

Assignment 01



North South University

Department of Electrical & Computer Engineering

CSE 273: Theory Of Computation

Sec: 02

FALL - 2021

Submitted by:

MD ABU SAYED FAHIM (1812534642)

Submitted to:

MD. MOSADDEK KHAN

Sub: _____

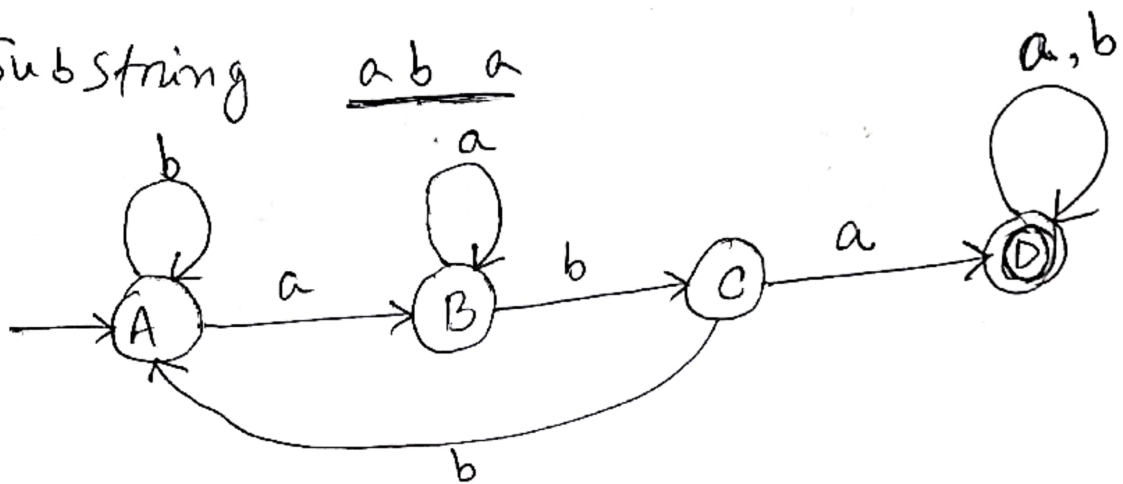
Day

Sat	Sun	Mon	Tue	Wed	Thu	Fri
-----	-----	-----	-----	-----	-----	-----

