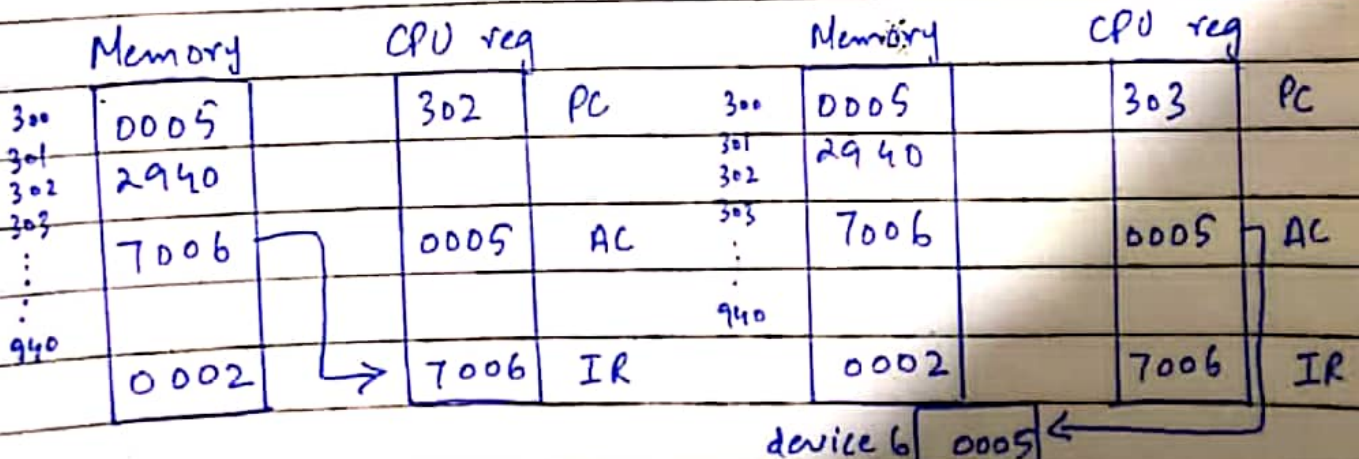
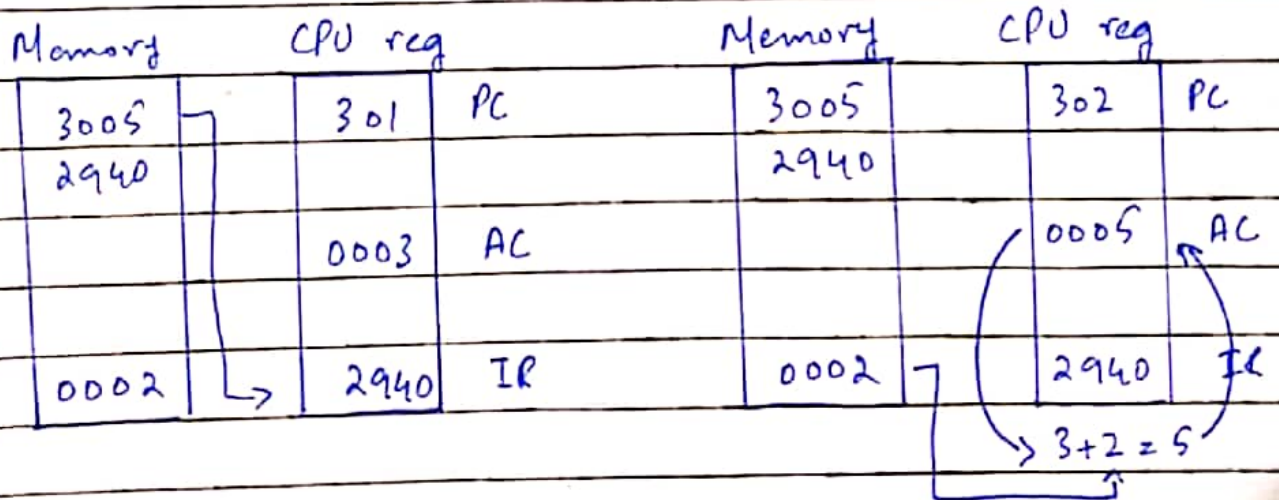
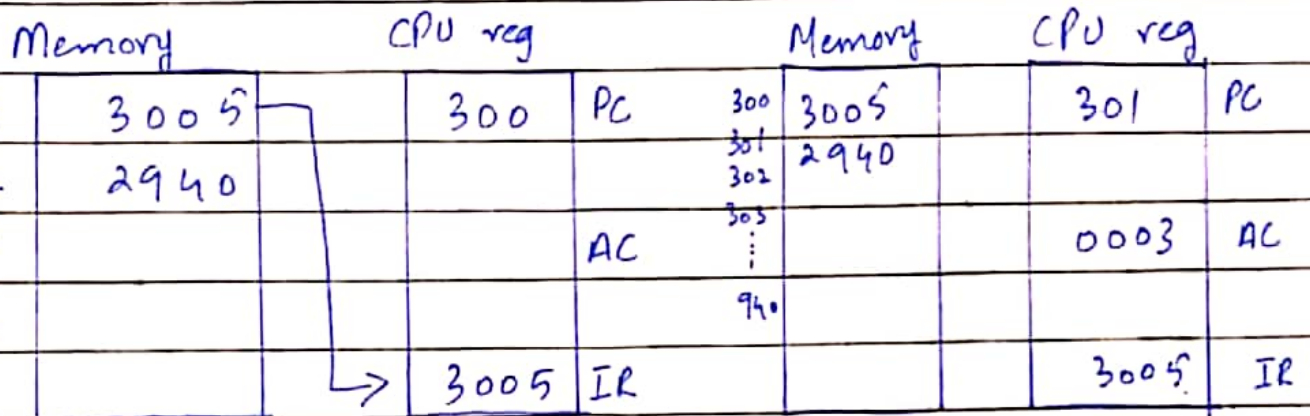


