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SECTION: - IT A3 UG2

Jadavpur University Session 2024-25, Odd Semester Microprocessor Lab Paper Code: IT/S/222

Assignment 1

1. Write an Assembly Language Program to add two sixteen-bit numbers. The numbers are stored in DS: 0030H and DS: 0040H. Store the result in DS: 0050H, DS: 0051H, and DS: 0052H.

.model small

- .stack 100h
- .data
- .code

main proc

MOV AX,@DATA

MOV DS,AX

MOV SI, 0030H

MOV AX, [SI]

MOV SI, 0040H

ADD AX,[SI]

MOV SI, 0050H

MOV [SI],AX

MOV AH, 00H

ADC AH, AH

ADD SI, 0002H

MOV [SI],AH

INT 03H

main endp

end main

2. Write an Assembly Language Program to subtract an 8-bit number stored in DS: 0030H from a number stored in DS: 0040H using 2's complement method. Store the result in DS: 0050H, and DS: 0051H.

.model small

.stack 100h

.code

main proc

MOV AX, @DATA

MOV DS,AX

MOV SI,0030H

MOV AL, [SI]

NOT AL

INC AL

MOV SI,0040H

ADD AL,[SI]

JC L

NOT AL

INC AL

L:

MOV SI,0050H

MOV [SI],AL

CMC

MOV AH,00H

ADC AH, AH

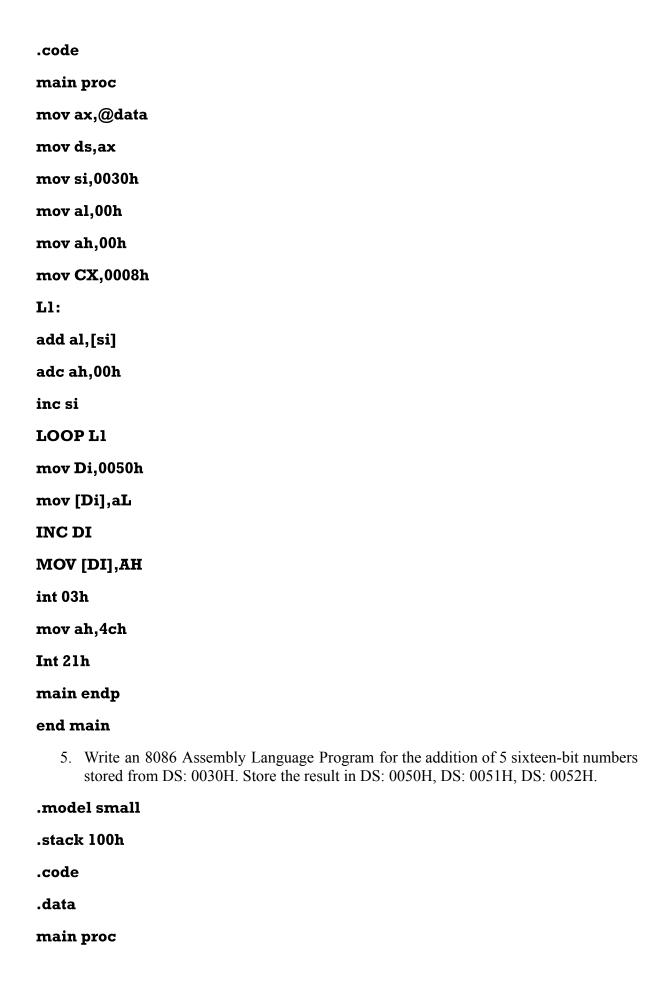
INC SI

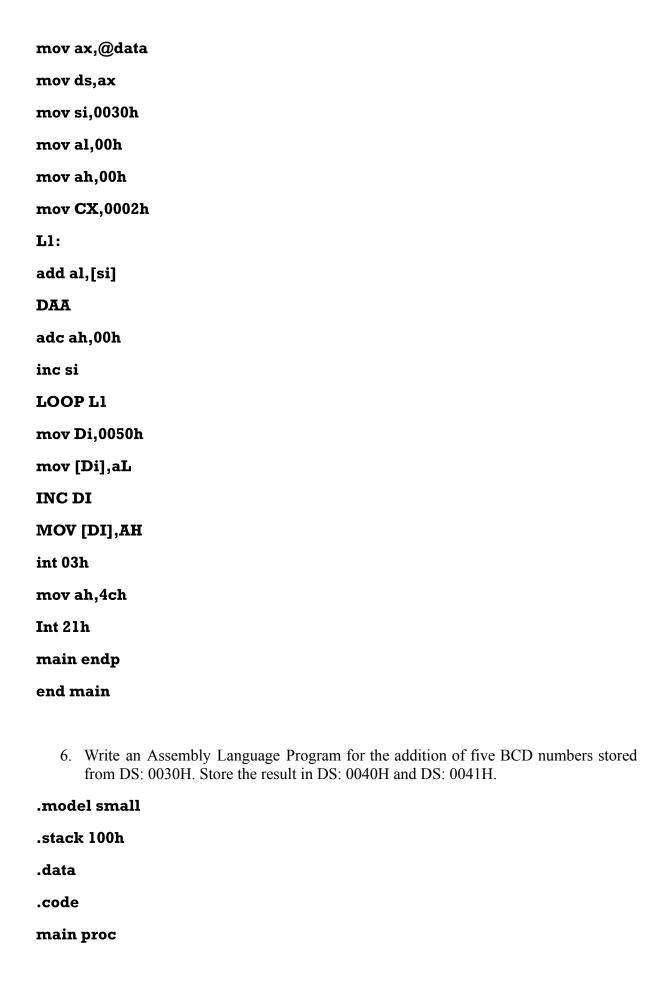
MOV [SI],AH

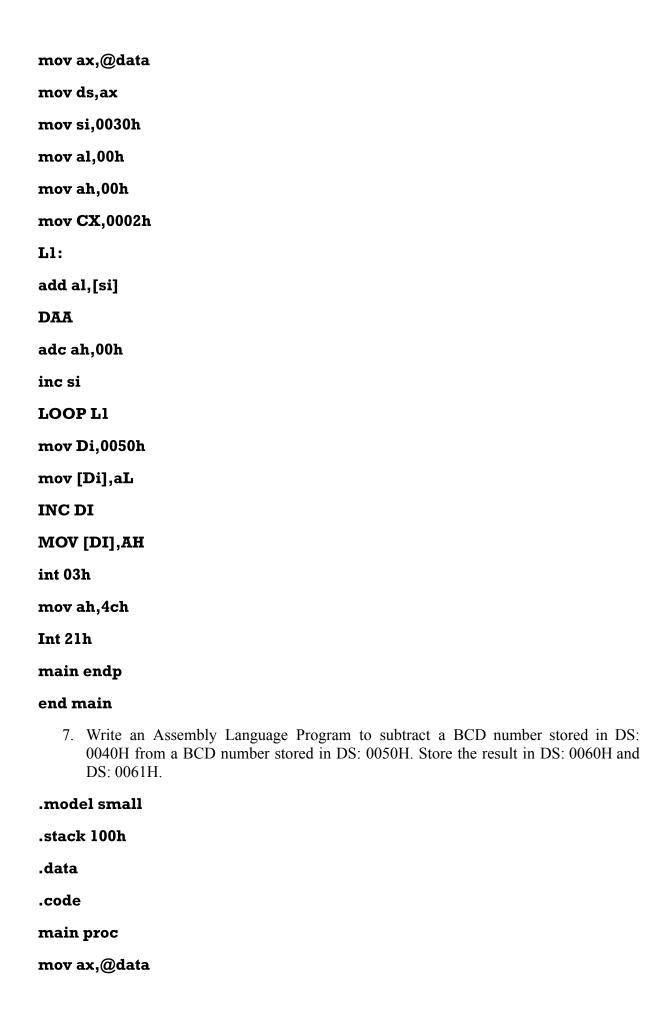
INT 03H **MOV AH,4CH** INT 21H main endp end main 3. Write a program to transfer a block of 8 data bytes from memory location DS: 0030H to DS: 0040H. .model small .stack 100h .data .code main proc MOV AX, @DATA **MOV DS,AX MOV ES, AX MOV SI,0030H MOV DI,0040H MOV CX,0008H** CLD L1: MOVSB LOOP L1 INT 03H MOV AH, 4CH **MAIN ENDP END MAIN** 4. Write an 8086 Assembly Language Program for the addition of 7 eight-bit numbers stored from DS: 0030H. Store the result in DS: 0050H and DS: 0051H. .model small

