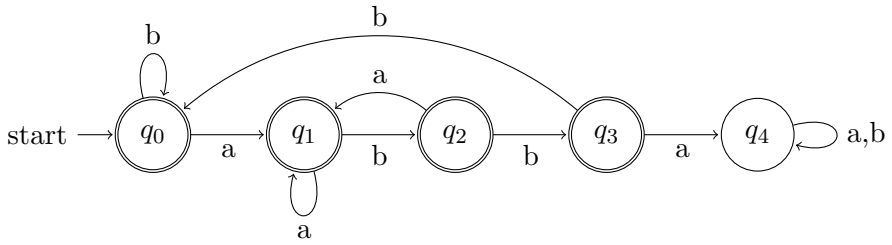
Com S 331 **Homework 3** **John Vincent**

1.

Assume there is some finite language L. A finite automata with states S, initial state s_0, and final states F can be constructed where $|L| = |F|, \forall w \in L, \exists s_i \in S \, \forall a_i \in w, s_{|w|} \in F \wedge (s_i, a_i a_{i+1} \dots a_{|w|}) \vdash (s_{i+1}, a_{i+1} \dots a_{|w|})$ basically for every string in the language you can add a state for each character in the string, to the FA and then make the last character's corresponding state final. Ensuring that each string will end in a final state.

2.



3.