
Course - CS303, Class Assignment -3
Date- 27/08/2021, Date of Submission :- 27/08/2021 (within the class timing)
Format of submission :- Clubbed all the ans in a pdf, the name of the file should be "Roll No_Assignment_no_" and send it cs303iitp@gmail.com,

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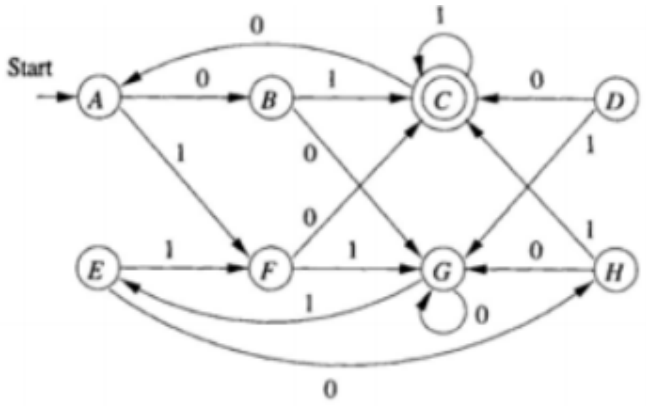
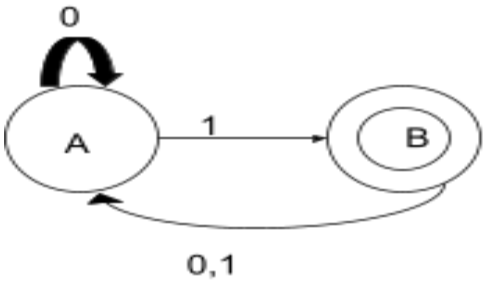
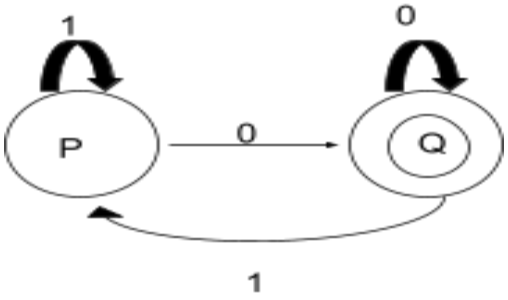
Q-1.
Minimize the following DFA. Show all the steps of the minimization algorithm



Q-2.
Construct a regular grammar(either left linear or right linear) which produces the language over the alphabet Σ = {a, b} consisting of all strings with at most 3 a's. Show how the string "babbaab" is produced. Assume symbol 'S' as the start symbol of grammar. Also construct a NFA 'M' from the regular grammar constructed by you for the above statement such that every state is a grammar variable.(You can either use paint to draw the NFA or you can draw it on a piece of paper, then click a picture and paste it to the pdf file).

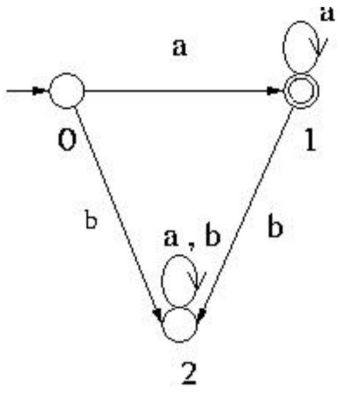
Q-3.
Construct the DFA for the language which represents the intersection of the language represented by the following DFAs. (Also draw the steps along with final answer)





Q-4.

Draw complement of DFA given below and write their respective regular grammar.



Q-5.

Draw a DFA for the language accepting $\mathbf{L^R}$ **over the L={** $\mathbf{a^n b^n}$ **; n ≤ 1}.**