.stack 100h

.data

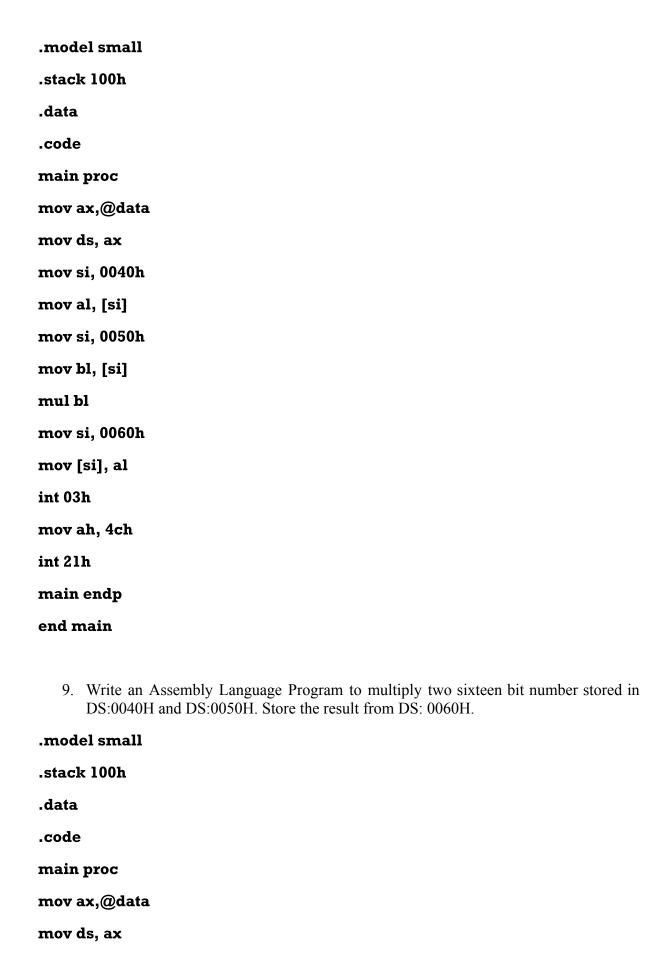






```
mov ds, ax
mov dl,00h
mov si, 0050h
mov al, [si]
mov si, 0040h
sub al,[si]
das
jnc ll
mov bl, al
mov al, 99h
sub al, bl
inc al
daa
mov dl, 01h
11:
mov si, 60h
mov [si],al
inc si
mov [si],dl
int 03h
mov ah, 4ch
int 21h
main endp
end main
```

8. Write an Assembly Language Program to multiply two eight bit number stored in DS: 0040H and DS: 0050H. Store the result from DS: 0060H.



```
mov si, 0040h
mov ax, [si]
mov si, 0050h
mov bx, [si]
mul bx
mov si, 0060h
mov [si], ax
mov si, 0062h
mov [si],dx
int 03h
mov ah, 4ch
int 21h
main endp
end main
   10. Write an Assembly Language Program to divide 88H by 33H. Store the quotient in
      DS: 0060H and remainder in DS: 0061H.
.model small
.stack 100h
.data
.code
main proc
mov ax,@data
mov ds, ax
mov ax,0000h
mov al, 88h
mov bl, 33h
div bl
mov si, 0060h
```

```
int 03h
mov ah, 4ch
int 21h
main endp
end main
   11. Write an Assembly Language Program to divide 2222H by 55H. Store the quotient
      from DS: 0060H and remainder in DS: 0062H.
.model small
.stack 100h
.data
.code
main proc
mov ax,@data
mov ds, ax
mov ax,0000h
mov ax,2222H
mov bl, 55h
div bl
mov si, 0060h
mov [si], ax
mov si, 0062h
mov [si], dx
int 03h
mov ah, 4ch
int 21h
main endp
end main
```

mov [si], ax