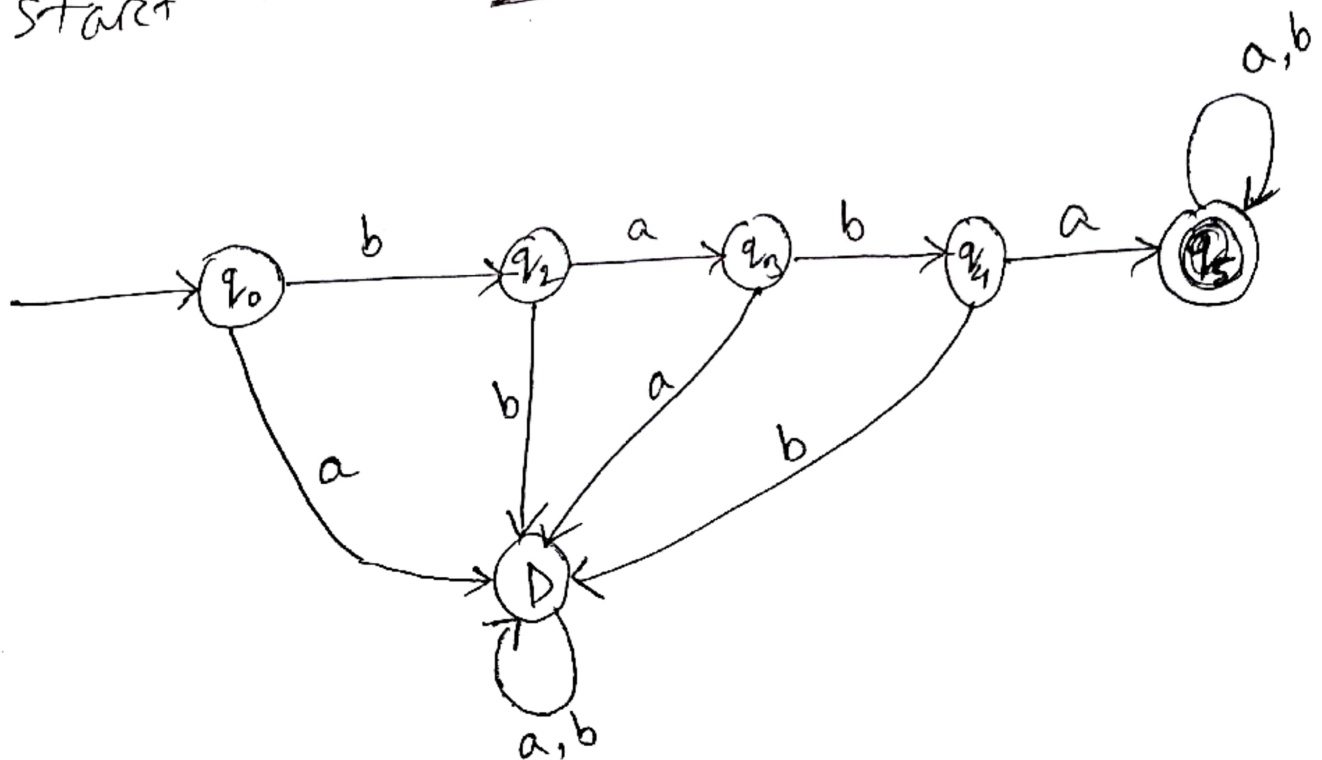
Time: _____ Date: ____/____/____

□ Design a DFA to accept String of a's and b's that contains

Substring aba



□ To accept String of a's and b's that start with baba



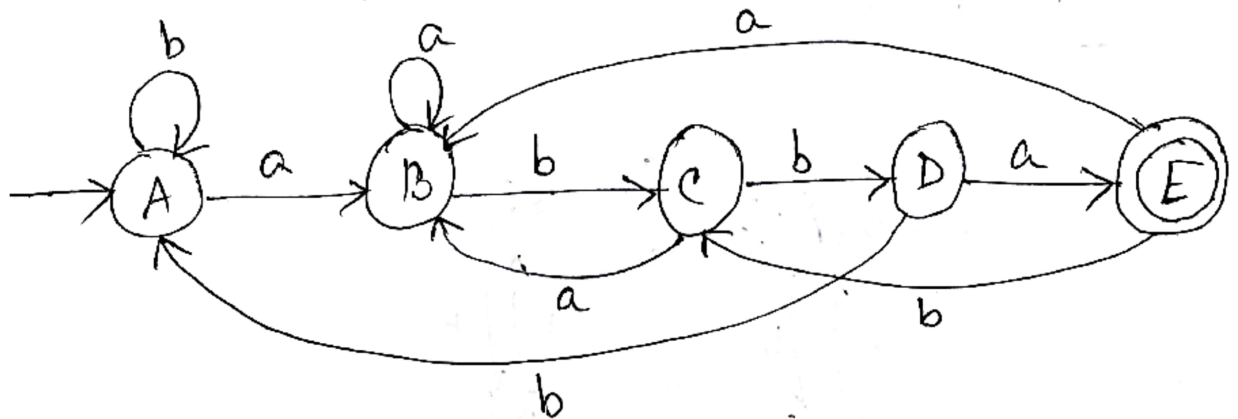
Sub: _____

Day

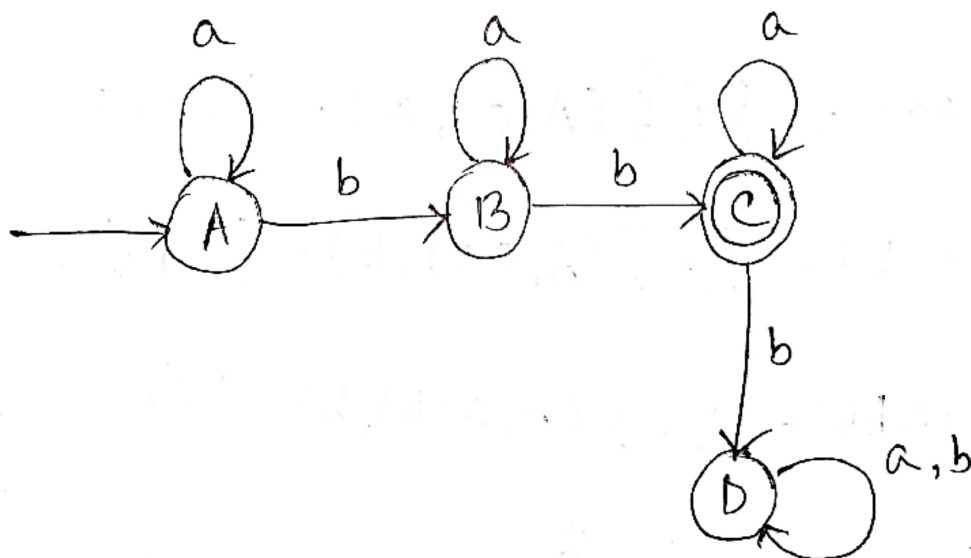
Sat	Sun	Mon	Tue	Wed	Thu	Fri
