

Regular Language Models Part-5



Regular Language Models Part-5

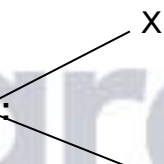
Content :

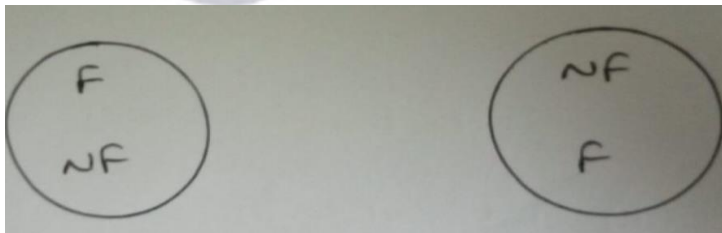
1. Distinguishable state
2. Non- Distinguishable state
3. Questions on minimization of DFA
4. Questions on minimization of NFA

FA/DFA Minimization:

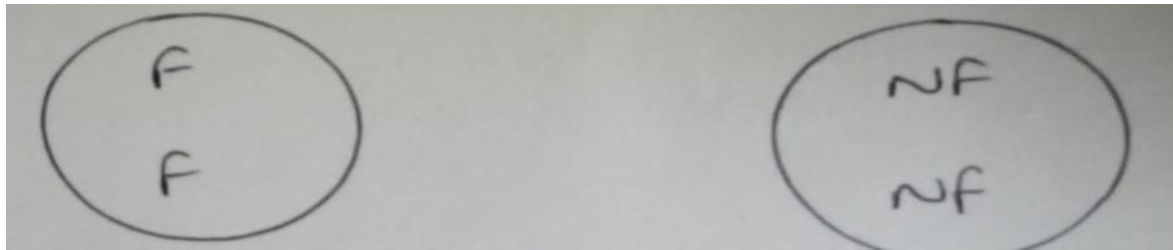
Distinguishable states: Are those in which one state is ending on final and another state on the non-final

Non-Distinguishable : Are those in which both are ending on the final state or both are ending on non-final state.

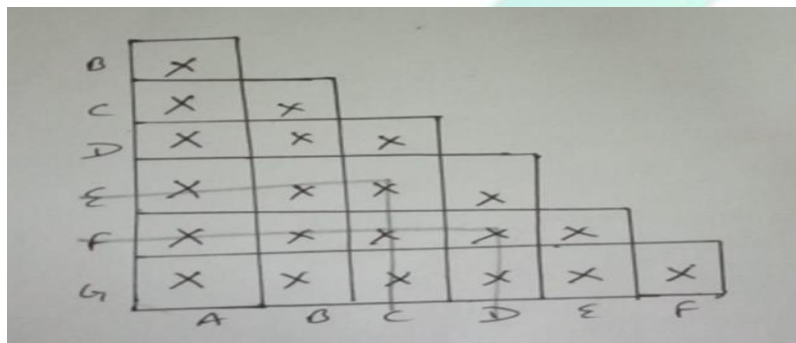
Distinguishable: 
X
N.D.



NON Distinguishable:



	0	1
A	B	C
B	*D	E
C	*F	*G
*D	*D	E
E	*F	*G
*F	*D	E
*g	*f	*g

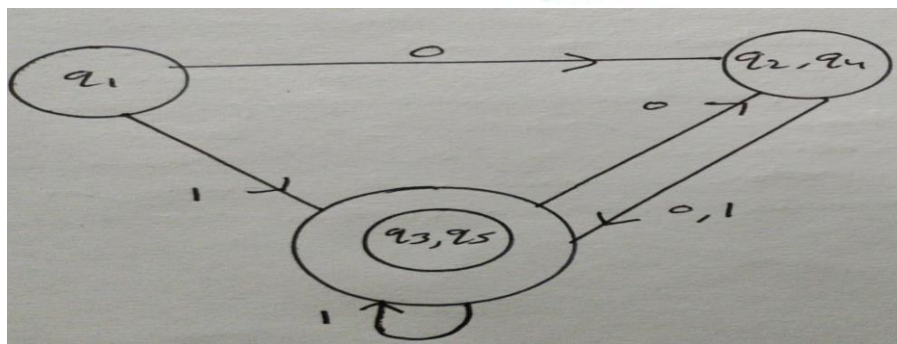
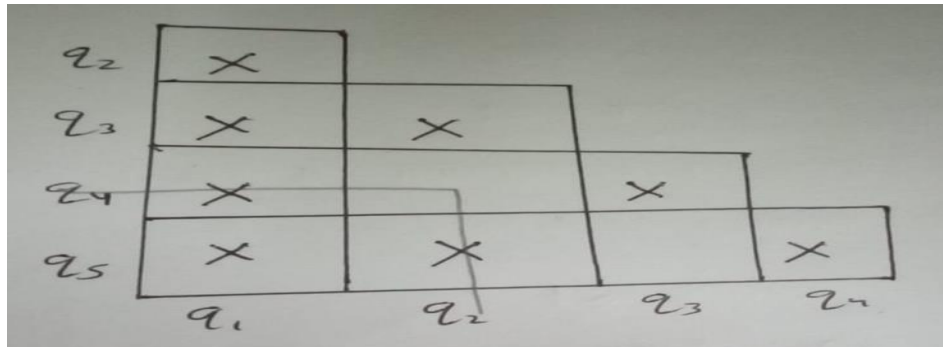


