Date: 07/08/2024

Experiment 1.2

AIM

To find ε – closure of all states of any given NFA with ε transition

ALGORITHM

1. Start
2. Create utility functions for NFA data structure to read and write transitions.
3. Read NFA input as follows:
    1. The first line contains the number of states (n) , number of final states (f) , number of input alphabets(m), and number of transitions(t).
    2. The next line contains f space separated integers denoting the final states.
    3. The next line contains the m input alphabets as a single string.
    4. The next t lines contain transitions as “qi qj c” representing a transition from qi to qj on input alphabet c. Here, the alphabet ‘e’ denotes epsilon.
4. Create a DFS function that finds epsilon closure of a state and stores in a boolean array as follows:
    1. If state is visited, terminate function call.
    2. Mark state as visited.
    3. For each transition from the given state via input alphabet epsilon:
        1. Recursively call the DFS function for the target state.
5. For each state in the epsilon NFA, find the epsilon closure using DFS.
6. Print the set of states in the epsilon closure of each state.
7. Stop

RESULT

Successfully calculated epsilon closure of all states.