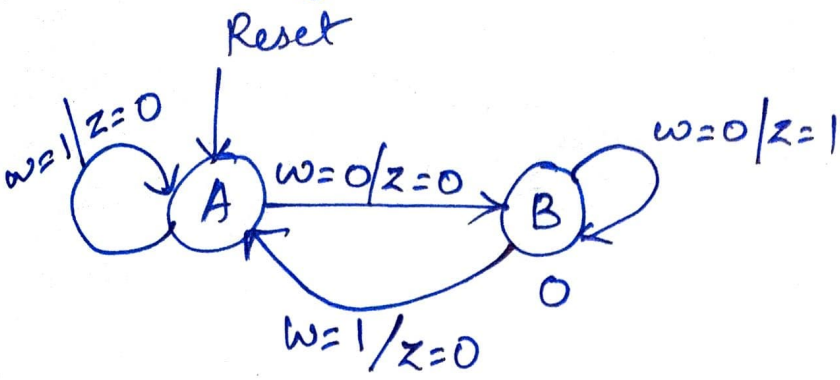
Mealy : 00



0 → B

A ; w=1

1 x

So 'A'

B ; w=1

01 x → not '00'
so z≠1

↓

1 x

So 'A'

B ; w = 0

00 x → '00'. So
z=1

↓

0 ✓ → ('B')

State Table

Present state	Next state		Output z	
	w=0	w=1	w=0	w=1
A	B	A	0	0
B	B	A	1	0

State Assigned Table.

	Present state y	Next state w=0 Y	Next state w=1 Y	Output z w=0	Output z w=1
A	0	1	0	0	0
B	1	1	0	1	0

