
	MOV	DI,[BP+8]	
	MOV	BX,[BP+6]	
	MOV	AX,[DI]	
	MUL	WORD PTR [BX]	
	POP	BP	
	RETF	4	
A22SUB4	ENDP		
CODESEG	ENDS		
	END		

C 程式呼叫組合語言副程式

```
#include <stdio.h>
int main (void)
{
    int    temp_row, temp_col;

    printf("Enter cursor row: ");
    scanf("%d", &temp_row);

    printf("Enter cursor column: ");
    scanf("%d", &temp_col);

    set_curs(temp_row, temp_col);
    printf("New cursor location\n");
}
```

```
_DATA segment          word 'DATA'
row    equ    [bp+4]
col    equ    [bp+6]
_DATA ends

_TEXT segment byte public 'CODE'
DGROUP GROUP _DATA
        ASSUME CS:_TEXT, DS:DGROUP, SS:DGROUP
        PUBLIC _set_curs
_set_curs PROC NEAR
        PUSH BP
        MOV  BP,SP
        MOV  AH,2
        MOV  BX,0
        MOV  DH,ROW
        MOV  DL,COL
        INT  10H
        POP  BP
        RET
_set_curs ENDP
_TEXT ENDS
        END
```