8085 Programs

Addition of two nos

1. Write an assembly language program to add two 8 bit numbers stored at address 2050 and address 2051 in 8085 microprocessor. The starting address of the program is taken as 2000.(with carry)

LDA 2050H

MOV H, A

LDA 2051H

ADD H

MOV L,A

MVI A,00

ADC A

MOV H,A

SHLD 2050H

HLT

Write an assembly language program to sum two 8 bit numbers without using carry operation in 8085 microprocessor.

LDA 0050H

MOV B, A

LDA 0051H

ADD B

STA 0052H

HLT

Write a program to subtract two 8-bit numbers with or without borrow where first number is at **2500** memory address and second number is at **2501** memory address and store the result into **2502** and borrow into **2503** memory address.

Without borrow:

LDA 0050H

MOV H, A

LDA 0051H

SUB H

STA 0052H

RST 1

HLT

With borrow:

LDA 0050H

MOV H, A

LDA 0051H

SUB H

MOV L,A

MVI A,00h

SBB A

MOV H,A

SHLD 0055H

HLT

Multiplication of 8-bit

LDA 8500h

MOV B, A

LDA 8501h

MOV C, A

XRA A

LOOP: ADD B

DCR C

JNZ LOOP

STA 8502h

RST 1

HLT

Division of 8-bit

LDA 8501h

MOV B, A

LDA 8500h

MVI C,00

LOOP: CMP B

JC LOOP1

SUB B

INR C

JMP LOOP

LOOP1: STA 8502h

MOV A, C

STA 8502h

RST 1

HLT

1. Write an assembly language program to find the Greatest of 2 numbers.

Input : 2050 - 3

2051 - 15

Output: 2052 -15

LDA 2050H

MOV B,A

LDA 2051H

CMP B

JNC STORE

MOV A,B

STORE: STA 2052H

HLT

1. Write an assembly language program to find the Smallest of 2 numbers.

Input : 2050 - 3

2051 - 15

Output: 2052 -3

LDA 2050H

MOV B,A

LDA 2051H

CMP B

JNC STORE

STORE: MOV A,B

STA 2052H

HLT

1. Write an assembly language program to find the LCM of 2 numbers.

Input : 8000 - 3

8001 - 15

Output: 8050 -15

LXI H, 8000H

MOV C, M

MVI B, 00H

INX H

MOV A, M

CMA

MOV E, A

;MVI D, FFH

MOV A,B

CMA

MOV D,A

INX D

LXI H, 0000H

NEXT: DAD B

SHLD 8050H

LOOP: DAD D

JNC SKIP

MOV A, H

ORA L

JZ EXIT

JMP LOOP

SKIP: LHLD 8050H

JMP NEXT

EXIT: LHLD 8050H

HLT

1. Write an assembly language program to find the GCD of 2 numbers.

Input : 8000 - 3

8001 - 15

Output: 8050 -3

LXI H,8000H

MOV A, M

INX H

MOV B, M

LOOP: CMP B

JZ STORE

JC EXG

SUB B

JMP LOOP

EXG: MOV C,B

MOV B, A

MOV A, C

JMP LOOP

STORE: STA 8050H

HLT

1. Write an assembly language program to arrange numbers in Ascending order.

Input: 3500 - 5

3501 - 2

3502 - 4

3503 - 7

3504 - 8

3505 - 1

3506 - 3

Output: 3500 to 3506 - sorted nos

LOOP: LXI H,3500H

MVI D,00

MVI C,05

LOOP1: MOV A,M

INX H

CMP M

JC LOOP2

MOV B,M

MOV M,A

DCX H

MOV M,B

INX H

MVI D,01

LOOP2: DCR C

JNZ LOOP1

MOV A,D

RRC

JC LOOP

HLT

1. Write a program to convert Decimal number to Hexadecimal number
2. Write a program to convert Binary to Octal number
3. Write an assembly language program to find factorial of the given number.

