CS 302
QUIZ 4

21 October, 2015

Duration : 15 minutes

Do not forget to write your name on your paper !

QUESTION

(a) (5 pts) Let L_A and L_B be two **regular** languages over a common alphabet set Σ. Using the **Warshall Algorithm** state how one can decide whether there is a string in Σ^* that is neither in L_A nor in L_B.

(b) (5 pts) Draw the graph of an **ε–NFA** that accepts the language **(0.(1+0*.1))***

ANSWER

(a) (5 pts) Let **A** and **B** be two **DFAs** with state sets Q_A and Q_B ; initial states s_A and s_B ; and final state sets F_A and F_B that accept L_A and L_B respectively. Apply **Warshall Algorithm** to the product DFA $A \times B$ where the edge labels are removed. The answer to the decision problem is YES if there is a path from the product initial state (s_A, s_B) to any state in $Q_A\text{-}F_A \times Q_B\text{-}F_B$

(b) (5 pts)