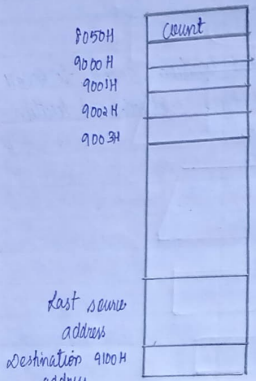
Problem specification :



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LARGEST AND SMALLEST OF AN ARRAY

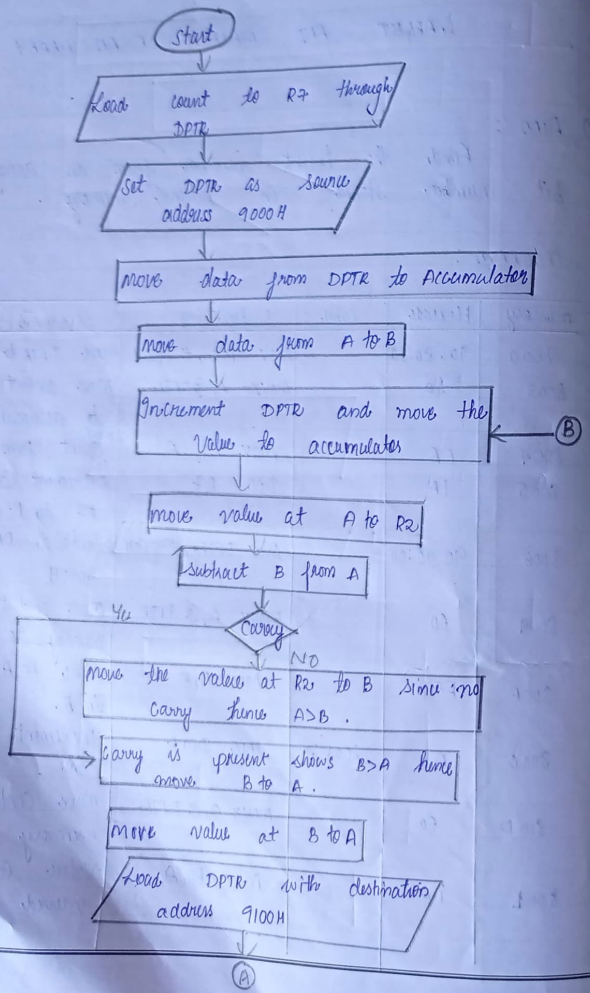
1) AIM :

Find the largest number from an array of 8 bit number stored in external memory.

PROGRAM :

Memory	Hexcode	Label	Instructions	Comments
8000	90:80:50		MOV DPTR, # 8050H	Move DPTR to 8050 H
8003	E0		MOVX A, @DPTR	Move content of 8050H to accumulator
8004	FF		MOV R7, A	Count from A to R7.
8005	1F		DEC R7	Decrement content of R7 by 1.
8006	90:90:00		MOV DPTR, #9000H	Initialise DPTR with 9000H
8009	E0		MOVX A, @ DPTR	Move content from memory to accumulator
800A	F5F0		MOV B, A	value in A is moved to B.
800C	A3	LOOP:	INC DPTR	Increment DPTR by one.
800D	E0		MOVX A, @ DPTR	Move content from memory to accumulator.
800E	FA		MOV R2, A	value in accumulator moved to R2.

Flow chart



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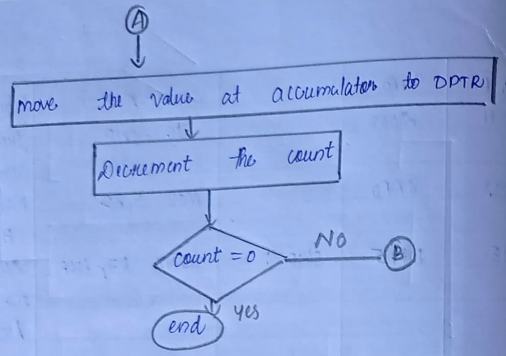
800F	95F0		SUBB A,B	Subtract B from A.
8011	4002		JC SKIP	Jump to skip if carry flag is one
8013	8AF0		MOV B,R2	move value of R2 to B.
8015	DFF5	SKIP :	DJNZ R7, LOOP	Decrement R7 by one and jump to Loop if value not equal to zero.
8017	E5F0		MOV A,B	Move value of B to A.
8019	90:91:00		MOV DPTR, #9100H	move DPTR to 9100H
801C	F0		MOVX @DPTR, A	move value of A to memory
801D	80FE	HERE	SJMP HERE	End program



