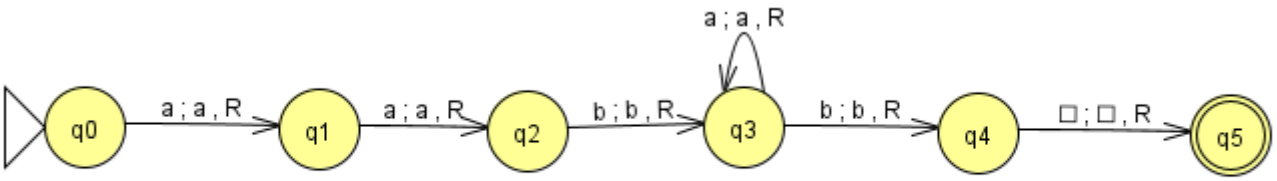
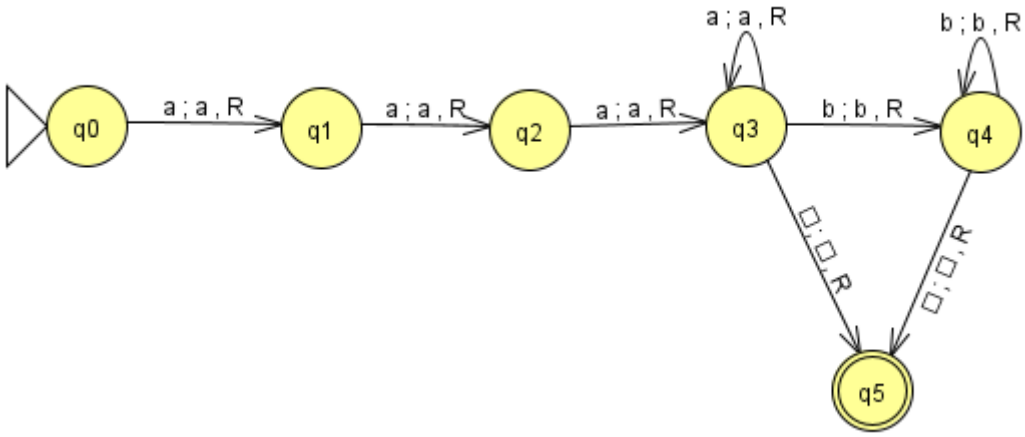
Construct a Turing machine (acceptor) that accepts each one of the following languages where $\Sigma = \{a, b\}$.

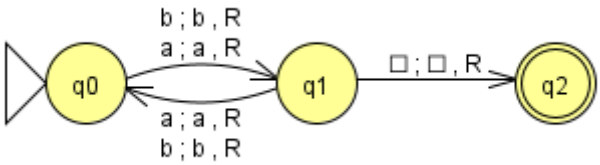
1) A Nondeterministic Turing Machine for the language $L_1 = \{aaba^*b\}$ is constructed below with a transition graph:



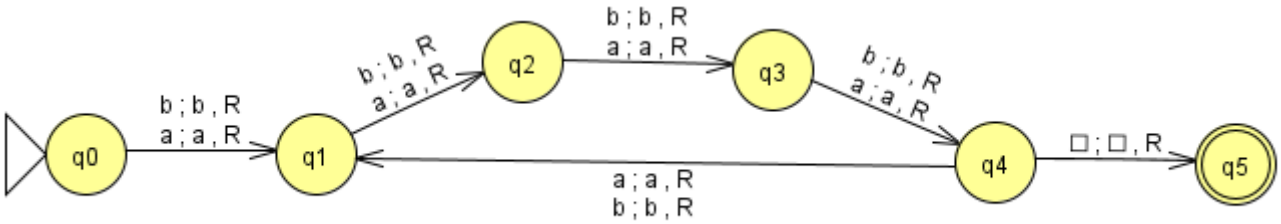
2) A Nondeterministic Turing Machine for the language $L_2 = \{aaaa^*b^*\}$ is constructed below with a transition graph:



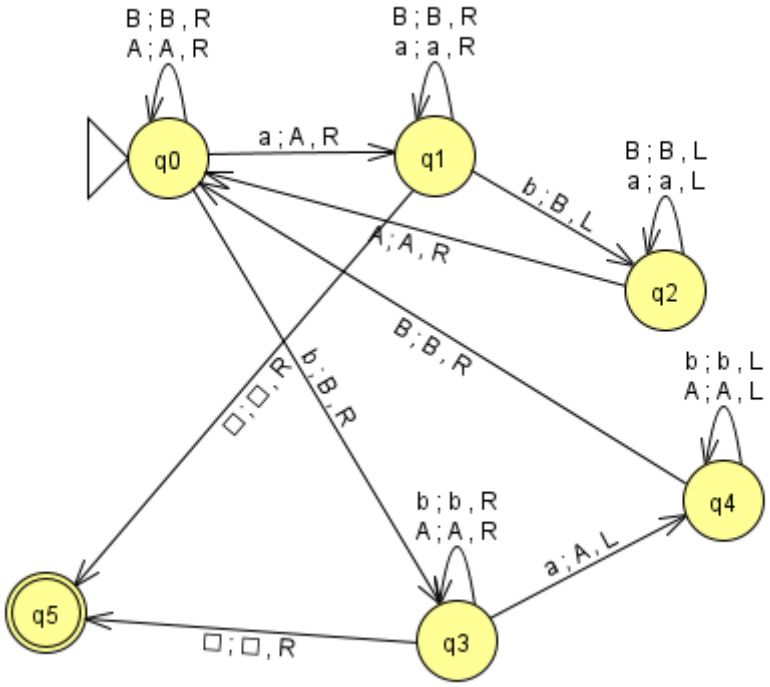
3) A Nondeterministic Turing Machine for the language $L_3 = \{w : |w| \text{ is odd}\}$ is constructed below with a transition graph:



4) A Nondeterministic Turing Machine for the language $L_4 = \{w : |w| \text{ is a multiple of } 4\}$ is constructed below with a transition graph:



5) A Nondeterministic Turing Machine for the language $L_5 = \{w : n_a(w) \neq n_b(w)\}$ is constructed below with a transition graph:



6) A Nondeterministic Turing Machine for the language $L_6 = \{ww_R : |w| \geq 1\}$ is constructed below with a transition graph: