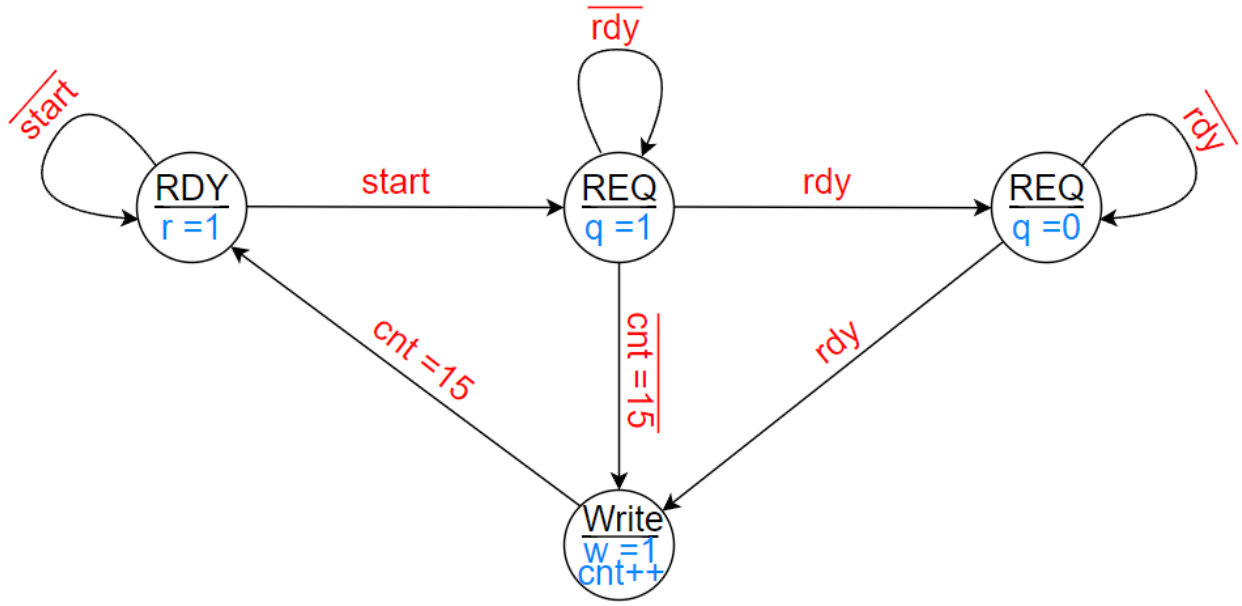
FSM :



States Table :

S_1	S_0	Start	Ready	Cnt=15	S_1	S_0
0	0	0			0	0
0	0	0			0	0
0	0	0			0	0
0	0	0			0	0
0	0	1			0	1
0	0	1			0	1
0	0	1			0	1
0	0	1			0	1
0	1		0		0	1
0	1		0		0	1
0	1		1		1	0
0	1		1		1	0
0	1		0		0	1
0	1		0		0	1
0	1		1		1	0
0	1		1		1	0

1	0		0		1	0
1	0		0		1	0
1	0		1		1	1
1	0		1		1	1
1	0		0		1	0
1	0		0		1	0
1	0		1		1	1
1	0		1		1	1
1	1			0	0	1
1	1			1	0	0
1	1			0	0	1
1	1			1	0	0
1	1			0	0	1
1	1			1	0	0
1	1			0	0	1
1	1			1	0	0

States Formulas :

$S_1 = \overline{S}_1 S_0 R + S_1 \overline{S}_0$
$S_0 = \overline{S}_1 \overline{S}_0 S + \overline{S}_1 S_0 \overline{R} + S_1 \overline{S}_0 R + S_1 S_0 \overline{C}$

Output Table :

S_1	S_0	inc	req	write	ready
0	0	0	0	0	1
0	1	0	1	0	0
1	0	0	0	0	0
1	1	1	0	1	0

Output Formulas :

Ready = $\overline{S}_1 \overline{S}_0$
Request = $\overline{S}_1 S_0$
Write = $S_1 S_0$
Increment = $S_1 S_0$