



Ma2201/CS2022

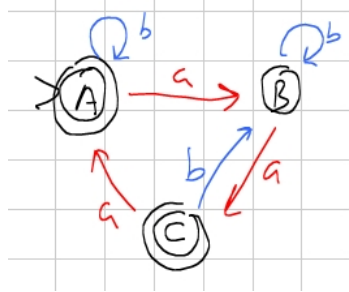
Quiz 1100

Foundations of C.S.

Spring, 2021

Online Quiz

1. (2 pts) Consider M , the Deterministic Finite Automaton,



For the word $ababa \in L(M)$, identify three substrings which are pumpable, and say briefly why, and one string which is not pumpable, and say briefly why.

2.(2 pts) Draw, or give a table you don't like drawing, the diagram of a deterministic finite automaton whose language has a string of length 4 with no pumpable substring.

3. (6 pts) Consider the language L consisting of all elements of $w \in \{a, b, c\}^*$ with odd length and with $n_b(w) < n_a(w) + n_c(w)$. So $(a^7b^5c^9 \in L)$.

Use the pumping lemma to show that L is not regular.

Your response will be graded both on correctness and clarity of exposition.