1.a. i. **Add** Immediate Values

ii. Op1:= $(6D)_{16} = (01101101)_2$

Op2:= $(93)_{16} = (10010011)_2$

A = $(00)_{16} = (00000000)_2$

iii. Z = 1 ; C = 1 ; P = 0 ; S = 0

b. i. **Add** With **Carry**

ii. Op1:= $(7C)_{16} = (01111100)_2$

Op2:= $(95)_{16} = (10010101)_2$

A = $(12)_{16} = (00010010)_2$

iii. Z = 0 ; C = 1 ; P = 1 ; S = 0

c. i. Logical **And** Of Immediate Values

ii. Op1:= $(65)_{16} = (01100101)_2$

Op2:= $(CB)_{16} = (11001011)_2$

A = $(41)_{16} = (01000001)_2$

iii. Z = 0 ; C = 0 ; P = 1 ; S = 0

d. i. Logical **Or** Of Immediate Values

ii. Op1:= $(83)_{16} = (10000011)_2$

Op2:= $(9C)_{16} = (10011100)_2$

A = $(9F)_{16} = (10011111)_2$

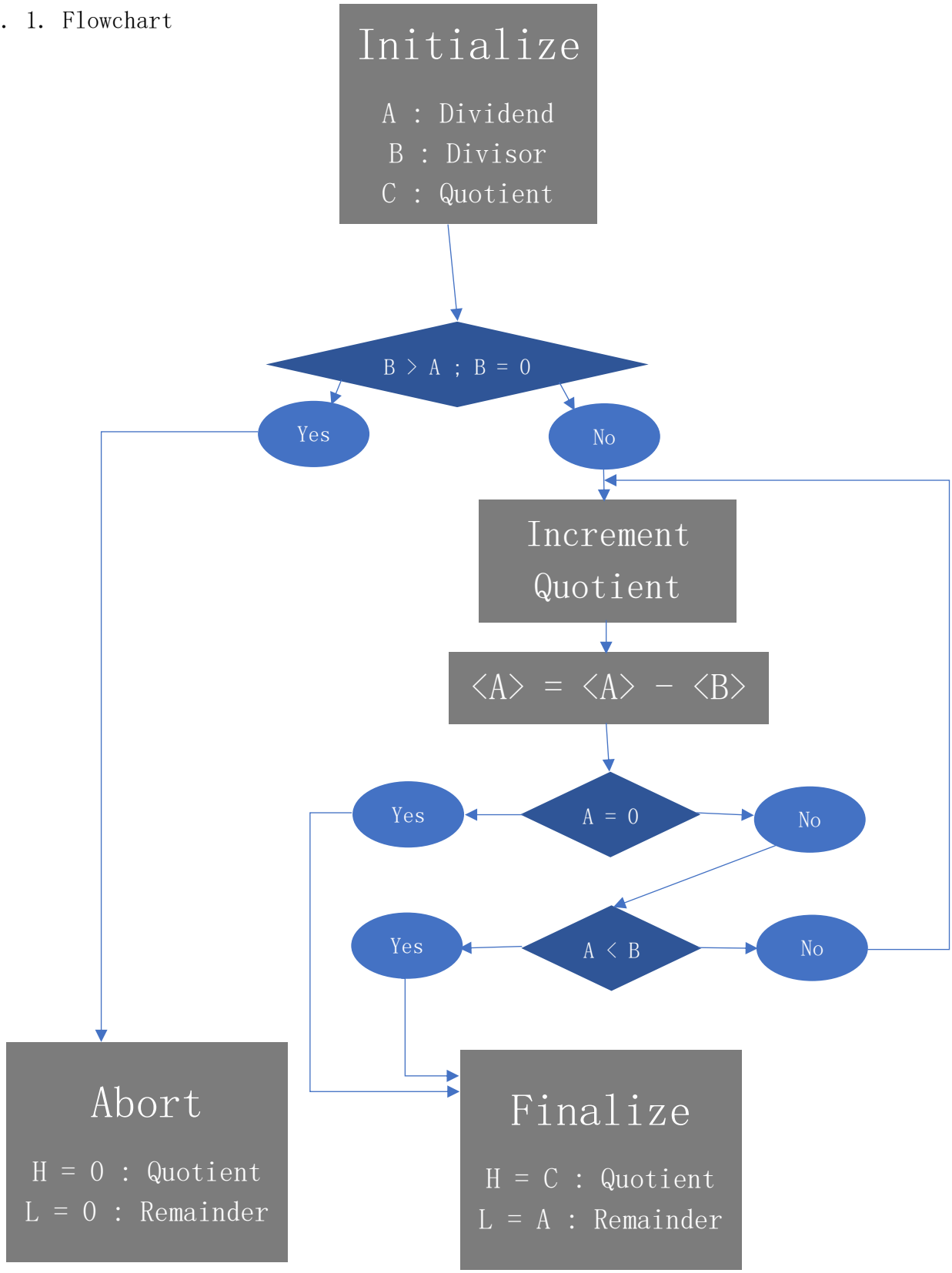
iii. Z = 0 ; C = 0 ; P = 1 ; S = 1

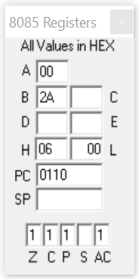
e. i. <C Register> + 5 = <C Register> ; <B Register> = 0

