

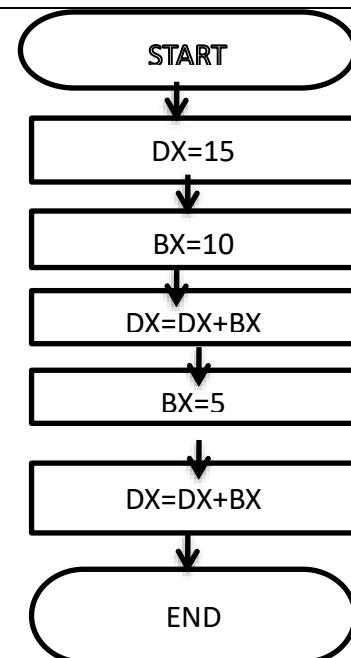
Example-01: Write algorithm, Draw flowchart and write assembly code of assign two integer number and their addition.

Algorithm steps

1. STORE 15 TO DX
2. STORE 10 TO BX
3. SUM BX TO DX
4. STORE 5 TO BX
5. SUM DX,BX

Assembly Program

```
MOV DX,000Fh
MOV BX,000Ah
ADD DX,BX
MOV BX,0005h
ADD DX,BX
INT 20h ; return to dos
```



Example-02: Write an Assembly program for Display a character on the screen with algorithm and flowchart.

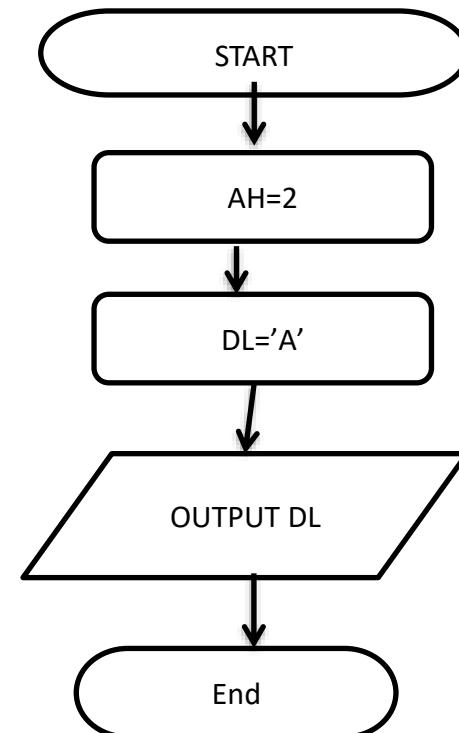
Algorithm steps

1. Store 02 service for display a character into AH register
2. Store character 'A' to DL register
3. Call dos I/O routine/interrupt
4. End program

Assembly Program

```
MOV AH,02h
MOV DL,41h
INT 21h

MOV AH,4ch; return to dos for better way
INT 21h
```



Exampe-03: Write an Assembly program for input a character from keyboard and Display character on the screen with algorithm and flowchart.

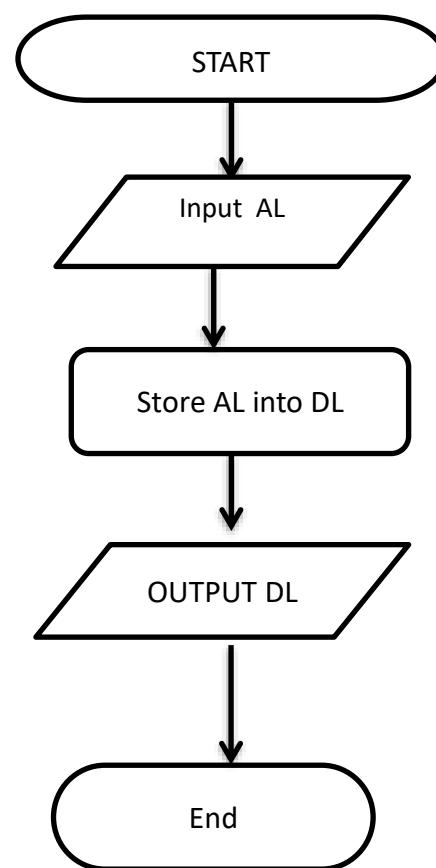
Algorithm steps

1. Store 01 service for input a character in to AH register
2. Input character into AL register
3. Call dos I/O routine/interrupt
4. Store AL into DL
5. Store 02 service into AH Register
6. Call dos I/O routine/interrupt
7. End program

