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Present state		Input	Next State		Output	Flip-flop input functions	
A	B	X	A	B	Y	D _A	D _B
0	0	0	0	1	0	0	1
0	0	1	1	0	1	1	0
0	1	0	0	1	0	0	1
0	1	1	1	0	1	1	0
1	0	0	1	0	0	1	0
1	0	1	0	0	0	0	0
1	1	0	X	X	X	X	X
1	1	1	X	X	X	X	X

State Table for circuit using D Flip-Flops

K-Maps:

	B'X'	B'X	BX	BX'
A'	0	1	1	0
A	1	0	X	X

$$D_A = A'X + AX'$$

	B'X'	B'X	BX	BX'
A'	1	0	0	1
A	0	0	X	X

$$D_B = A'X'$$

	B'X'	B'X	BX	BX'
A'	0	1	1	0
A	0	0	X	X

$$Y = A'X$$