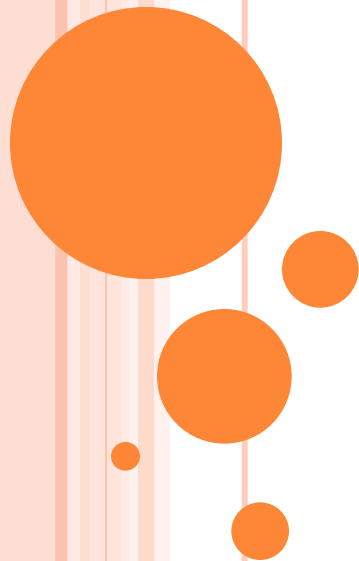


CODE CONVERSIONS

LECTURE 5



MULTIPLICATION

A multiplicand is stored in memory location XX50H and multiplier is stored in location XX51H. WAP to transfer the two numbers from memory locations to the HL registers and store the product in the output buffer at XX90H. Write a subroutine to multiply two unsigned numbers placed in registers H and L. Return the result to HL pair.

PROGRAM:

```
LXI SP,STACK  
LHLD XX50H  
XCHG  
CALL MLTPLY  
SHLD XX90H  
HLT
```



(CONT.)

MLTPLY:	MOV A,D
	MVI D,00H
	LXI H,0000H
	MVI B,08H
NXTBIT:	RAR
	JNC NOADD
	DAD D
NOADD:	XCHG
	DAD H
	XCHG
	DCR B
	JNZ NXTBIT
	RET



SUBTRACTION WITH CARRY

LXI D,2050H

LXI H,2080H

MVI B,05 H

NEXT: CALL SBTRAC

INX D

INX H

DCR B

JNZ NEXT

HLT

SBTRAC: MOV A,M; A

XCHG

SUB M



SUBTRACTION WITH CARRY(CONT.)

```
MOV M,A  
XCHG  
INX H  
INX D  
MOV A,M  
XCHG  
SBB M  
CC INDIKET  
MOV M,A  
RET
```

- A set of five 16 bit readings of the current consumption of industrial control units is monitored by meters and stored at memory locations starting at xx50H, followed by the higher order byte.
- The corresponding maximum limits for each control unit are stored starting at XX90H. Subtract each reading from its specified limit, and store the difference in place of the readings.
- If any reading exceeds the maximum limit, call the indicator routine and continue checking.

