3.27 A wristwatch display can show one of four items: the time, the alarm, the stopwatch, or the date, controlled by two signals s1 and s0 (00 displays the time, 01 the alarm, 10 the stopwatch, and 11 the date -- assume s1s0 control an N-bit-wide mux that passes through the appropriate register). Pressing a button B (which sets B=1) sequences the display to the next item (if the presently displayed item is the date, the next item is the current time). Create a state diagram for an FSM describing this sequencing behavior, having an input bit B, and two output bits s1 and s0. Be sure to only sequence forward by one item each time the button is pressed, regardless of how long the button is pressed -- in other words, be sure to wait for the button to be released after sequencing forward one item. Use short but descriptive names for each state. Make displaying the time the initial state.

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Inputs: B, Outputs: s1,s0

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