HW3

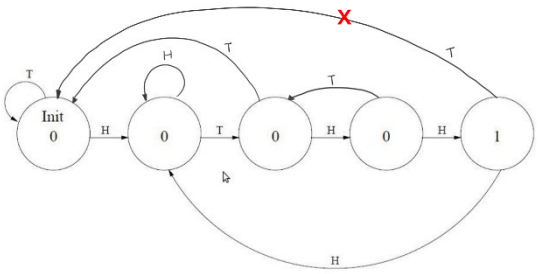
PB18111688 高楚晴

1. a.如图

   b. 3

回到中间的0

x



2. $2^{13}*7=57344$

3. a. A[1:0] = 10 , WE = 1

   b. $2^9<800<2^{10}$，需要 10 根地址线

   c. 224

WE	A[1:0]	Di[15:0]	D[15:0]	Read/Write
0	01	xFADE	xCDEF	Read
1	10	xDEAD	xDEAD	Write
0	00	xBEEF	x0123	Read
1	11	xFEED	xFEED	Write

4. a. 4

   b. 16bits

   c. 3bytes

   d.见右侧

5. 状态说明:

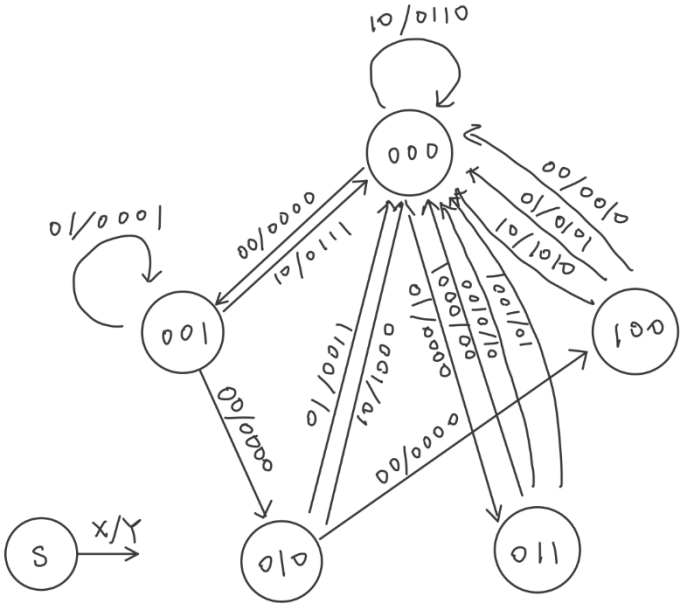
   000：没投入钱

   001：余额 0.1

   010：余额 0.2

   011：余额 0.25

   100：余额 0.3



Y	对应输出 (soda : change)
0000	0 : 0
0001	1 : 0
0010	1 : 0.05
0011	1 : 0.1
0100	1 : 0.15
0101	1 : 0.2
0110	1 : 0.65
0111	1 : 0.75
1000	1 : 0.85
1001	1 : 0.9
1010	1 : 0.95

6.

	PC	IR	MAR	MDR	R0	R1	R2
Fetch	x3004	x62BE	x3003	x62BE		x3000	x3002
Decode	x3004	x62BE	x3003	x62BE		x3000	x3002
Evaluate Address	x3004	x62BE	x3003	x62BE		x3000	x3002
Fetch Operands	x3004	x62BE	x3000	x62BF		x3000	x3002
Execute	x3004	x62BE	x3000	x62BF		x3000	x3002
Store Result	x3004	x62BE	x3000	x62BF		x62BE	x3002

x62BF

7. a. 11
   b. 6
   c. 3

8.

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

最后要加一句HALT指令

9. 各条指令含义依次为：

   将 R4 清零

   R0 <- ~R1

   R0 <- R0 + 1

   R0 <- R0+R2

   BRn 跳过一条

   R4 <- R4+1

   TRAP x21

功能为：若 R2-R1 为负数，则置 R4 为 1，否则为 0.最终将 R2-R1 的 ASCII 值输出到屏幕