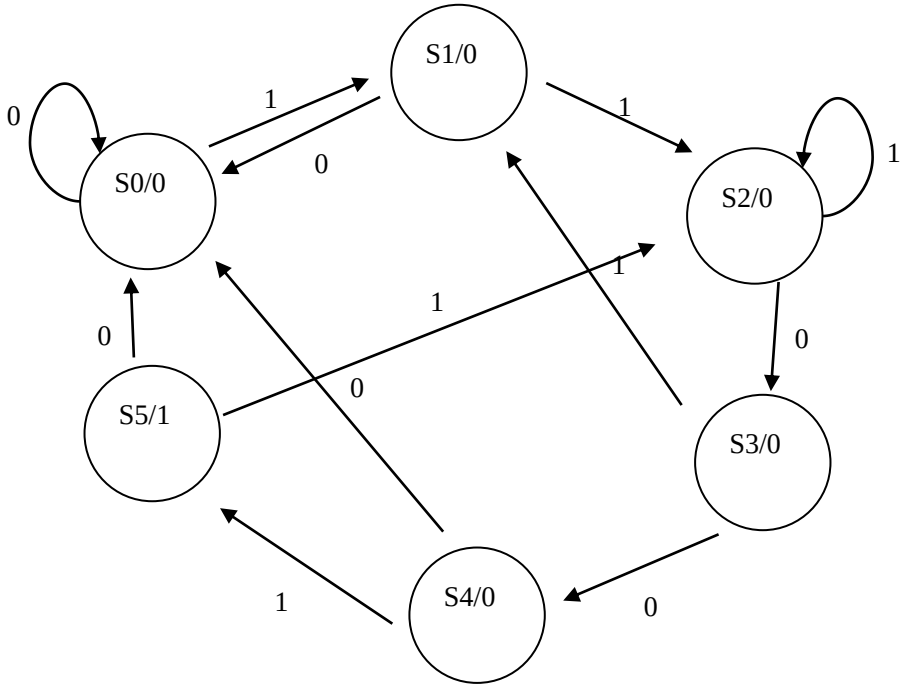
修改彭俊凯的那份 word 文档，仅仅一些细节的方法不同而已。

S0 indicates no ‘1’ has been input yet. So the output at this state is ‘0’.
S1: only one ‘1’ has been input; output ‘0’.
S2: input ‘11’; output ‘0’.
S3: input ‘110’; output ‘0’.
S4: input ‘1100’; output ‘0’.
S5: input ‘11001’; output ‘1’.

Denote X as the input and Y the output. The state diagram is shown as follow.



Sn/Y	S_{n+1}/Y	
	X = 0	X = 1
S_0/0	S_0	S_1
S_1/0	S_0	S_2
S_2/0	S_3	S_2
S_3/0	S_4	S_1
S_4/0	S_0	S_5
S_5/1	S_0	S_2

(注：S_5 不能删去，因为检测到 S_5 输出才为 1)
用‘000’代表 S0；用‘001’代表 S1； 用‘010’代表 S2；用‘011’代表 S3；用‘100’代表 S4；用‘101’代表 S5；替他都为无效状态。下面是 next-sate Karnaugh map(表格中红色为无效状态)

Q_2Q_1	Q_0X	00	01	11	10
00		000	001	010	000
01		011	010	001	100
11		000	001	001	000

10	000	101	010	000

为了避免还要检验是否具有自启动功能，当 x = 0 时，无效状态的下一状态直接填上 000，输出 y = 0;当 x = 1 时，无效状态的下一状态直接填上 001，输出 y = 0

由上图可以得到

$$Q_2^{n+1} = \overline{Q_2^n} Q_1^n Q_0^n \overline{X} + Q_2^n \overline{Q_1^n}\,\overline{Q_0^n} X$$

$$Q_1^{n+1} = \overline{Q_2^n} Q_1^n \overline{Q_0^n} + \overline{Q_1^n} Q_0^n X$$

$$Q_0^{n+1} = \overline{Q_2^n} Q_1^n \overline{Q_0^n} \overline{X} + \overline{Q_2^n}\,\overline{Q_1^n}\,\overline{Q_0^n} X + Q_2^n \overline{Q_0^n} X + Q_1^n Q_0^n X$$

摩尔电路输出与输入没有关系，至于当前状态有关，所以

Y = $Q_2\overline{Q1}Q_0$

J-K Flip-Flop excite table

Q_N —> Q_{N+1}	J	K
0 —> 0	0	X
0 —> 1	1	X
1 —> 0	X	1
1 —> 1	X	0

$$J_2 = Q_1^n Q_0^n \overline{X} \qquad K_2 = \overline{\overline{Q_1^n}\,\overline{Q_0^n} X}$$

$$J_1 = Q_0 X \qquad K_1 = \overline{\overline{Q_2^n}\,\overline{Q_0^n}}$$

$$J_0 = \overline{Q_2^n} Q_1^n \overline{X} + \overline{Q_2^n}\,\overline{Q_1^n} X + Q_2^n X \qquad K_0 = \overline{Q_1^n X}$$

连接图省略了…