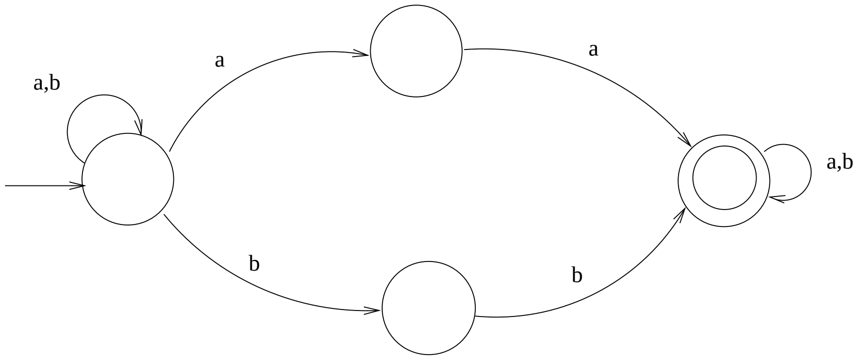
SOLUTIONS
CSE105 Quiz #1 (Blue Version)
Thursday, Oct. 7, 1999

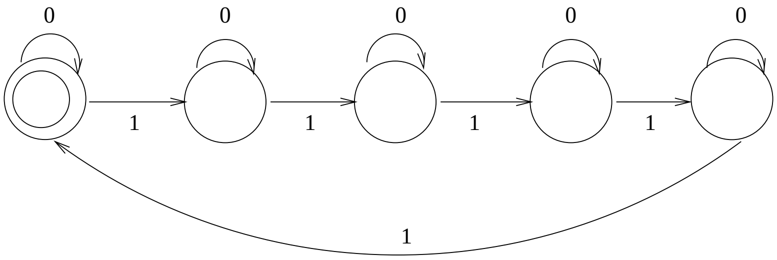
1. Give the state diagram of an NFA over the alphabet { **a b** } that accepts {w | w has either **aa** or **bb** as substring }



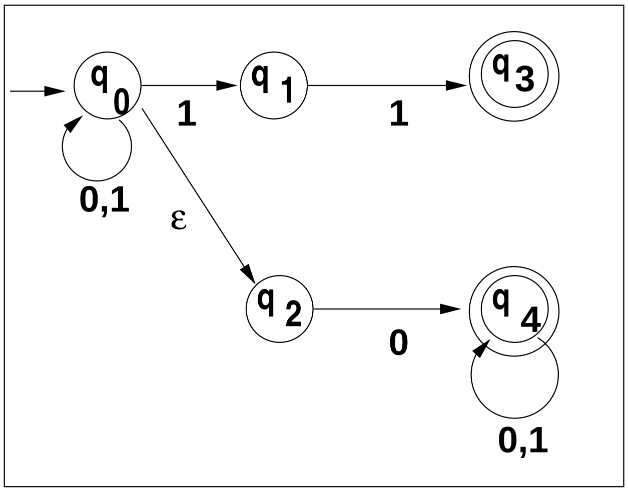
2. Give the state diagram of a DFA over the alphabet { **0 1** } that accepts

   {w | w has $5m$ **1**'s for some integer $m \geq 0$}

   Remember that m can be any nonnegative integer (this includes 0!). The FA must accept any string with exactly (5m) 1's.



3. Describe L(M) where M is given by the following state diagram.



   L(M) = {w | w is a string over the alphabet 0,1 which either contains a 0 or ends with the substring 11}

4. Define the term language over alphabet Σ.

   A language over Σ is defined to be any set of strings over Σ.