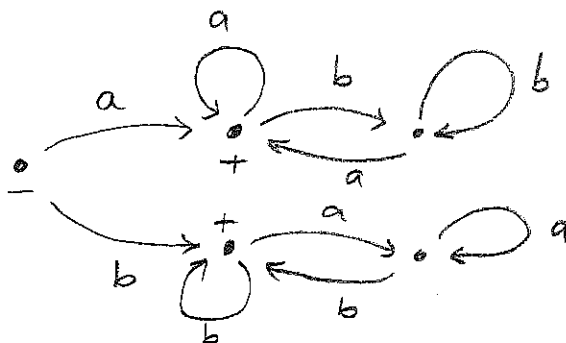


Here is a deterministic finite state automaton:



1. Which of the following words are accepted by this automaton: *abbbaba*, *abbbab*, *bbbaaab*, *bbbbaaba*.
2. Describe in English the language accepted by this automaton.
3. Make a new automaton, by changing the final state to a non-final state, and by changing each non-final state to a final state. Describe in English the language accepted by this automaton.
4. True or false: Let  $\Sigma$  be a finite set of symbols. Let  $L$  be a language over  $\Sigma$ . Then there is a finite state automaton accepting  $L$  if and only if there is a finite state automaton accepting  $\overline{L} = \Sigma^* - L$ .