Assembly Program

```
MOV ah,01h ; input one value of key
INT 21h

MOV AH,02h
MOV DL,AL
INT 21h
MOV AH,4ch; return to dos for better way
INT 21h
```



Example-04: Write an Assembly program for multiply 2-integer number and display result on the screen this program consist of one byte.

Algorithm steps

1. Store first value must be in AL register
2. Store second value in any available register here we use BL register
3. Multiply AL to BL
4. Store result must be in AL Register
5. Display result
6. End program

Assembly Program

```
MOV AL,03h      ; store 3 into AL register
MOV BL,02h      ; store 2 into BL register
MUL BL
MOV DL,AL
ADD DL,30H
MOV AH,02H
INT 21h
MOV AH,4ch; return to dos for better way
INT 21h
```



**Example-05: Write an Assembly program for Divide 2-integer number and display result on the screen
this program consist of one byte.**

<u>Algorithm steps and description</u>	<u>Assembly Program</u>
<ol style="list-style-type: none"> 1. Store dividend value must be in AL register 2. Store divisor value in any available register here we use BL register 3. Divide by BL to AL 4. Automatic Store quotient result must be in AL Register 5. Automatic store remainder result in AH register 6. Display result 7. End program 	<pre> MOV AL,07h ; store 7 into AL register MOV BL,03h ; store 3 into BL register DIV BL MOV DL,AL ; store AL(Quotient) value in DL MOV CL,AH ; store AH(remainder) value in CL ADD DL,30H ; display AL(Quotient) Value MOV AH,02H INT 21h MOV DL,0AH ; cursor move next line INT 21H MOV DL,0DH ; cursor move go-back 1st column INT 21H MOV DL,CL ; store CL(remainder) value in DL ADD DL,30H ; display DL(Remainder) Value MOV AH,02H INT 21h MOV AH,4ch; return to dos for better way INT 21h </pre>



Example-06: Write an Assembly program for Multiply 2-integer number and display result on the screen this program consist of one byte.

<u>Algorithm steps and description</u>	<u>Assembly Program</u>
<ol style="list-style-type: none"> 1. Store first operand value of must be in AL register for multiply 2. Store second operand value for multiply by register here we use BL register 3. Multiply by BL into AL 4. Automatic Store Answer /result must will be in AL Register 5. Display result 6. End program 	<pre> MOV AL,04h ; store 3 into AL register MOV BL,02h ; store 2 into BL register MUL BL MOV DL,AL ; store AL(Answer) value in DL ADD DL,30H ;add 30h in dl MOV AH,02H ; display (Answer value of DL) Value INT 21h INT 20h ; return to dos </pre>



Exercise

Theory Questions.

1. Define algorithm and flowchart and why we use.
2. How do work DIV and MUL Commands in assembly language for 8086 mp.

Practical Questions.

1. Write assembly code to input two-integer number for multiplication and display result on the screen with flowchart and algorithms.

Objective and MCQs:

1. Must be store dividend value in _____ register for 1 byte.
 - a) AL
 - b) BL
 - c) CL
 - d) DL
2. Must be store dividend value in _____ register for 2 bytes.
 - a) DX
 - b) CX
 - c) BX
 - d) AX
3. After In division operation quotient value will be store , in _____ register for one byte operation
 - a) AL
 - b) BL
 - c) CL
 - d) DL
4. After In division operation remainder value will be store , in _____ register for one byte operation
 - e) AL
 - f) BL
 - g) AH
 - h) DH
5. Function/Services store always in _____ register of any interrupts Number (INT).
 - a) BL
 - b) BH
 - c) AL
 - d) AH