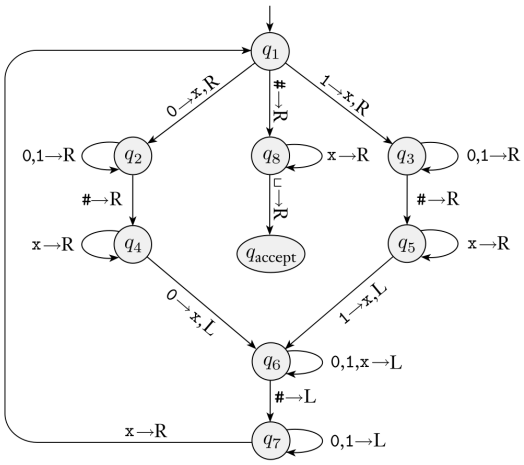
Prework 3.1a: Turing Machines

Write your preliminary solutions to each problem and submit a PDF on Canvas. The names in brackets indicate the subset responsible for presenting the problem.

1. [Todd, Allie, David] Describe the sequence of configurations (states and tape) that the following TM takes while processing (a) the input string `10#11`, (b) the input string `10#10`, and (c) the input string `1#1#1`.



2. [Andrew, Ky, Grace] Give an implementation description of a TM for the language $A = \{\mathtt{a}^n\mathtt{b}^n\mathtt{c}^n \mid n \geq 1\}$.
3. [Levi, Ben, Meghan] Give a formal description (i.e., state diagram) of a TM for the language $A = \{\mathtt{a}^n\mathtt{b}^n\mathtt{c}^n \mid n \geq 1\}$.
4. [Joshua, Micah, Curtis, Connor] Let $\Sigma = \{0, 1\}$. Give an implementation description of a TM for the language B consisting of all strings in Σ^* that contain twice as many 0's as 1's.

BEGIN YOUR SOLUTIONS BELOW THIS LINE