I used the software Tina to model a finite state machine (FSM) that outputs the series 1111111. The FSM synchronous clocking has state transitions on the rising clock edge. The input is a high-low switch (b) and the output is X. A diagram of a mathematical equation

Description automatically generated

After creating the finate state diagram, I created the table to formulate the equations from.

|  |  |  |  |
| --- | --- | --- | --- |
| Current State | Input (b) | Next State | Output (x) |
| 000 | 0 | 000 | 0 |
| 000 | 1 | 001 | 0 |
| 001 | 0 | 010 | 1 |
| 001 | 1 | 010 | 1 |
| 010 | 0 | 011 | 1 |
| 010 | 1 | 011 | 1 |
| 011 | 0 | 100 | 1 |
| 011 | 1 | 100 | 1 |
| 100 | 0 | 101 | 1 |
| 100 | 1 | 101 | 1 |
| 101 | 0 | 110 | 1 |
| 101 | 1 | 110 | 1 |
| 110 | 0 | 111 | 1 |
| 110 | 1 | 111 | 1 |
| 111 | 0 | 000 | 1 |
| 111 | 1 | 000 | 1 |

After deriving the equations for the finite state machine, the digital circuit was modeled in Tina.

A diagram of a computer program

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