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Roll: 5 , Sec: H

1.

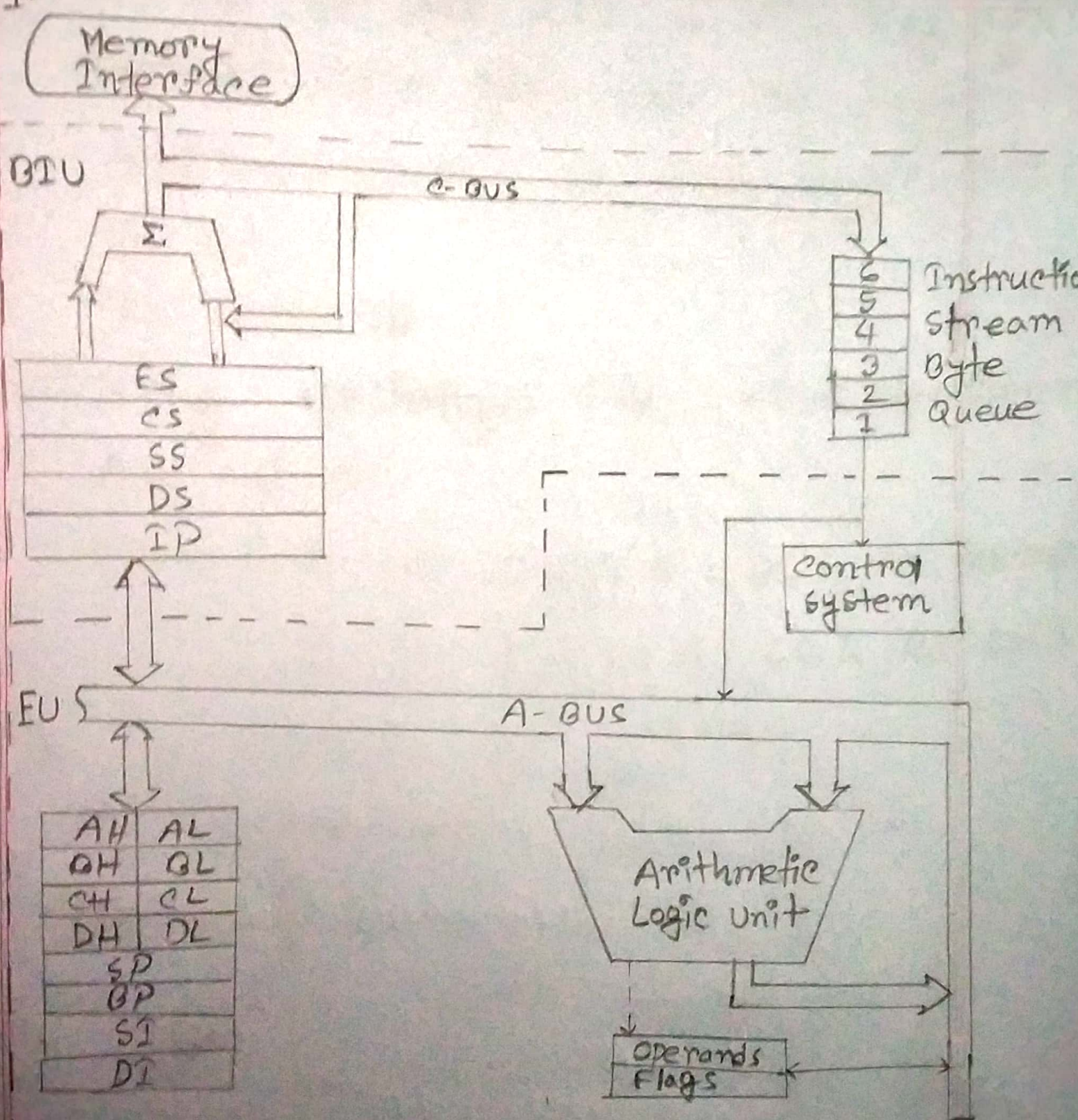


Fig: 80386 internal block diagram.

2. AX and BX both are 16 bits long data registers. Here AH holds the higher ⁸ bits of AX. And BL holds lower ⁸ bits of BX.

$$BL = 10110110B$$

Xchg exchanges the value between AH and BL

Therefore $AH = 10110110B = B6h$, $AX = B699h$
 $BL = 01100110B = 66h$, $BX = 2A66h$

3. $CX = ABC0h$, $DX = 2BB0h$

$$\begin{array}{r} ABC0h \\ - 2BB0h \\ \hline 8010h \end{array}$$

So, $CX = 8010h$

$DX = 2BB0h$

4. $AX = 6699h$, $BX = 2AB6h$

MUL AL means $AX = AL(\text{fixed}) * AL$

So, $AX = 99 \times 99$

$$\begin{array}{r} 99 \\ 99 \\ \hline 561 \\ 561 \times \\ \hline 5071 \end{array}$$

$$\begin{array}{r} 16|81 \\ \hline 5 \rightarrow 1 \end{array}$$

$$\begin{array}{r} 16|86 \\ \hline 5 \rightarrow 6 \end{array}$$

$\therefore AX = 5071h$

$BX = 2AB6h$ (Unchanged)

5. $AX = A009h$, $BX = 2AB6h$

INC BH increments the value of BH by 1

$BH = 2A$

$\therefore BH = 2A + 1 = 2B$

So, $BX = 2BB6h$

$AX = A309h$ (unchanged)

6. $AX = AB09h$, $CX = 4$

CX is loop counter

the loop will execute for 4 times

$AL = AL + 2 = 09h + 2 = 0B$, $AX = AB0Bh$

then $CX = 3$

$AX = AB0Dh$, $CX = 2$

$AX = AB0Fh$, $CX = 1$

$AX = AB11h$, $CX = 0$ Am.

7. $AX = 0002h$, $CX = 0004h$

$MUL\ CX$.

$AX = 0002h \times 0004h = 0008h$

$CX = 0004h$

$DX = 0000h$