NORTH SOUTH UNIVERSITY

Department of Electrical and Computer Engineering
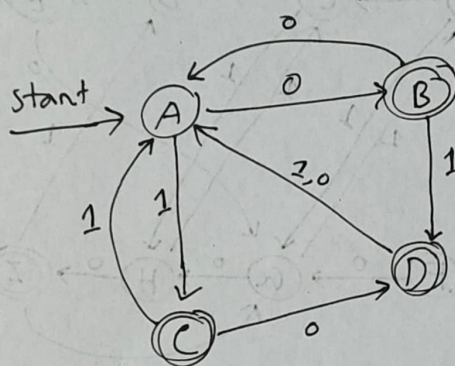
Assignment – 01

Name   : Joy Kumar Ghosh
Student ID   : 2211424 0 42
Course No.   : CSE 273
Course Title   : Introduction to Theory of Computation
Section   : 3
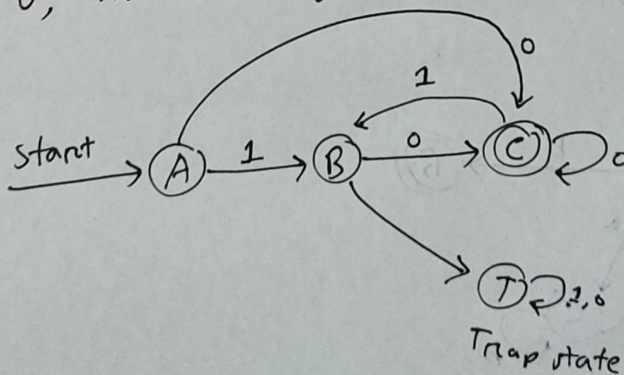Date   : 12 February 2025

5× Challenging DFA

DFA-1:
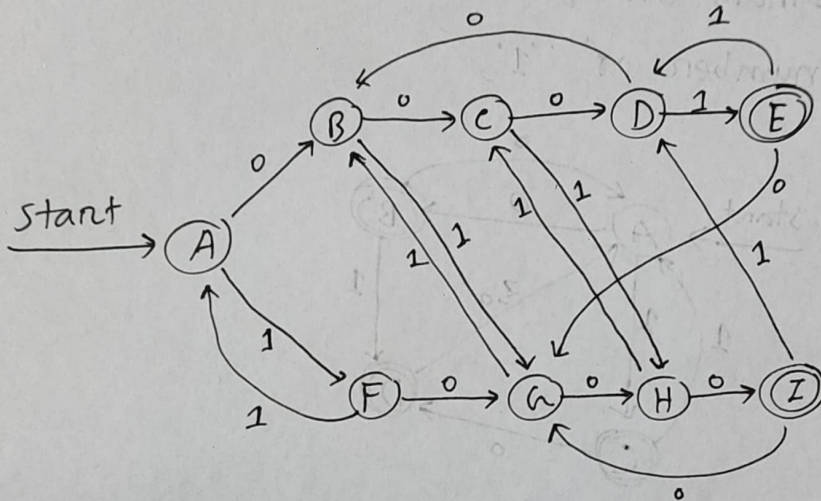
Binary string, odd number of '0' and odd number of '1'.

DFA-2:

Binary string, every 1 is followed by at least one '0', not containing '11'.
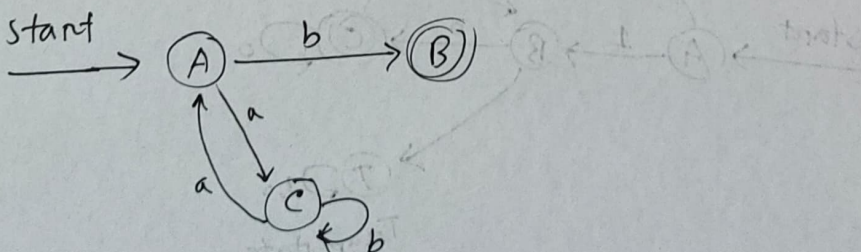

Trap state

DFA-3:

Binary string, where number of '0' is a multiple of 3 and the number of '1' is odd.

DFA-4:
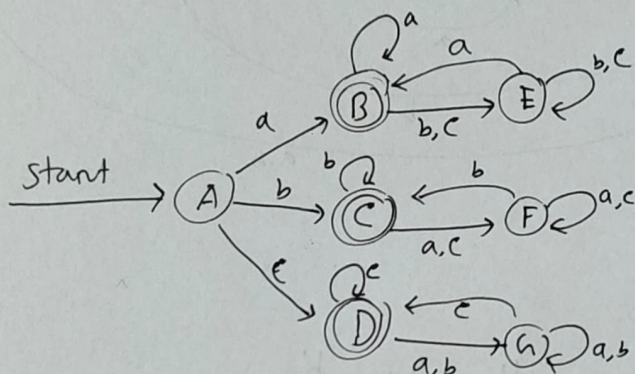
$\Sigma = \{a, b\}$

number of 'a' is even and ends with 'b'.

DFA-5!

