

AAA (Ascii adjust after addition).

1) Case:  $AL = 57_{10}$ .

A lower nibble of  $AL = 7 < 9$ .

so upper nibble of  $AL$  will be  $0H$ .

no change of lower nibble of  $AL$ .

so  $AL = 07_{10}$ .

2) Case:  $AL = 5A_{10}$ .

lower nibble of  $AL = A(10) > 9$ .

so  $A + 6$

$AL = 1010 + 0110$  (BCD)

$AL = 10000$  in binary.

$AL = 10H$ .

higher nibble of  $AL$  will be  $0$ .

lower nibble of  $AL$  will be unchanged.

so  $AL = 00H$ .

$AH = 00H$  previously.

$AH$  after AAA  $(00 + 1)H$ .

$= 01H$ .

so  $AX = AH:AL$ .

$= \underline{0100H}$ .

8	4	2	1
1	0	1	0
0	1	1	0
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1	0	0	0

b) Case :

sub AH, AH = 0h.

ascii addition.

AL = '6' + '7'

= 36h + 37h.

= 6Dh.

lower nibble of AL is D > 9 (13).

AL = 12 + 6

= 1101 + 0110,

= 13h.

1101  
0110  
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1001

~~lower~~ upper nibble of AL will be 0h.

lower nibble of AL will be unchanged.

AL = 03h.

AH = 01

AX = 0103h.

'0' = 30h.

'1' = 31h.

'2' = 32h.

'3' = 33h.

'4' = 34h.

'5' = 35h.

'6' = 36h.

'7' = 37h.

$$AX = 0103H.$$

$$'0' = 30H.$$

$$'1' = 31H.$$

$$'0' = 30H.$$

$$'3' = 33H.$$

$$AX = 3133H. \text{ or } 3030H.$$

$$AX = 3030H.$$