Muhammad Saud Shakeel

19PWCSE1851, Sec: C

Assignment # 1

1. Load AC from device 5
2. Add contents to memory location 940
3. Store AC to device 6



device 6 0005

Muhammad Saad Shakeel

19PWCSE1851, Sec: C

Assignment # 2

$$x = 0100$$

$$(x = 4)$$

$$y = 1010$$

$$(y = -6)$$

i) Add y and x

$$y = 1010$$

$$+ x = 0100$$

$$\hline 1110$$

$$\text{i.e. } -6 + 4 = -2 \quad \text{and } (1110)_2 = (-2)_{10}$$

ii) Sub x from y

$$y = 1010$$

$$x = 0100$$

$$-x = 1100$$

$$y = 1010$$

$$+ (-x) = 1100$$

$$\hline 10110$$

$$\text{i.e. } 12 + (-6) = 12 - 6 = 6 \quad \text{and } (0110)_2 = (6)_{10}$$

$$x \text{ ————— } x$$

Muhammad Saud Shakeel

19PWCSE1851, Sec: C

Assignment # 3

$M = \text{divisor} = 00011$

$Q = \text{dividend} = 01000$

A	Q	Initial value
00000	01000	

00000	10000	Shift
+ 11101		
11101	10000	$A = A - M$
+ 00011		
1:00000	10000	$Q_0 = 0, A = A + M$

(1)

00001	00000	Shift
+ 11101		
11110	00000	$A = A - M$
+ 00011		
1:00001	00000	$Q_0 = 0, A = A + M$

(2)

00010	00000	Shift
+ 11101		
11111	00000	$A = A - M$
+ 00011		
1:00010	00000	$Q_0 = 0, A = A + M$

(3)

00100	00000	Shift
+ 11101		
1:00001	00000	$A = A - M$
00001	00001	$Q_0 \rightarrow 1$

(4)

Date

00010	00010	Shift	} ⑤
+ 11101			
11111	00010	$A = A - M$	
+ 00011			
1:00010	00010	$Q_0 = 0, A = A + M$	

Quotient = $Q = 00010$
 Remainder = $A = 00010$

$$\begin{array}{r} 2 \\ 3 \overline{) 8} \\ \underline{6} \\ 2 \end{array}$$

X ————— X

M = Multiplicand = 11000

Q = Multiplier = 11101

A	Q	Q ₋₁	M	
00000	11101	0	11000	
+ 01000				
01000	11101	0	11000	$A = A - M$
00100	01110	1	11000	Shift } ①

00100	01110	1	11000	
+ 11000				
11100	01110	1	11000	$A = A + M$
11110	00111	0	11000	Shift } ②

11110	00111	0	11000	
+ 01000				
1:00110	00111	0	11000	$A = A - M$

Date: / /

Day: MTWTFS

00011

00011

1

11000

shift (3)

00001

10001

1

11000

shift (4)

00000

11000

1

11000

shift (5)

$$(-8) \times (-3) = 24$$

$$(0000011000)_2 = (24)_{10}$$

X ————— X