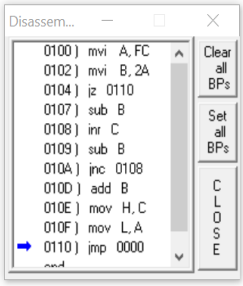
ii. C := $(2F)_{16}$; B := $(00)_{16}$

iii. Z = 1 ; C = 0 ; P = 0 ; S = 0

2. 1. Flowchart

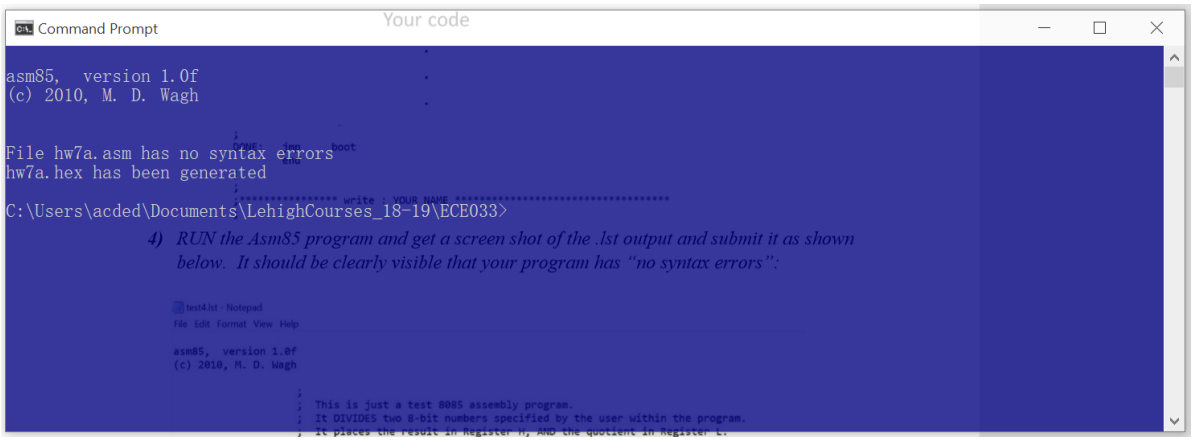






hw7a.asm

```
; This is just a test 8085 assembly program.
; It DIVIDES two 8-bit numbers specified by the user within the program.
; It places the result in register H, AND the quotient in Register L.
;
; CAUTION: Program considers that the Divident is Equal or Larger than the Divisor.
;
; CAUTION: IF DIVISOR IS 0H, THEN PROGRAM SHOULD SET BOTH H AND L TO 0H AND ABORT.
;
;************** write : AARON C. DEDITCH ****************************************
;
       boot    equ     0
       org     100h
;
INIT:  MVI     A, 0FCH ; Initialize:  <A> <- Divident
       MVI     B, 02AH ;              <B> <- Divisor
       JZ      DONE    ; Jump to Finish if B = 0
       SUB     B
DIVL:  INR     C
       SUB     B       ; Division Loop
       JNC     DIVL    ; Check If A is now the Remainder
FNLZ:  ADD     B
       MOV     H, C    ; Finalize:    <H> <- Quotient
       MOV     L, A    ;              <L> <- Remainder
;

DONE:  jmp     boot

       end

;

;

;************** write : AARON C. DEDITCH ****************************************

;
```