-----	-----	-----	-----	-----	-----	-----

Time: _____ Date: ____/____/____

□ To accept String of a's and b's that end with abb a



□ To accept String of a's and b's that contains exactly two b's



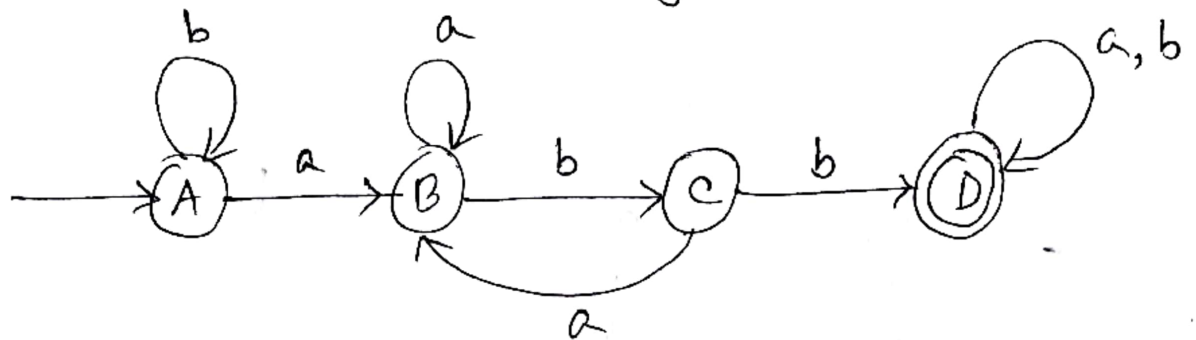
Sub: _____

Day

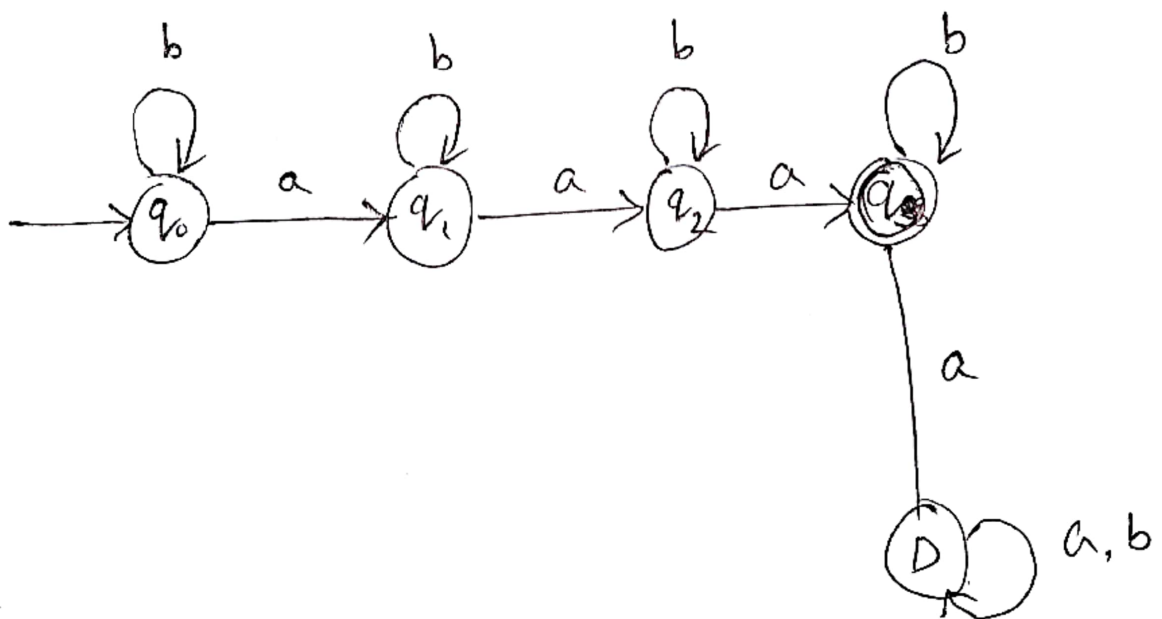
Sat	Sun	Mon	Tue	Wed	Thu	Fri
-----	-----	-----	-----	-----	-----	-----

