Diagram

Description automatically generated

State table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Next State | | Output | |
| Present State | X=0 | X=1 | X=0 | X=1 |
| S0 | S1 | S0 | 0 | 0 |
| S1 | S2 | S0 | 0 | 0 |
| S2 | S2 | S3 | 0 | 0 |
| S3 | S3 | S4 | 0 | 0 |
| S4 | S5 | S4 | 0 | 0 |
| S5 | S3 | S6 | 0 | 0 |
| S6 | S5 | S4 | 1 | 0 |