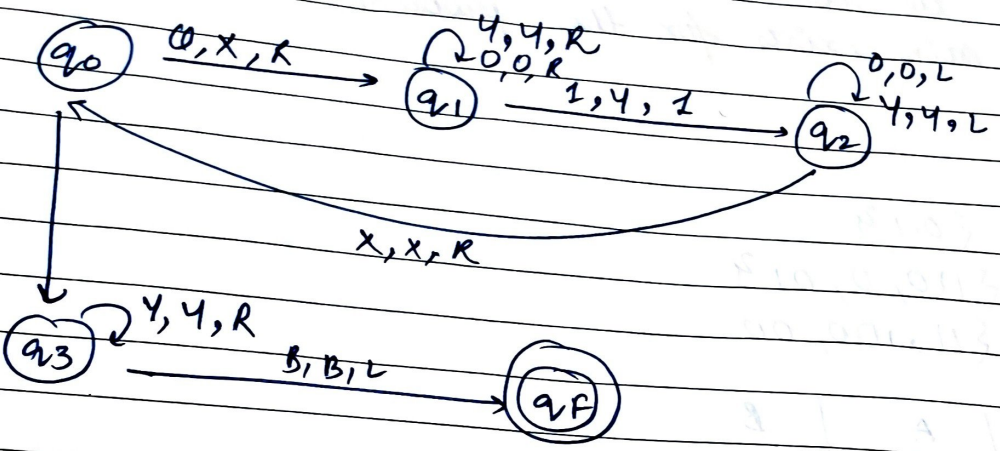
Assignment: 4

Q2. Design turing machine

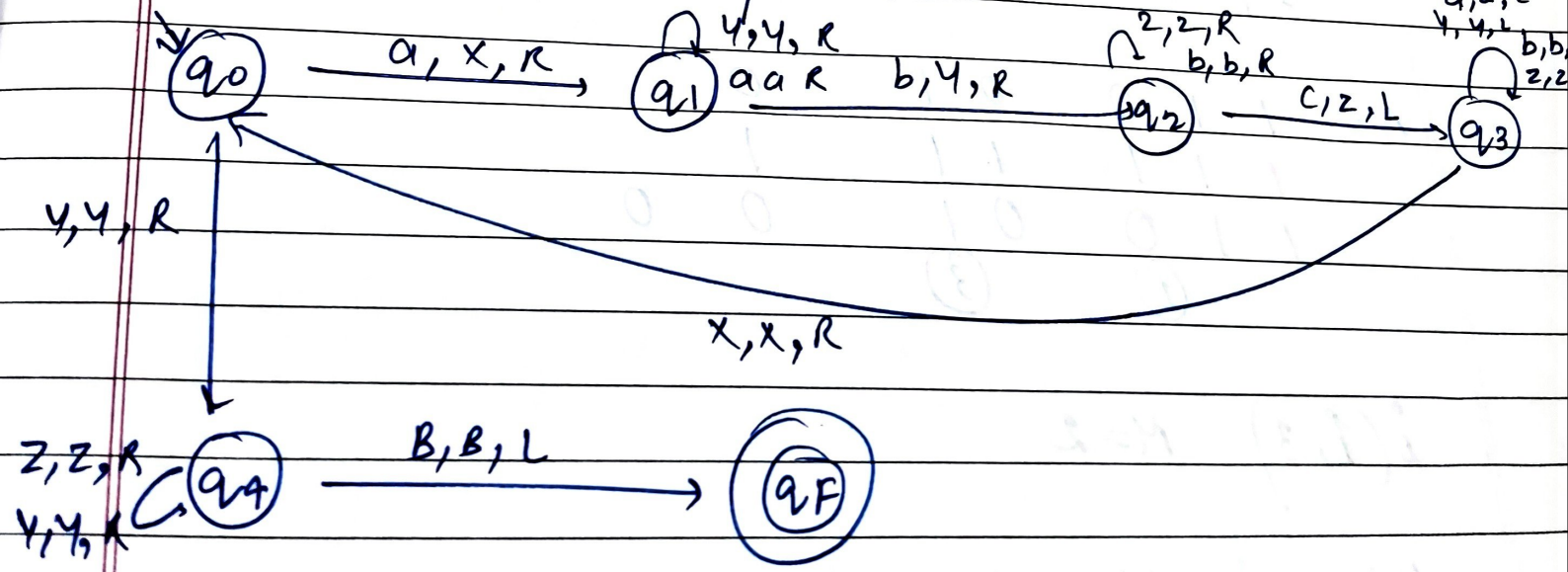
$L = \{0^n 1^n \mid n \geq 1\}$

	X	X	X	Y	Y	Y	
B	a	a	a	b	b	b	B
	↑						
	FC						



Q3. Design a turing machine

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



Q4

	A
i	00
a	001
s	1000

A
0
11
011

A = 0 0 1
0 0 1 1

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
① ③

i (1, 3) 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 = 1 00 1 0

B = 1 00 1 00
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 = ba bbb bbb a i (2, 1, 1, 3)

B = ba bbb bbb a M = 4
② ① ① ③

Solu^n exist for this problem