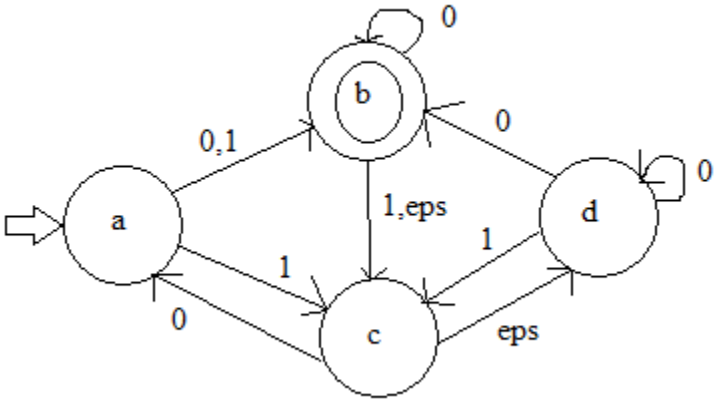
COT 4210 Quiz #1 Part B

2/4/2021

Note: This quiz (both parts A and B) will count for 9% of the course grade instead of 10%. The quiz 0 grade counted for 1% of the course grade, and together with this quiz, totals 10%.

4) (10 pts) Below is an NFA with states Q = {a, b, c, d}, the alphabet Σ = {0, 1}, and the start state q_0 = a. Convert this NFA to an equivalent DFA using the algorithm shown in class. Only include reachable states in your DFA. Label the states in your DFA with each letter from the subset of states it represents. For example, if one could be in state a, c or d in the NFA, please label the corresponding state in the DFA acd. Draw your DFA using the previously stated guidelines.



5) (10 pts) Let L = { w | w contains twice as many a's as b's} be a language over the alphabet {a, b}. Using the pumping lemma, prove that L is NOT regular.

6) (1 pt) From what country did the coffee called "Café Cubano", originate?