

The machine does not stop in the required position (scanning the rightmost of a string of m 1s in this case). This statement is completely general. The machine first moves to the rightmost of the m 1s while in state 1, then over the zero separating the m 1s and the n 1s ^{in moving to state 2} then erases the n 1s ^{moving right} cycling between states 2 and 3. When all the n 1s have been erased the machine is in state 3. It moves right one move time, then stops in state 2, because it has no instructions to move to the rightmost of the m 1s. Hence this machine is unsuitable for the task.

6) Try the same test data

11011	11011	11011	11011	
1	1	1	2	
11011	110110	110110	11010	11010
2	2	3	4	3
11000	11000	110		
4	3	5		

The machine performs as required in this case, and in fact, in general. ✓

The machine first moves to the rightmost of the m 1s, then to the position of the zero separating the m 1s and the n 1s, while in state 1.

In passing to state 2, it moves to the leftmost of the n 1s.

While in state 2, it moves to the first zero at the right of the n 1s. In