

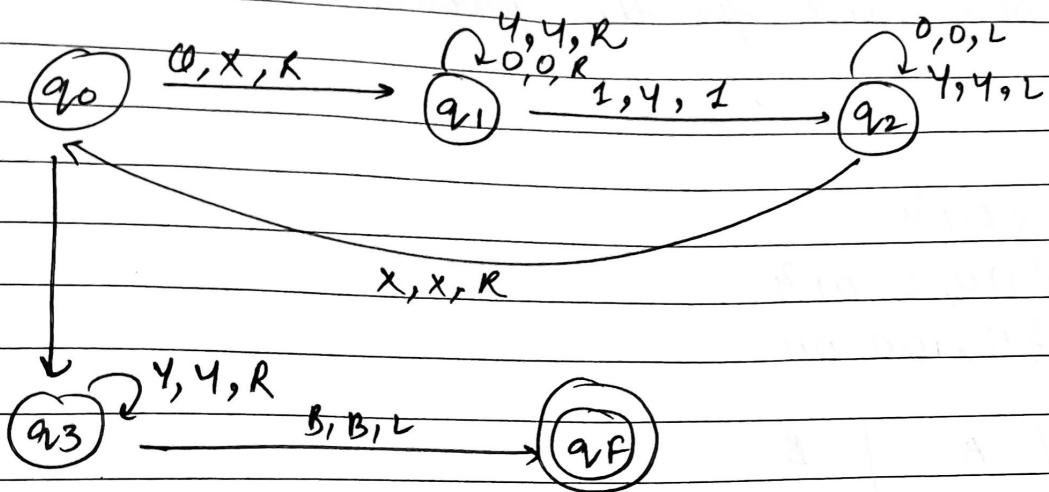
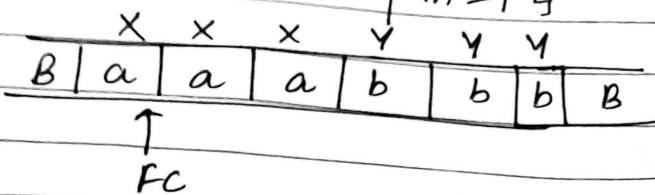
Assignment : 4

classmate
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Q2

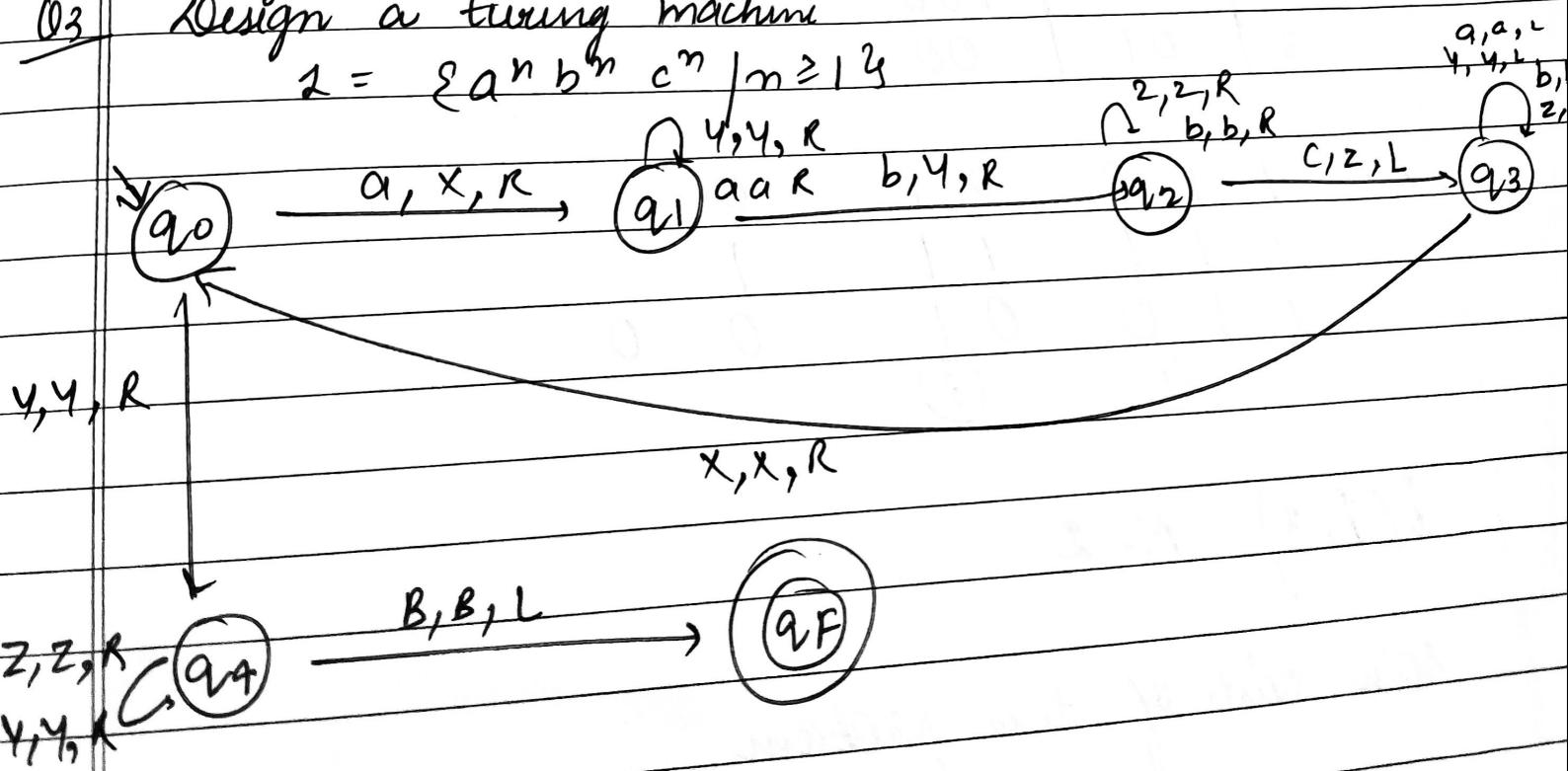
Design turing machine

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



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

$$A = \begin{array}{|ccc|} \hline & 0 & 0 \\ \hline & | & | \\ & 0 & 0 & 1 \\ \hline \end{array}$$

list not matched
No soln exists for this problem

Q5 PCP

$$\Sigma = \{0, 1\}^3$$

$$A = \{110, 0, 01\}^3$$

$$B = \{11, 100, 00\}$$

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

$$A = \begin{array}{ccccc} 1 & 1 & 0 & 0 & 1 \\ 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 0 & 0 & 1 \\ \hline \textcircled{1} & & & \textcircled{3} & \end{array}$$

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

sln 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

$$A = 10010$$

$$B = \frac{100100}{(1)(3)}$$

2/3

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

solution exist for this
problem

Q 13

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

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

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

$$A = babbb \quad bbb \quad a \quad i(2, 11, 3)$$

$$B = babb \quad bbb \quad a \quad M = 4$$

soluⁿ exist for this problem