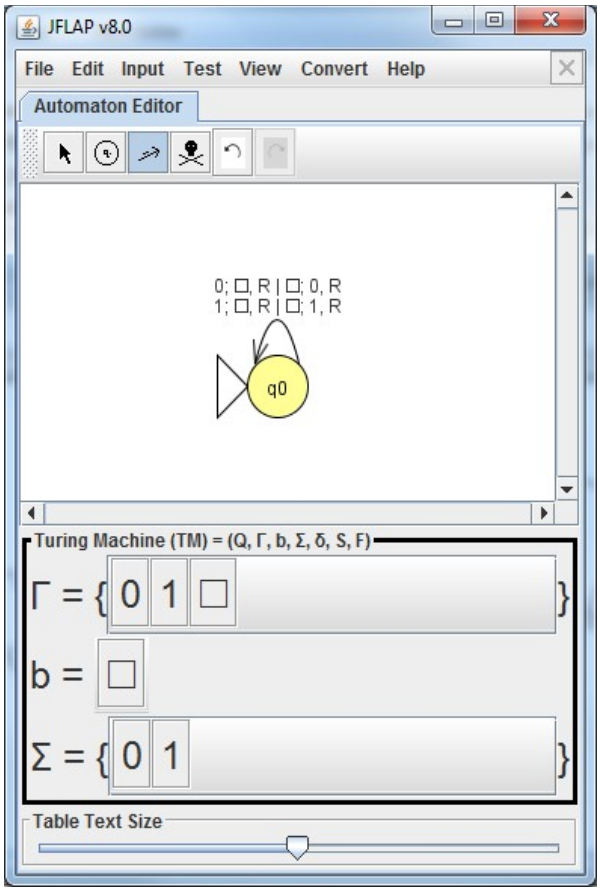
Lets create a multi-tape Turing machine that accepts Strings of the form,

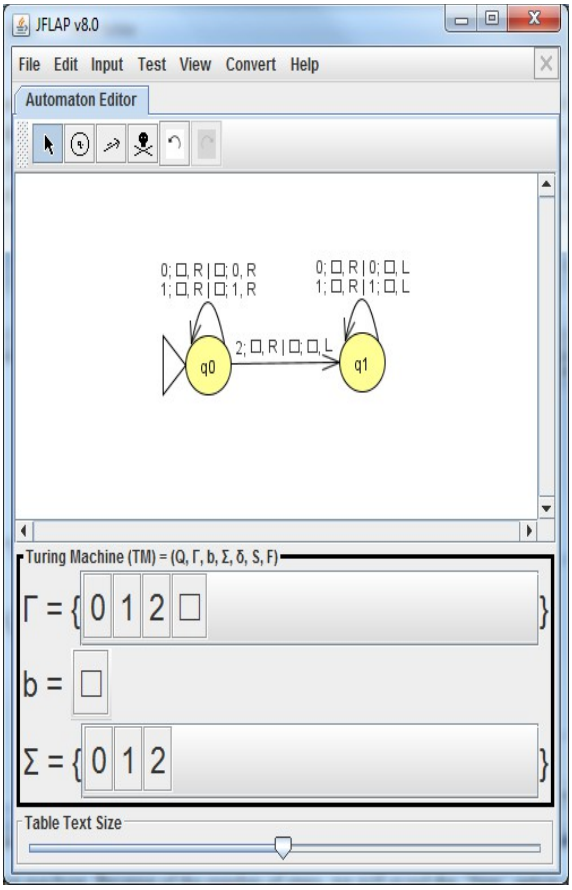
w 2 reverse(w) 2, where w contains a pattern of 1s and zeros.
e.g. 0101210102 is a valid string. (Recall, we developed this problem for PDAs as well).

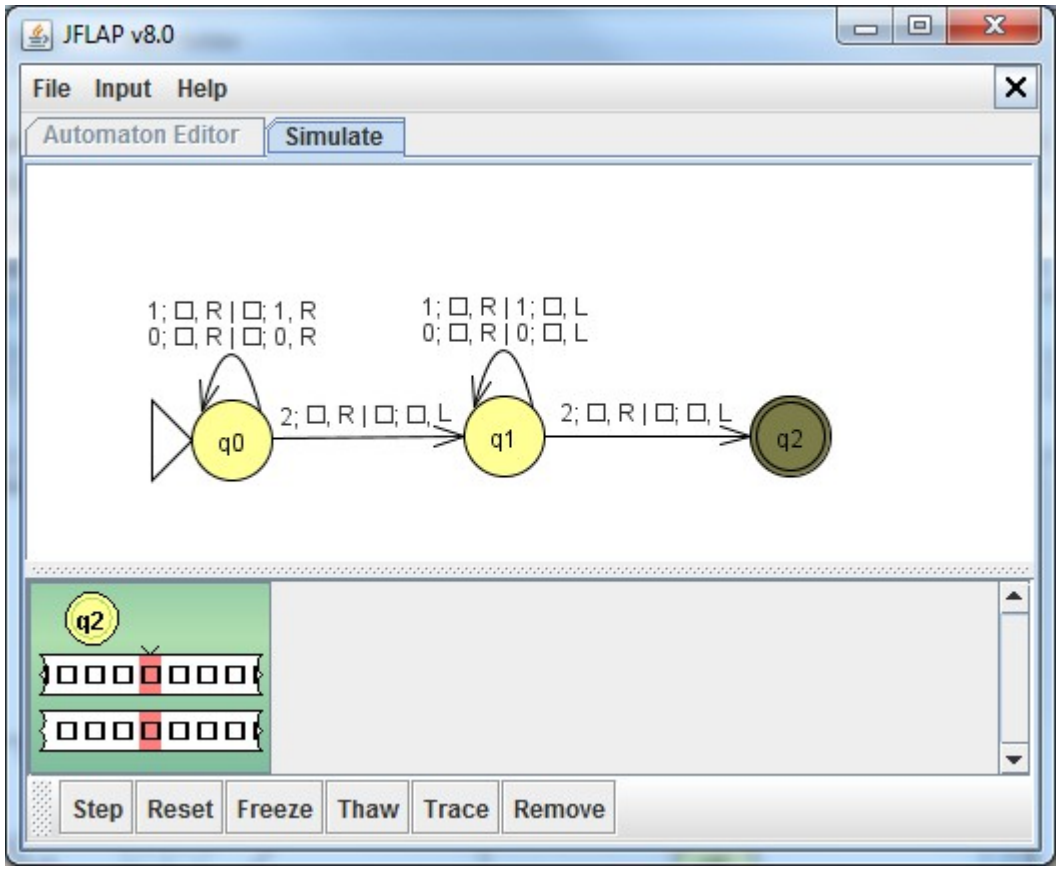
We will use a two tape machine. The second Tape will play the role of a stack. So while our the head of our first tape is over a 0 or 1, we will copy it to the second tape and move both tapes to the right.

When the first tape sees a 2, we will transition to a new state and simple position the second tape head.

In this new state, while the character that the first tape is reading is equal to the character under second tape read head. When we read a 2 on the first tape, we make one more transition to the left one the second tape and make sure we read a blank before accepting.






JFLAP v8.0
File Input Help
Automaton Editor
Simulate
1; □, R | □; 1, R
0; □, R | □; 0, R
1; □, R | 1; □, L
0; □, R | 0; □, L
2; □, R | □; □, L
2; □, R | □; □, L
q0
q1
q2
q2
Step
Reset
Freeze
Thaw
Trace
Remove