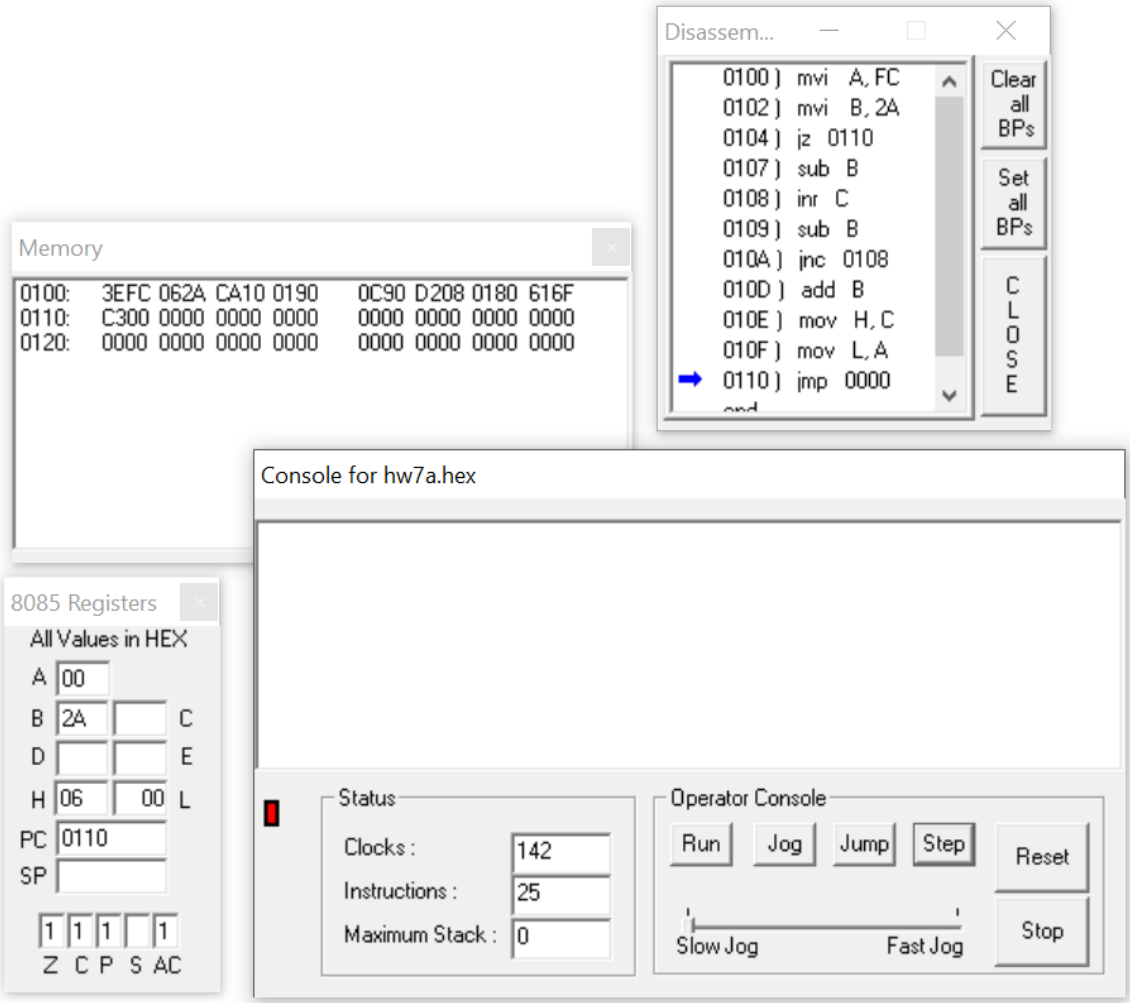


4) *RUN the Asm85 program and get a screen shot of the .lst output and submit it as shown below. It should be clearly visible that your program has "no syntax errors":*

hw7a.lst

```
asm85,  version 1.0f
(c) 2010, M. D. Wagh


                        ; This is just a test 8085 assembly program.
                        ; It DIVIDES two 8-bit numbers specified by the user within the program.
                        ; It places the result in register H, AND the quotient in Register L.
                        ;
                        ; CAUTION: Program considers that the Divident is Equal or Larger than the
Divisor.
                        ;
                        ; CAUTION: IF DIVISOR IS 0H, THEN PROGRAM SHOULD SET BOTH H AND L TO 0H
AND ABORT.
                        ;
                        ;*************** write : AARON C. DEDITCH
*****************************************
                        ;
                           boot    equ     0
                           org     100h
                        ;
0100    3EFC            INIT:      MVI     A, 0FCH ; Initialize:  <A> <- Divident
0102    062A               MVI     B, 02AH ;              <B> <- Divisor
0104    CA1001             JZ      DONE    ; Jump to Finish if B = 0
0107    90                 SUB     B
0108    0C              DIVL:      INR     C
0109    90                 SUB     B       ; Division Loop
010A    D20801             JNC     DIVL    ; Check If A is now the Remainder
010D    80              FNLZ:      ADD     B
010E    61                 MOV     H, C    ; Finalize:    <H> <- Quotient
010F    6F                 MOV     L, A    ;              <L> <- Remainder
                        ;
0110    C30000          DONE:      jmp     boot
                           end


      Symbol Table
boot            0000 (0)
divl            0108 (264)
done            0110 (272)
fnlz            010D (269)
init            0100 (256)
```

The file hw7a.asm has no syntax errors


Disassem...
0100) mvi A, FC
0102) mvi B, 2A
0104) jz 0110
0107) sub B
0108) inr C
0109) sub B
010A) jnc 0108
010D) add B
010E) mov H, C
010F) mov L, A
0110) jmp 0000
Clear all BPs
Set all BPs
CLOSE
Memory
0100: 3EFC 062A CA10 0190 0C90 D208 0180 616F
0110: C300 0000 0000 0000 0000 0000 0000 0000
0120: 0000 0000 0000 0000 0000 0000 0000 0000
Console for hw7a.hex
8085 Registers
All Values in HEX
A 00
B 2A C
D E
H 06 00 L
PC 0110
SP
1 1 1 1
Z C P S AC
Status
Clocks : 142
Instructions : 25
Maximum Stack : 0
Operator Console
Run
Jog
Jump
Step
Reset
Stop
Slow Jog
Fast Jog