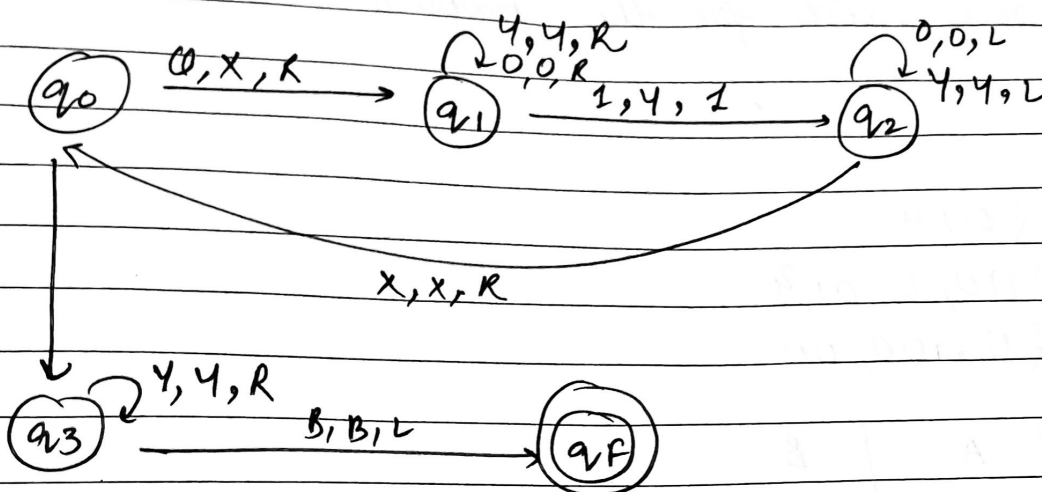
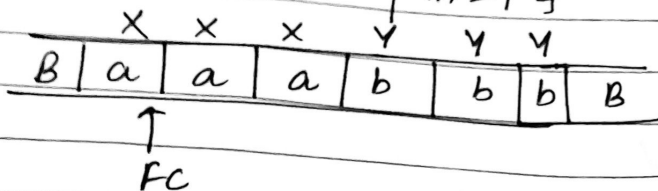


# Assignment: 4

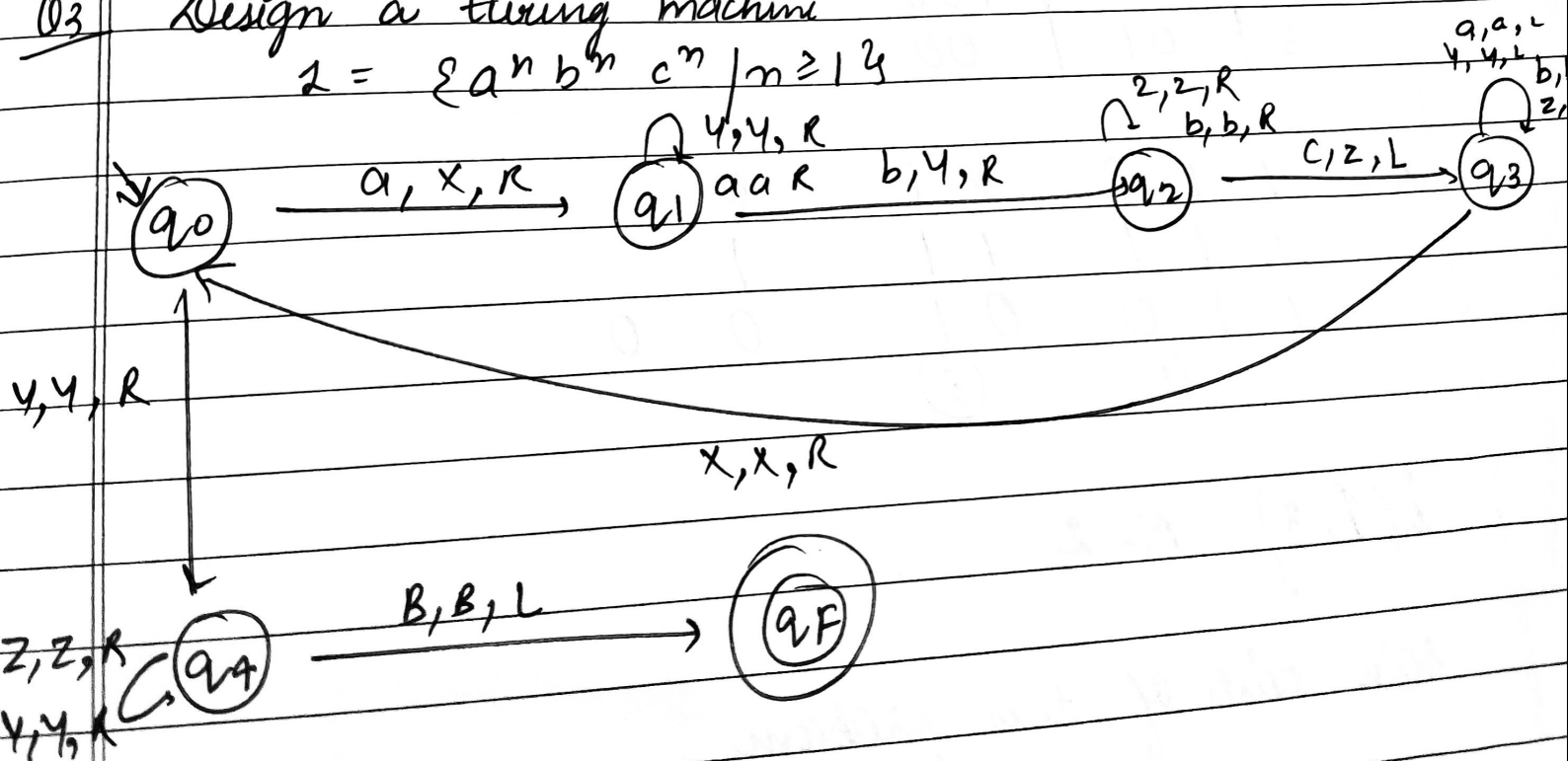
Q2 Design Turing machine

$$L = \{0^n 1^n \mid n \geq 1\}$$



Q3 Design a Turing machine

$$L = \{a^n b^n c^n \mid n \geq 1\}$$



Q4

i	A	B
1	00	0
2	001	11
3	1000	011

A = 001  
 0011

list not matched  
 No soln exists for this problem

Q5

PCP

$\Sigma = \{0, 1\}$

A = {110, 0, 01}

B = {11, 100, 00}

i	A	B
1	110	11
2	0	100
3	01	00

A = 1 1 0 0 1 0  
 1 1 1 1 1  
 1 1 0 0 1 0 0  
 (1) (3)

$i(1, 3) \quad M=2$

soln exists of this problem.

Q. 6

$$A = \{100, 0, 1\}$$

$$B = \{1, 100, 00\}$$

i	list A	list B
1	100	1
2	0	100
3	1	00

$$A = 10010$$

$$B = 100100$$

(1) (3)

$$i(1, 3)$$

$$M = 2$$

solution exist for this problem

Q. 13

$$A = b, bab^3, ba$$

$$B = b^3, ba, a$$

i	A	B
1	b	bbb
2	babbb	ba
3	ba	a

$$A = babbbbbb a$$

$$B = babbbbbb a$$

(2) (1) (1) (3)

$$i(2, 1, 3)$$

$$M = 4$$

solu<sup>n</sup> exist for this problem