



# **NORTH SOUTH UNIVERSITY**

Department of Electrical and Computer Engineering

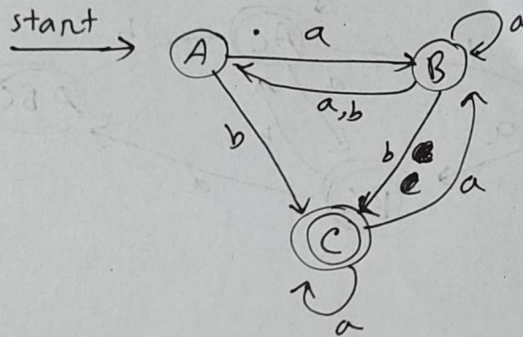
## **Assignment – 02**

Name : Joy Kumar Ghosh  
Student ID : 2211424 0 42  
Course No. : CSE 273  
Course Title : Introduction to Theory of Computation  
Section : 3  
Date : 20 February 2025

# Worst Case NFA to DFA Conversion

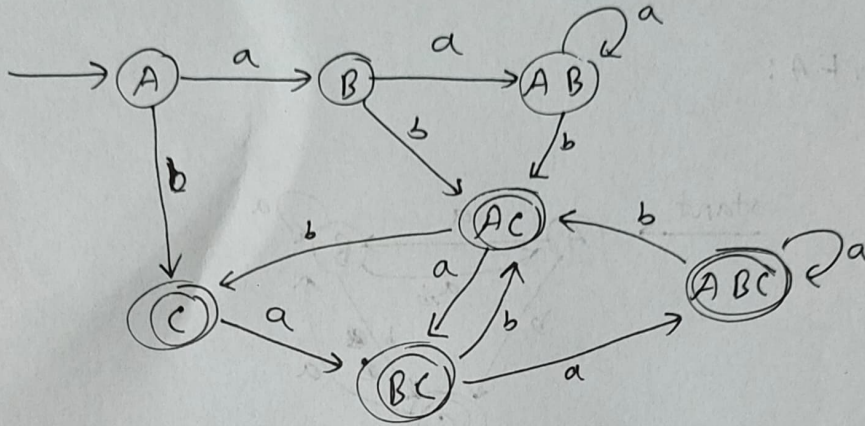
NFA  $\Rightarrow$  DFA-1:

NFA:

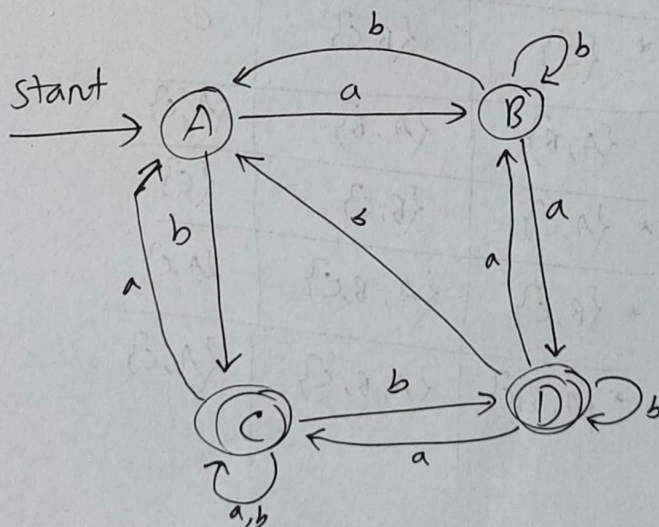


	a	b
$\rightarrow \{A\}$	$\{B\}$	$\{C\}$
$\{B\}$	$\{A, B\}$	$\{A, C\}$
$* \{C\}$	$\{B, C\}$	$\emptyset$
$\{A, B\}$	$\{A, B\}$	$\{A, C\}$
$* \{A, C\}$	$\{B, C\}$	$\{C\}$
$* \{B, C\}$	$\{A, B, C\}$	$\{A, C\}$
$* \{A, B, C\}$	$\{A, B, C\}$	$\{A, C\}$

DFA:

NFA  $\Rightarrow$  DFA-2:

NFA:





$\rightarrow \{A\}$	$\{B\}$	$\{C\}$
$\{B\}$	$\{D\}$	$\{A, B\}$
$\{C\}$	$\{A, C\}$	$\{C, D\}$
$\{D\}$	$\{B, C\}$	$\{A, D\}$
$\{A, B\}$	$\{B, D\}$	$\{A, B, C\}$
$\{A, C\}$	$\{A, B, C\}$	$\{C, D\}$
$\{A, D\}$	$\{B, C\}$	$\{A, C, D\}$
$\{B, C\}$	$\{A, C, D\}$	$\{A, B, C, D\}$
$\{B, D\}$	$\{B, C, D\}$	$\{A, B, D\}$
$\{C, D\}$	$\{A, B, C\}$	$\{A, C, D\}$
$\{A, B, C\}$	$\{A, B, C, D\}$	$\{A, B, C, D\}$
$\{A, B, D\}$	$\{B, C, D\}$	$\{A, B, C, D\}$
$\{A, C, D\}$	$\{A, B, C\}$	$\{A, C, D\}$
$\{B, C, D\}$	$\{A, B, C, D\}$	$\{A, B, C, D\}$
$\{A, B, C, D\}$	$\{A, B, C, D\}$	$\{A, B, C, D\}$

DFA:

