과제 3_201810912_김연출

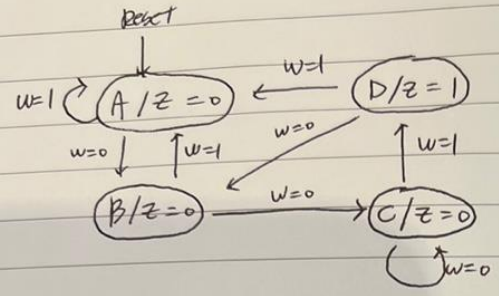
No.

2018/09/12 김연출.

숙제한 과제 3

'001' detector에 대해서.

1) Moore type state diagram.



2) Moore type state table.

present state	next state w=0	next state w=1	output z
A	B	A	0
B	C	A	0
C	C	D	0
D	B	A	1

3) Moore type state assigned table

present state	x_2 x_1	next state w=0 Y_2 Y_1	next state w=1 Y_2Y_1	output z
A	0 0	0 1	00	0
B	0 1	1 0	00	0
C	1 0	1 0	11	0
D	1 1	0 1	00	1

No.

4. D flip-flop.

$Y_1 =$

w \ Y_2Y_1	00	01	11	10
0	1	*	1	0
1	0	0	0	1

$Y_2 =$

w \ Y_2Y_1	00	01	11	10
0	0	1	0	1
1	0	0	0	1

$= Y_2'Y_1'w' + Y_2Y_1w' + Y_2Y_1'w$

$= w'(Y_2'Y_1' + Y_2Y_1) + Y_2Y_1'w$

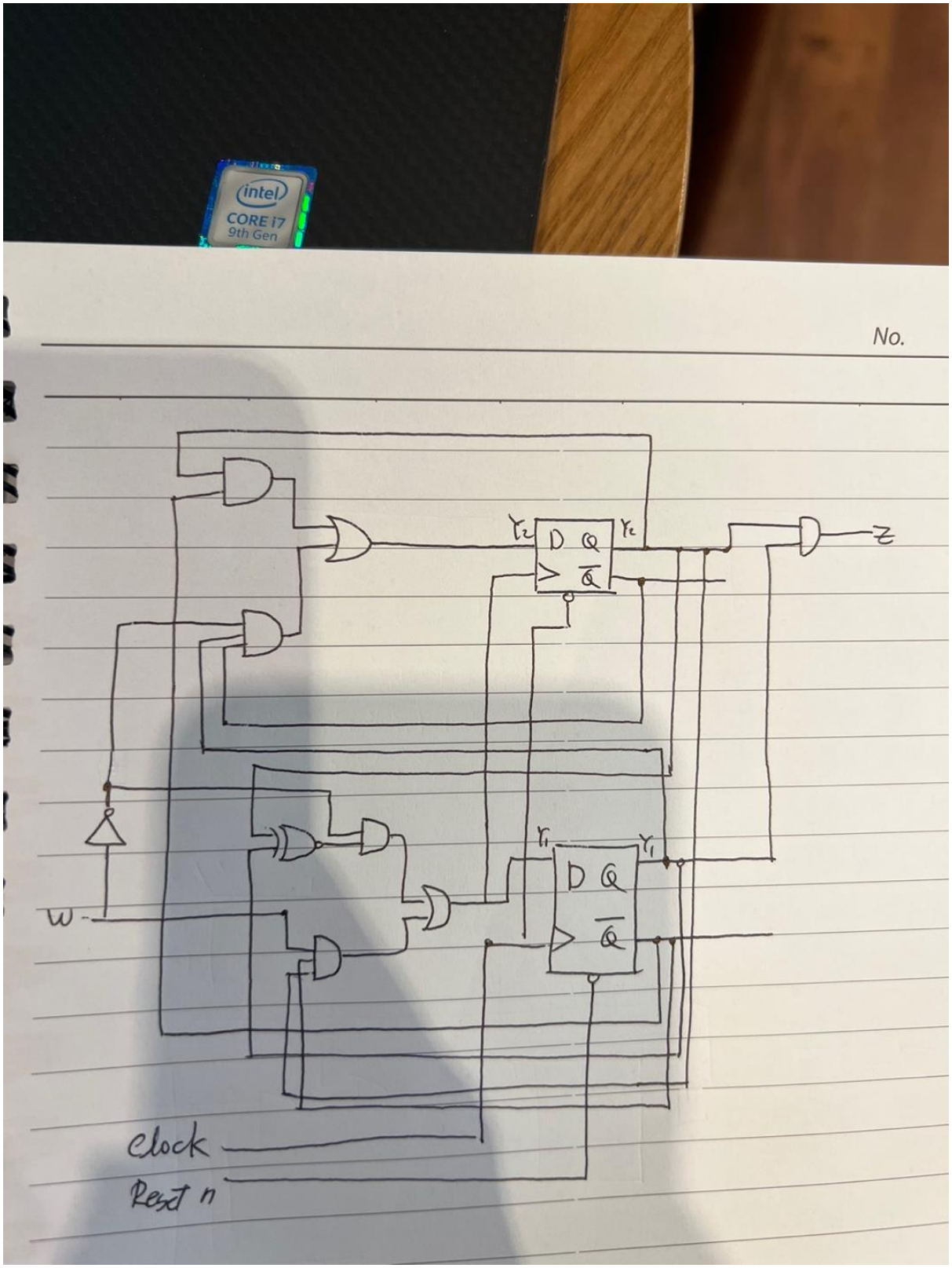
$= w'(Y_2 \oplus Y_1)' + Y_2Y_1'w$

$= Y_2'Y_1w' + Y_2Y_1'$

$Z =$

Y_2 \ Y_1	0	1
0	0	0
1	0	1

$= Y_1Y_2$


No.
r_2
D Q
$\overline{Q}$
r_2
z
r_1
r_1
D Q
$\overline{Q}$
w
clock
Reset n

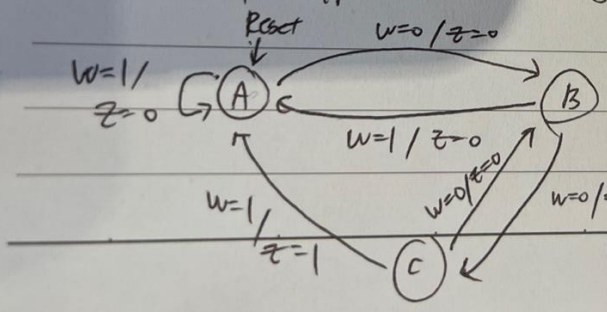
clock

Reset n

(b) mealy type state table

present state	next state w=0	next state w=1	output w=0	output w=1
A	B	A	0	0
B	C	A	0	0
C	B	A	0	1

(3) mealy type state diagram



(7) mealy type state assigned table.

present state	$Y_2\ Y_1$	next state. w=0	next state. w=1	output w=0	output w=1
	$Y_2\ Y_1$	Y_2Y_1	Y_2Y_1	z	z
A	0 0	01	00	0	0
B	0 1	10	00	0	0
C	1 0	01	00	0	1

(8) D flip-flop 로 구현.

$Y_2 =$

w \ Y_2Y_1	00	01	11	10
0	0	1	d	0
1	0	0	d	0

$= Y_1 w'$

$Y_1 =$

w \ Y_2Y_1	00	01	11	10
0	1	0	d	1
1	0	0	d	0

$= Y_1' w'$

$z =$

w \ Y_2Y_1	00	01	11	10
0	0	0	d	0
1	0	0	d	1

$= Y_2 w$