MIRPUR UNIVERSITY OF SCIENCE AND TECHNOLOGY (MUST), MIRPUR
DEPARTMENT OF SOFTWARE ENGINEERING

Formal Methods in Software Engineering

## Lecture [11]: Conversion of NFA to DFA

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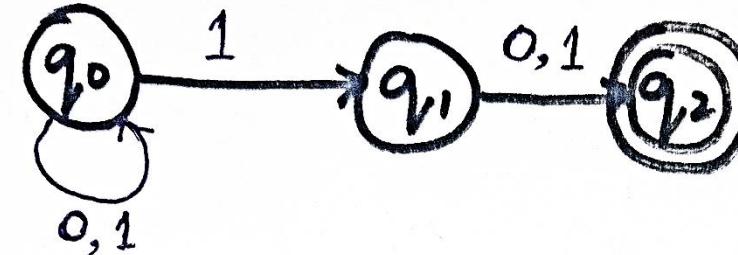
(Lecturer)

Topics discussed in Today's Lectures

- Conversion of NFA to DFA

- Examples of Conversion of NFA to DFA

# Conversion of NFA to DFA – Example 1

- Given NFA
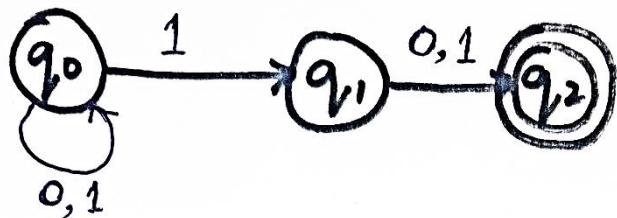
- Truth Table of NFA

❖ Taught in Class on whiteboard

States	0	1
→ q_0	q_0	$q_0 q_1$
q_1	q_2	q_2
q_2	—	—

- New States of DFA and

its Truth Table of NFA

States	0	1
→ q_0	q_0	$q_0 q_1$
q_1	q_2	q_2
q_2	—	—

States	0	1
→ q_0	q_0	$q_0 q_1$
$q_0 q_1$	q_0, q_2	q_0, q_1, q_2
q_0, q_2	q_0	q_0, q_1
$q_0 q_1 q_2$	$q_0 q_2$	$q_0 q_1 q_2$

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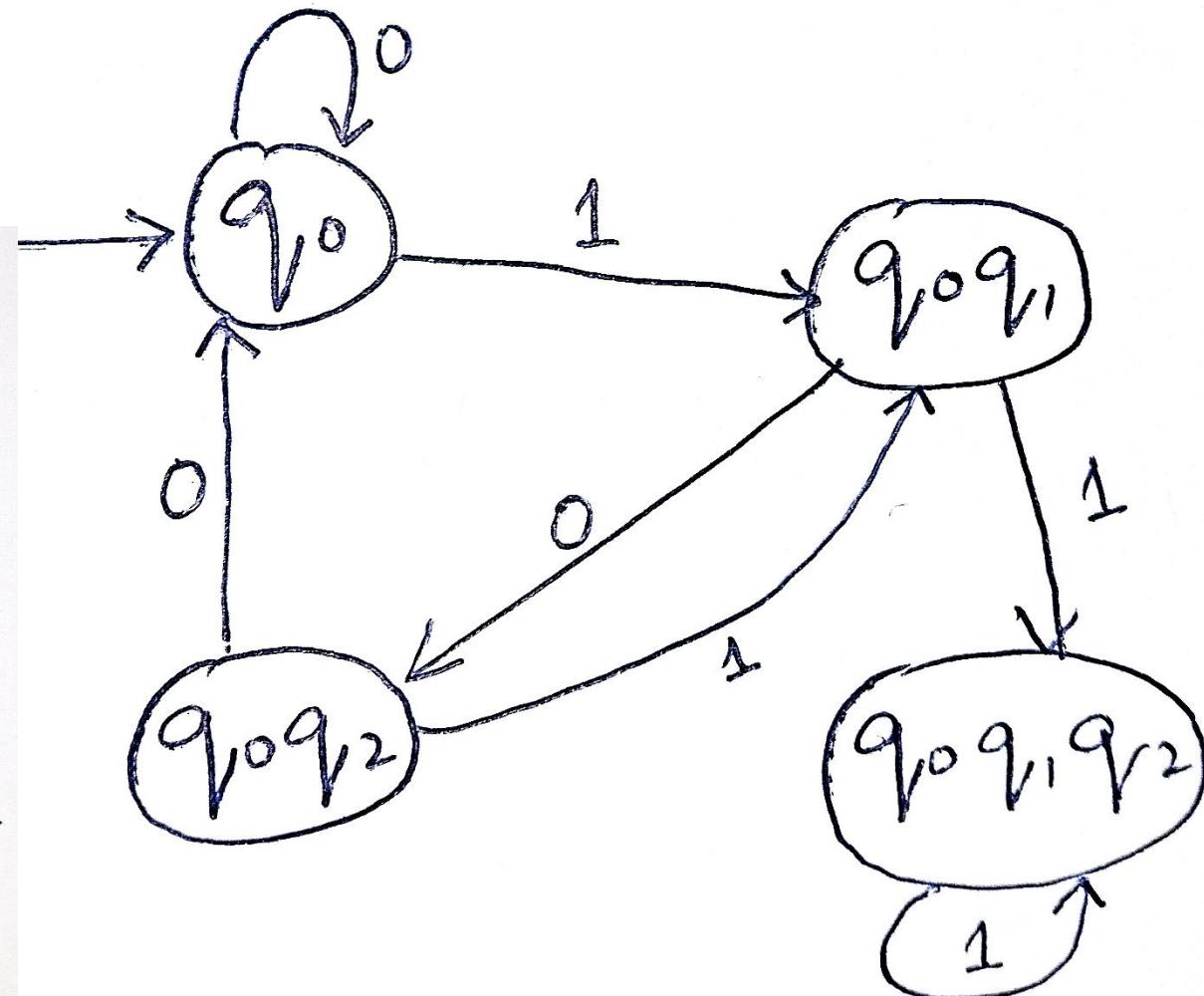
- Final DFA obtained