Y

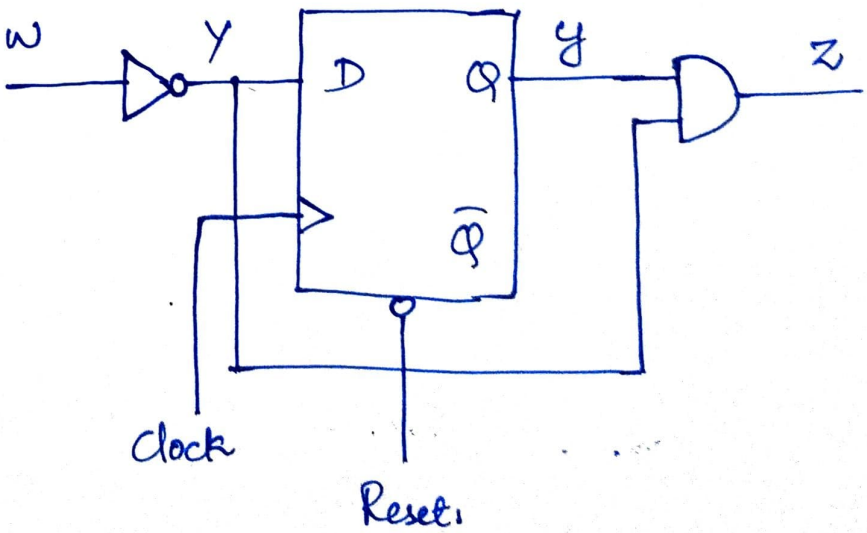
w \ y	0	1
0	1	1
1	0	0

$Y = \bar{w}$

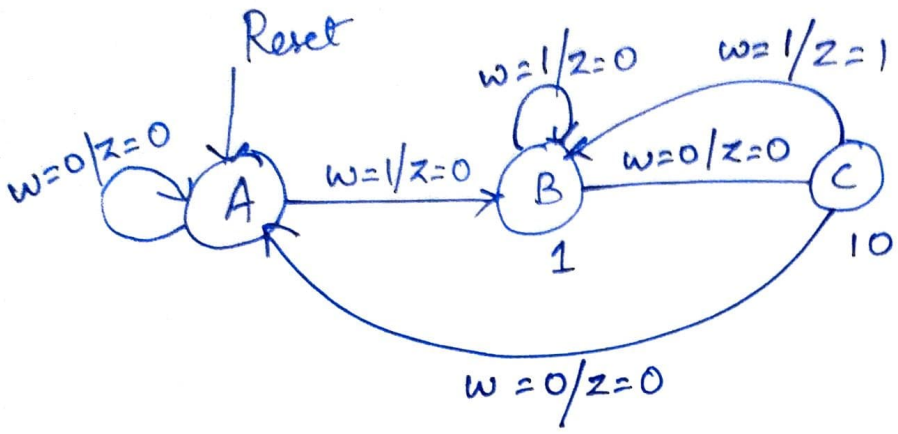
Z

w \ y	0	1
0	0	1
1	0	0

$Z = \bar{w}y$



Mealy : 101



1 → B

10 → C

A; w=0

0 x → A.

B; w=1

x1 ✓ → B

C; w=0

x00 x → A

C; w=1

x01 ✓ → B

State Table.

Present State	Next State		Output z	
	w=0	w=1	w=0	w=1
A	A	B	0	0
B	C	B	0	0
C	A	B	0	1

State Assigned Table.

	Present state	Next state		Output z	
		w=0	w=1	w=0	w=1
	$y_2 y_1$	$Y_2 Y_1$	$Y_2 Y_1$		
A	0 0	0 0	0 1	0	0
B	0 1	1 0	0 1	0	0
C	1 0	0 0	0 1	0	1
	1 1	d d	d d	d	d

Y_2

w \ y_2y_1	00	01	11	10
0	0	1	d	0
1	0	0	d	0

$Y_2 = \bar{w} y_1$

Y_1

w \ y_2y_1	00	01	11	10
0	0	0	d	0
1	1	1	d	1

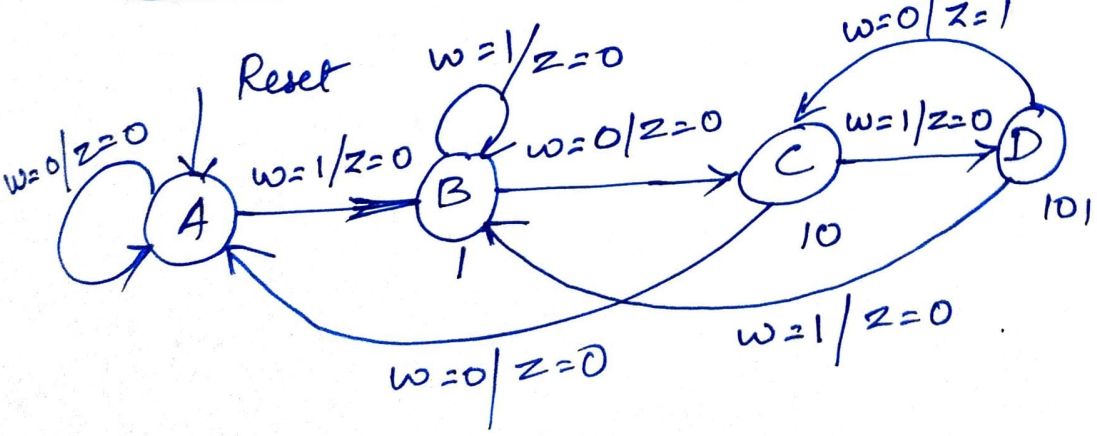
$Y_1 = w$.

Z

w \ y_2y_1	00	01	11	10
0	0	0	d	0
1	0	0	d	1

$Z = w y_2$.

Mealy; 1010.



1 → B
10 → C
101 → D

B; w = 1

✗1 ✓ → B

C; w = 0

✗Ø0✗ → A

D; w = 0

✗Ø10 → z = 1

↓

✓C

D; w = 1

✗Ø✗1

Home work.

1.) Design Sequence detectors (Mooze).

a.) 010 , b.) 0110 , c.) 1011001

2.) Design sequence detectors (Mooze) for the sequence 111. Use One hot Encoding.

3.) Design Mealy FSMs for all the cases given in questions 1 and 2.