Computer Systems Lab

Assignment-1

Date of Assignment: 03-Sept-2020 **Date of Submission: 09-Sept-2020**

1. In this assignment, you are given an NFA, and your task is to do the following:
   a. Convert the NFA to an equivalent DFA using the *subset construction algorithm*.
   b. Given a set of strings, your task is to print **Accept** or **Reject** based on the fact that whether the DFA accepts it or not.

Input:

Number of states in NFA = 4 (It stands for state q0, q1, q2, and q3)

Start State = 0 (It stands for state q0)

Final States = 1 3 (There is only one final/acceping state, named q3)

Transition Function for 0 = 1 0 1 2 0 1 3

Transition Function for 1 = 3 0 1 2 1 3 1 3 1 3

NFA-TF0

1, q0	1, q2	0	1, q3
q0	q1	q2	q3

NFA-TF1

3, q0,q1,q2	1, q3	1, q3	1, q3
q0	q1	q2	q3

Number of strings = 5

010111

010101

11111111

0000010

0100

Output:

DFA-TF0

Q0	Q2	Q0	Q4	Q5	Q5

DFA-TF1

Q1	Q3	Q3	Q3	Q3	Q3

Q0 = {q0}
Q1 = {q0, q1, q2}
Q2 = {q0, q2}
Q3 = {q0, q1, q2, q3}
Q4 = {q0, q2, q3}
Q5 = q0, q3

Accept
Accept
Accept
Reject
Reject

Submission Instruction:

File Name: A1_Your Roll Number.c (A1_20CS06002.c or A1_20CS06002.cpp)
Mail to: joy@iitbbs.ac.in
Subject Line: A1_20CS06002