States	0	1
→ q_0	q_0	$q_0 q_1$
$q_0 q_1$	q_0, q_2	q_0, q_1, q_2
q_0, q_2	q_0	q_0, q_1
$q_0 q_1 q_2$	$q_0 q_2$	$q_0 q_1 q_2$
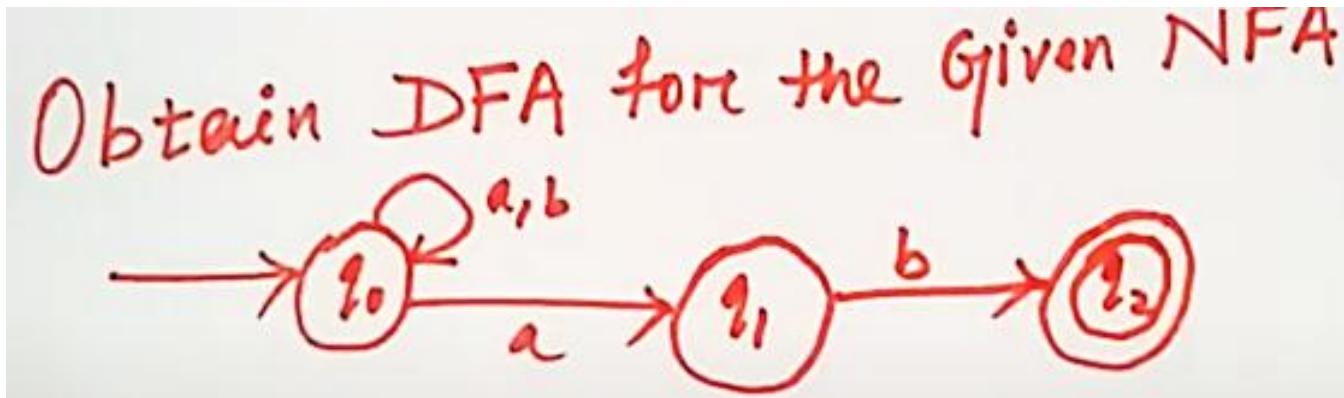
Conversion of NFA to DFA - Example 2

- Given NFA

- Given NFA

→ Truth Table
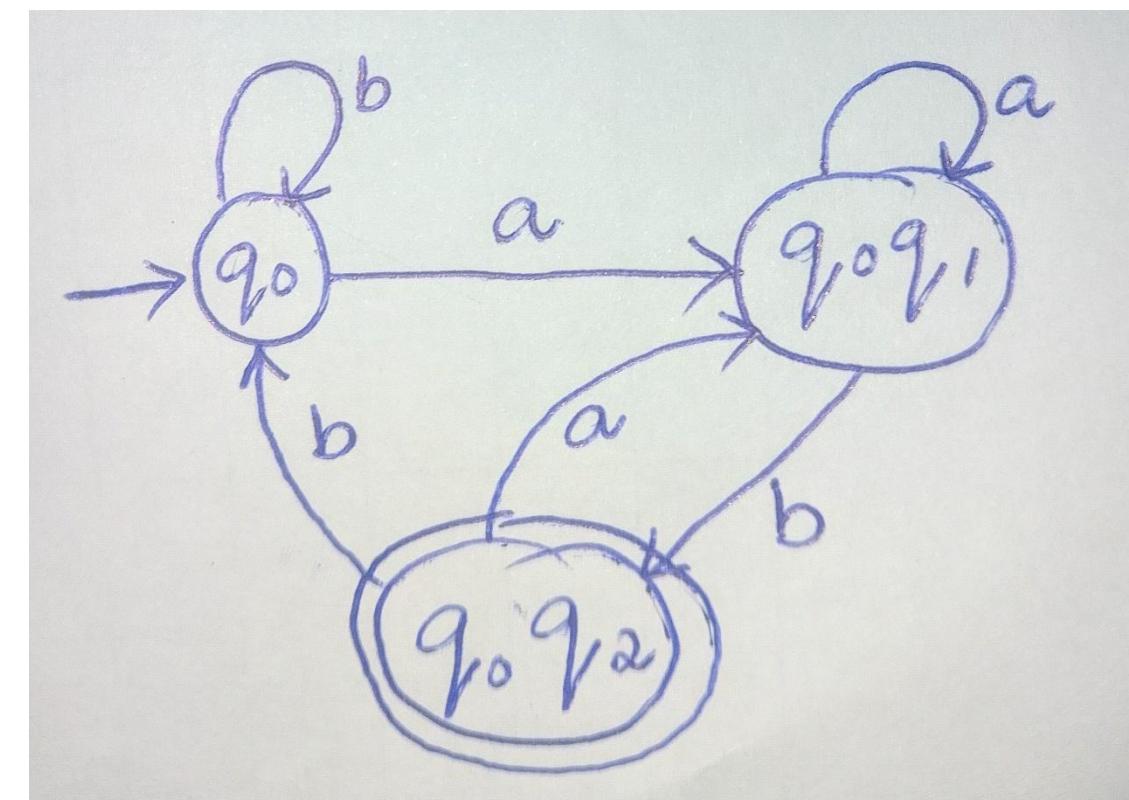
→Resultant DFA from NFA

THANKS