Time: _____ Date: / /

☐ To accept string of a's and b's that contain substring abb

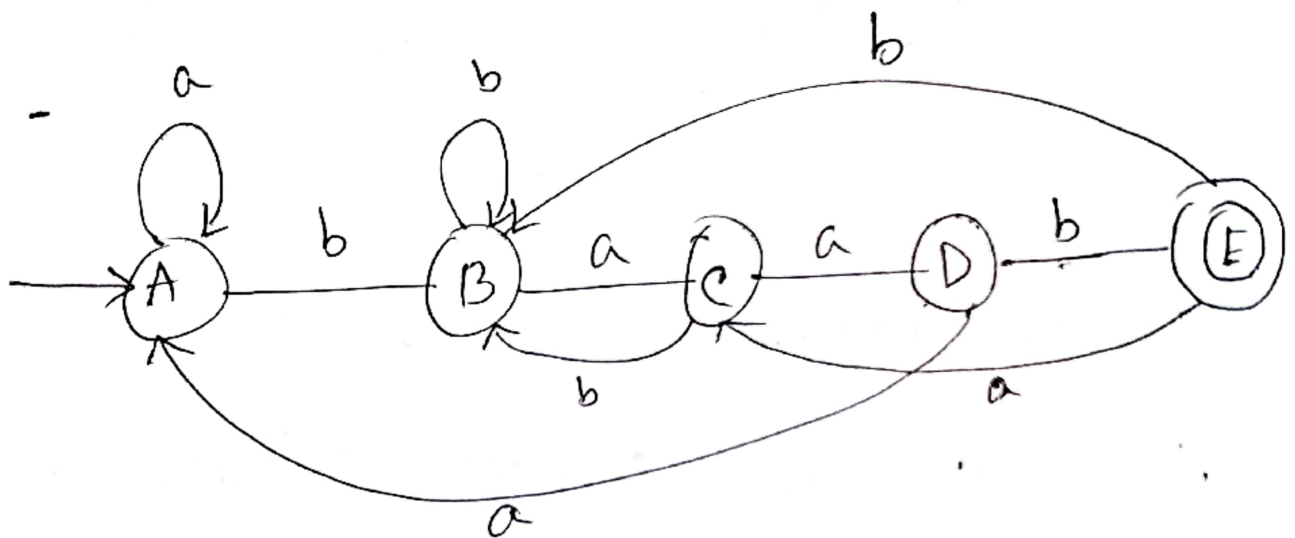


☐ To accept string of a's and b's that contains exactly three a's



Sub: _____

Q To check string of a's and b's
that end with baab

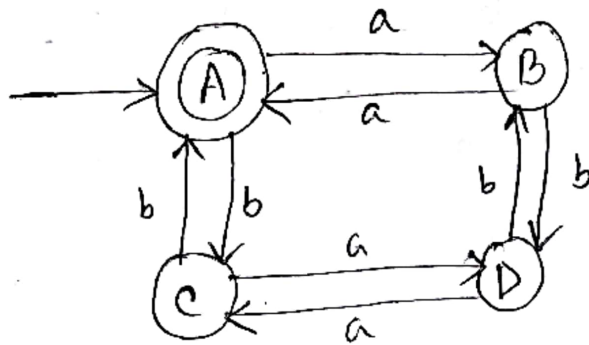


Sub: _____

Time: _____

Date: / /

Extended transition function to check aabba.