The diagram shows a DFA with the following transitions:

- A to C, E: labeled 1
- B to A: labeled 0
- B to C, E: labeled 1
- B to D, F: labeled 0
- C, E to D, F: labeled 0
- D, F to C, E: labeled 1
- D, F to G: labeled 0
- G to G: labeled 1 (self-loop)

Q.

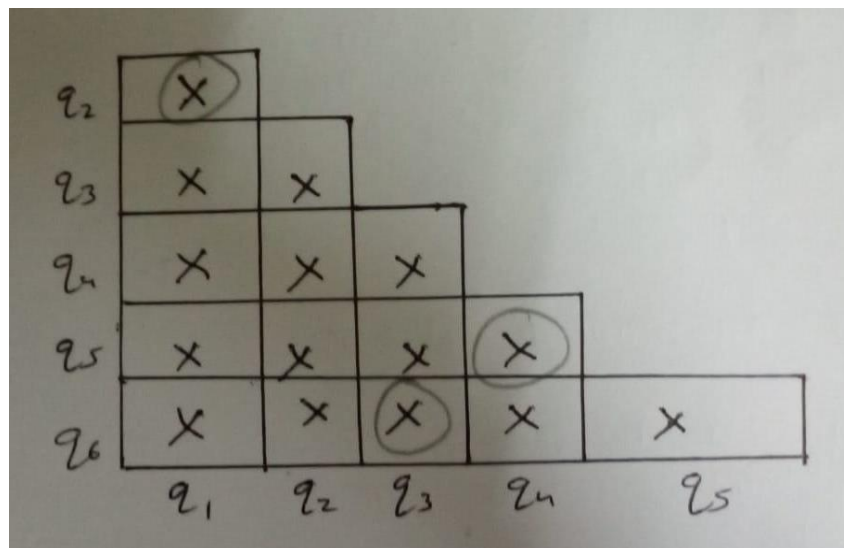
∂	0	1
$\rightarrow q_1$	q_2	$*q_3$
q_2	$*q_3$	$*q_3$
$*q_3$	q_4	$*q_3$
q_4	$*q_3$	$*q_3$
$*q_5$	q_2	$*q_3$



Q.

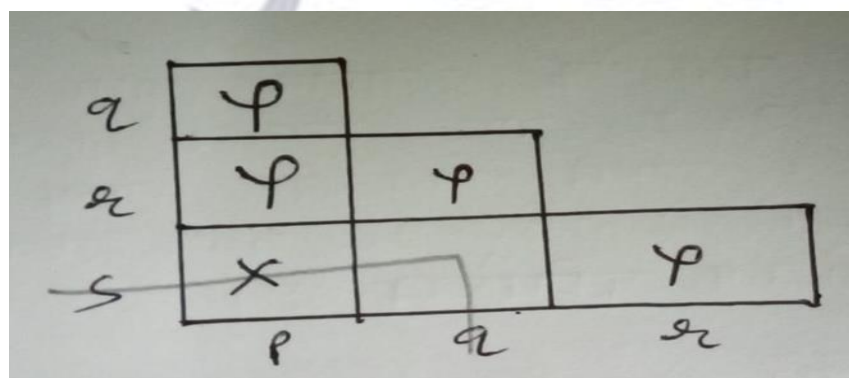
	0	1
$\rightarrow q_1$	q_2	$*q_6$
q_2	$*q_1$	$*q_3$
$*q_3$	q_2	$*q_4$
q_4	$*q_4$	$*q_2$
q_5	q_4	$*q_5$
$*q_6$	q_5	q_4

Since all entries are crossed it is already minimized hence the number of states = 6 only



NFA:

	a	b
$\rightarrow p$	---	q
q	*r	s
*r	*r	s
s	*r	s



$\rightarrow Z_1(p)$		$Z_2(q)$
$Z_2(q)$	$+Z_3(r)$	$Z_4(s)$
$+Z_3(r)$	$+Z_3(r)$	$Z_4(s)$
$Z_4(s)$	$+Z_3(r)$	$Z_4(s)$



Gradeup UGC NET Super Superscription

Features:

1. 7+ Structured Courses for UGC NET Exam
2. 200+ Mock Tests for UGC NET & MHSET Exams
3. Separate Batches in Hindi & English
4. Mock Tests are available in Hindi & English
5. Available on Mobile & Desktop

Gradeup Super Subscription, Enroll Now