

1805006

$$x = 6 \pmod{5} + 10 = 11$$

: reset on

12

Normal 4 bit counter. (Same as  $D_3, D_2, D_1, D_0$ )

KMAP:

$D_3$ :

$y_3, y_2$	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	1	1	1	1
10	1	1	0	1

$D_3$ :

$y_3, y_2$	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	x	x	x	x
10	1	1	1	1

$D_2$ :

$y_3, y_2$	00	01	11	10
00	0	0	1	0
01	1	1	0	1
11	x	x	x	x
10	x	x	1	0

$$D_3 = y_3 + y_2 y_1 y_0$$

$$D_2 = y_2 \bar{y}_1 + y_2 \bar{y}_0 + \bar{y}_2 y_1 y_0$$

$D_1$ :

$y_3 y_0$	00	01	11	10
$y_2 y_1$				
00	0	1	0	1
01	0	1	0	1
11	x	x	x	x
10	0	1	0	1

$$D_1 = y_1 \bar{y}_0 + \bar{y}_1 y_0$$

$D_0$ :

$y_3 y_0$	00	01	11	10
$y_2 y_1$				
00	1	0	0	1
01	1	0	0	1
11	x	x	x	x
10	1	0	0	1

$$D_0 = \bar{y}_0$$

val = 12

$y_3 y_2 y_1 y_0 = 1100$

we reset when

$$Reset = y_3 y_2 \bar{y}_1 \bar{y}_0$$