$$\hat{\delta}(A, \epsilon) = A$$

$$\hat{\delta}(A, a) = \delta(\hat{\delta}(A, \epsilon), a) = \delta(A, a) = B$$

$$\hat{\delta}(A, aa) = \delta(\hat{\delta}(A, a), a) = \delta(B, a) = A$$

$$\hat{\delta}(A, aab) = \delta(\hat{\delta}(A, aa), b) = \delta(A, b) = C$$

$$\hat{\delta}(A, aabb) = \delta(\hat{\delta}(A, aab), b) = \delta(C, b) = A$$

$$\hat{\delta}(A, aabba) = \delta(\hat{\delta}(A, aabb), a) = \delta(A, a) = B$$

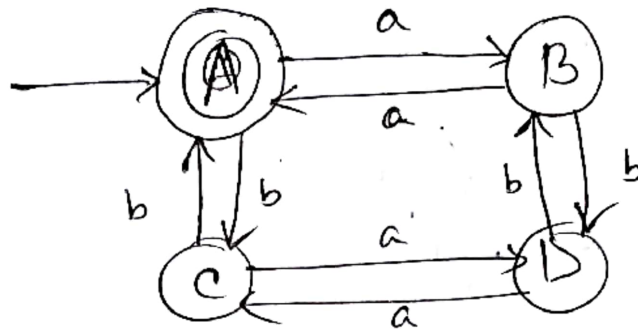
Sub: _____

Day

Sat	Sun	Mon	Tue	Wed	Thu	Fri
-----	-----	-----	-----	-----	-----	-----

Time: _____ Date: ____/____/____

□ E.T.F to check bb a a b



$$\hat{\delta}(A, \epsilon) = A$$

$$\hat{\delta}(A, b) = \delta(\hat{\delta}(A, \epsilon), b) = \delta(A, b) = C$$

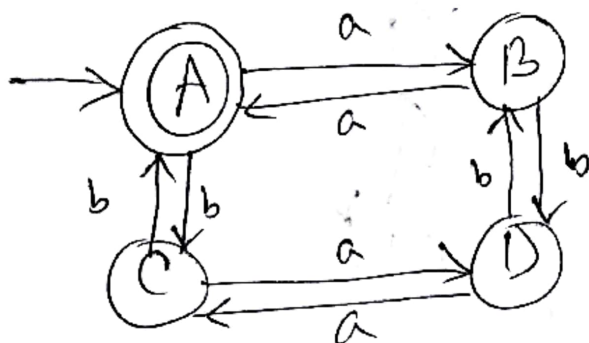
$$\hat{\delta}(A, bb) = \delta(\hat{\delta}(A, b), b) = \delta(C, b) = A$$

$$\hat{\delta}(A, bba) = \delta(\hat{\delta}(A, bb), a) = \delta(A, a) = B$$

$$\hat{\delta}(A, bbaa) = \delta(\hat{\delta}(A, bba), a) = \delta(B, a) = A$$

$$\hat{\delta}(A, bbaab) = \delta(\hat{\delta}(A, bbaa), b) = \delta(A, b) = C$$

□ E.T.F. to check ababa



$$\hat{\delta}(A, \epsilon) = A$$

$$\hat{\delta}(A, a) = \delta(\hat{\delta}(A, \epsilon), a) = \delta(A, a) = B$$

$$\hat{\delta}(A, ab) = \delta(\hat{\delta}(A, a), b) = \delta(B, b) = D$$

$$\hat{\delta}(A, aba) = \delta(\hat{\delta}(A, ab), a) = \delta(D, a) = C$$

$$\hat{\delta}(A, abab) = \delta(\hat{\delta}(A, aba), b) = \delta(C, b) = A$$

$$\hat{\delta}(A, ababa) = \delta(\hat{\delta}(A, abab), a)$$

$$= \delta(A, a)$$

$$= B$$