OBSERVATION

Input		Output	
9000 H	- 07	Largest number	
9001 H	- 01		
9002 H	- 0A	9100 H	- 0A
9003 H	- 05		
9004 H	- 06		

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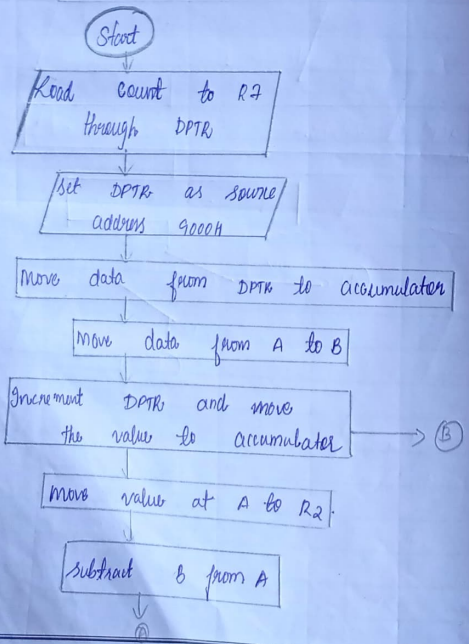
RESULT:

The largest number from the array of 8 bit number is 0A.

Problem specification

8050H – count
9000 H –
9001 H –
9002H
9003H
⋮
last source address
destination addrss – 9100H

Flow chart:



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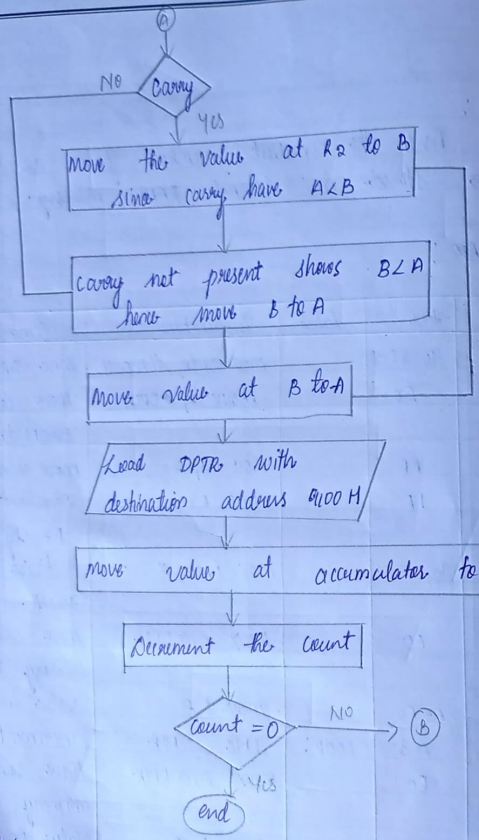
27 DIM:

Find the smallest number from an array of 8bit number stored in external RAM memory.

PROGRAM:

Memory	Hex	Label	Instruction	Comments
8000	90:80:50		MOV DPTR, #8050H	Move DPTR to 8050H
8003	E0		MOVX A, @DPTR	Move content of 8050H to accumulator
8004	FF		MOV R7, A	move count from A to R7
8005	1F		DEC R7	Decrement content of R7 by one.
8006	90:90:00		MOV DPTR, #9000	Initialise DPTR with 9000H.
8009	E0		MOVX A, @DPTR	Move content from memory to accumulator.
800A	F5F0		MOV B, A	Value in A moved to B.
800C	A3	LOOP:	INC DPTR	Increment DPTR by 1
800D	E0		MOVX A, @ DPTR	Move content from memory to A.
800E	FA		MOV R2, A	Value in A moved to R2.
800F	95F0		SUBB A, B	Subtract B from A
8011	5002		JNC Skip	Jump to skip if value not equal to 0.
8013	8AF0		MOV B, R2	move value of R2 to B.
8015	DFF5	Skip	DJNZ R7, LOOP	Decrement R7 by one and jump loop if value equal to zero
8017	E5F0		MOV A, B	Move value of B to A
8019	90:91:00		MOV DPTR, #9100H	Move DPTR to 9100H



Observation

Input

9000H – 07
9001H – 01
9002H – 0D
9003H – 05
9004H – 06

Output

Smallest number

9100H – 01

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BOIC	FO		MOVX MOVX @DPTR, A	Move value of A to memory.
~~FO TO~~				
BOLD	BOFE	HERE	SJMP HERE	End of program

RESULT:

The smallest number from the carry of 8 bit number is 01