Input : 8000 - 4

Output : 8001 - 24

LXI H, 8000H

MOV B,M

MVI D, 01H

FACT: CALL MUL

DCR B

JNZ FACT

INX H

MOV M,D

HLT

MUL: MOV E,B

XRA A

ML: ADD D

DCR E

JNZ ML

MOV D,A

RET

HLT

1. Write an assembly language program to find the largest number in an array.

Input: 8000 - 5

8001 - 2

8002 - 4

8003 - 7

8004 - 8

8005 - 1

8006 - 3

Output: 8200 - largest no

LXI H,8000H

MOV C, M

INX H

MOV B, M

DCR C

LOOP: INX H

MOV A, M

CMP B

JC SKIP

MOV B, A

SKIP: DCR C

JNZ LOOP

LXI H,8200H

MOV M, B

HLT

1. Write a program to convert Decimal to Hexadecimal number

Input 802B-52 output 802C-34

LXI SP,80FFH

LXI H, 802BH

LXI B, 802CH

MOV A, M

CALL BCDBIN

STAX B

HLT

BCDBIN: PUSH B

MOV B, A

ANI 0FH

MOV C, A

MOV A, B

ANI 0F0H

RRC

RRC

RRC

RRC

MOV D, A

XRA A

MVI E, 0AH

SUM: ADD E

DCR D

JNZ SUM

ADD C

POP B

RET

1. Write an assembly language program to find the given 8-bit number is Prime or not using 8085 processor.

Input : 8100 - 5

Output : 8101 - 2

LXI H,8100H

MOV A,M

MVI C,00

MOV D,A

MOV E,A

L2: MOV B,D

L1: CMP B

JC LABEL

SUB B

JNZ L1

LABEL: CPI 00

JNZ SKIP

INR C

SKIP: MOV A,E

DCR D

JNZ L2

MOV A,C

STA 8101H

HLT

1. Write an assembly language program to find the given 8-bit number is Odd or Even using 8085 processor.

Input : 2050 - 4

Output : 2051 - 22

LDA 2050H

ANI 01

JZ LOOP1

MVI A,11

JMP LOOP2

LOOP1: MVI A,22

LOOP2: STA 2051H

HLT

1. Write an assembly language program to find the given 8-bit number is Positive or Negative using 8085 processor.

Output : 2501 - 22

MVI A,9AH

ANI 80H

JZ NEG

MVI A,22

JMP STO

NEG: MVI A,11

STO: STA 2501H

HLT

1. Write an assembly language program to find the Minimum number in an array.

Input: 8000 - 5

8001 - 2

8002 - 4

8003 - 7

8004 - 8

8005 - 1

8006 - 3

Output: 8200 -smallest no

LXI H,8000H

MOV C, M

INX H

MOV B, M

DCR C

LOOP: INX H

MOV A, M

CMP B

JNC SKIP

MOV B, A

SKIP: DCR C

JNZ LOOP

LXI H,8200H

MOV M, B

HLT

1. Write an assembly language program to find 1’s complement of 8-bit number.

Input : 8000 - 4

Output : 8050 - 1’s complement of 4

LDA 8000H

CMA

STA 8050H

HLT

1. Write an assembly language program to find 2’s complement of 8-bit number.

Input : 8000 - 4

Output : 8051 - 2’s complement of 4

LDA 8000H

CMA

STA 8050H

INR A

STA 8051H

HLT

1. Write an assembly language program to arrange numbers in Descending order.

Input: 3500 - 5

3501 - 2

3502 - 4

3503 - 7

3504 - 8

3505 - 1

3506 - 3

Output: 3500 to 3506 - sorted nos

LOOP: LXI H,3500H

MVI D,00

MVI C,05

LOOP1: MOV A,M

INX H

CMP M

JNC LOOP2

MOV B,M

MOV M,A

DCX H

MOV M,B

INX H

MVI D,01

LOOP2: DCR C

JNZ LOOP1

MOV A,D

RRC

JC LOOP

HLT

28. Write an assembly language program to Logical AND Operation

MVI A, 15

MVI B, 7

ANA B

STA 2500

HLT

28. Write an assembly language program to Logical OR Operation

MVI A, 8

MVI B, 7

ORA B

STA 2500

HLT

28. Write an assembly language program to Exclusive OR Operation

MVI A, 7

MVI B, 6

XRA B

STA 2500

HLT

28. Write an assembly language program to ROTATE LEFT OPERATION

MVI A, 04

RLC

RLC

RLC

RLC

STA 2000

HLT

1. Write an assembly language program to convert hexadecimal to Decimal(BCD)

Input 8000-34 output 8050-52

LXI H,8000H

MVI D,00H

XRA A

MOV C, M

LOOP: ADI 01H

DAA

JNC SKIP

INR D

SKIP: DCR C

JNZ LOOP

MOV L, A

MOV H, D

SHLD 8050H

HLT