**Next State Table**

Current State Inputs Next State

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sn | L | R | Reset | Sn\* |
| S0 | 1 | 0 | 0 | S1 |
| S0 | 0 | 1 | 0 | S4 |
| S0 | 1 | 1 | 0 | S7 |
| S1 | x | x | 0 | S2 |
| S2 | x | x | 0 | S3 |
| S3 | x | x | x | S0 |
| S4 | x | x | 0 | S5 |
| S5 | x | x | 0 | S6 |
| S6 | x | x | x | S0 |
| S7 | x | x | x | S0 |
| x | x | x | 1 | S0 |

-encodings were not needed

Next state equations:

S7\* = S0LRReset’

S6\* = S5Reset’

S5\* = S4Reset’

S4\* = S0L’RReset’

S3\* = S2Reset’

S2\* = S1Reset’

S1\* = S0LR’Reset’

S0\* = S3 + S6 + S7 + Reset

**Output table**

Current State Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sn | LA | LB | LC | RA | RB | RC |
| S0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S1 | 1 | 0 | 0 | 0 | 0 | 0 |
| S2 | 1 | 1 | 0 | 0 | 0 | 0 |
| S3 | 1 | 1 | 1 | 0 | 0 | 0 |
| S4 | 0 | 0 | 0 | 1 | 0 | 0 |
| S5 | 0 | 0 | 0 | 1 | 1 | 0 |
| S6 | 0 | 0 | 0 | 1 | 1 | 1 |
| S7 | 1 | 1 | 1 | 1 | 1 | 1 |

Output Equations:

LC = S3 + S7

LB = S2 + S3+ S7

LA = S1 + S2+ S3 + S7

RA = S4 + S5 + S6 + S7

RB = S5 + S6 + S7

RC = S6 + S7