$\Sigma = \{a, b, c\}$
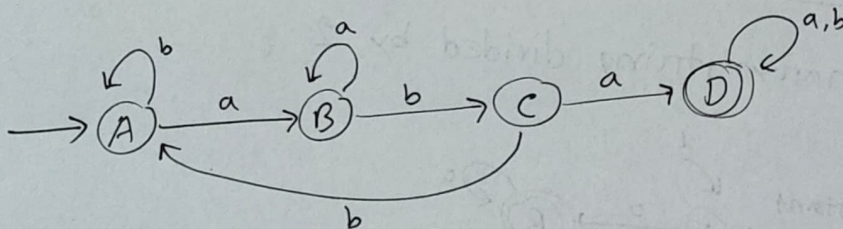
L: start and ends with the same letter.
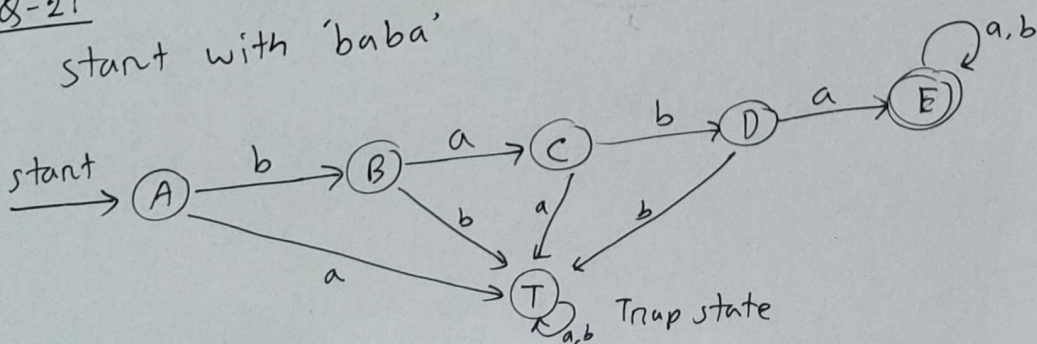
start

More practice from slide

Slide Question - 1!

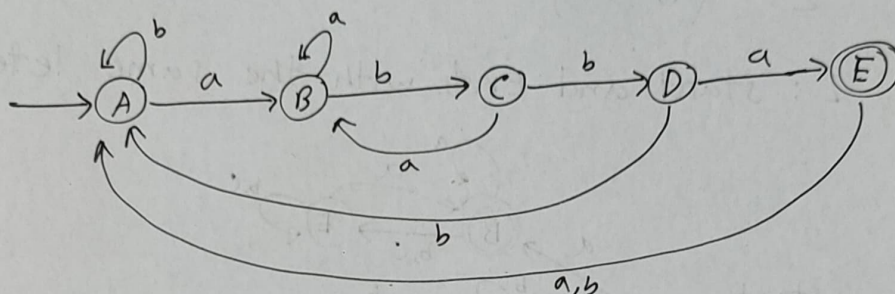$\Sigma = \{a, b\}$

L: contains substring 'aba'

SQ-2!

start with 'baba'

start

T, Trap state

SQ-3:

end with 'abba'

SQ-4:

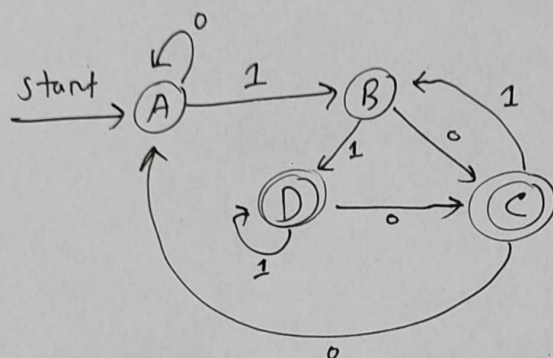contains exactly two 'b'.

T — Trap state
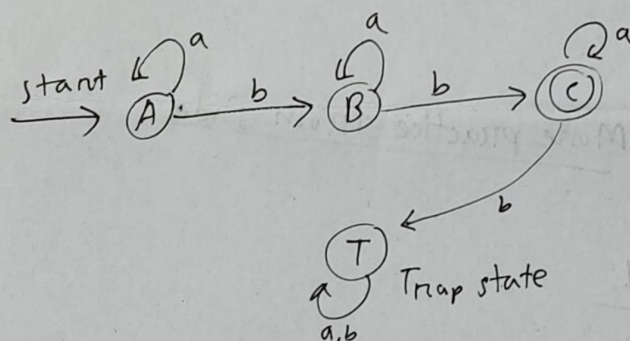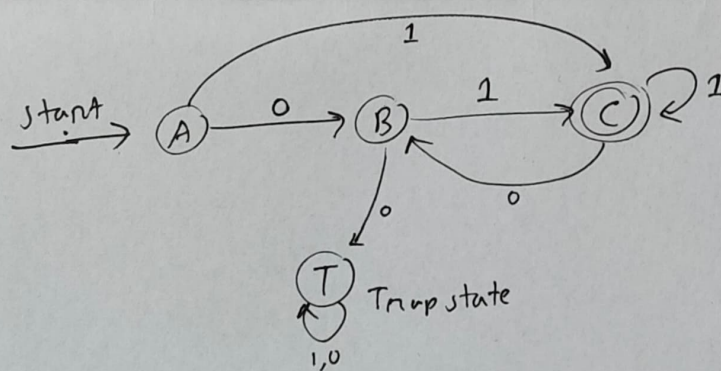
SQ-5:

Binary string divided by 2
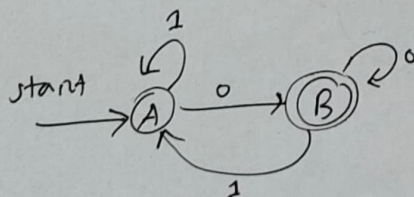
SQ-6:

Binary string, next to last symbol is 1

SQ-7:

ending in 1 and not containing 00.

References:

1. Chat GPT { for question generate only, solved by my own }