

CS 419

Compiler

Project

Form

Project Idea:

... Project#3

Language.....

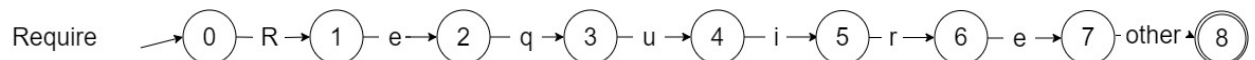
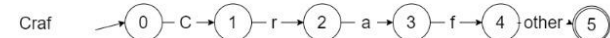
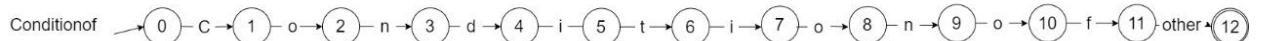
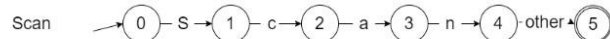
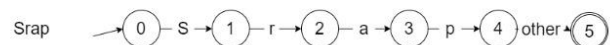
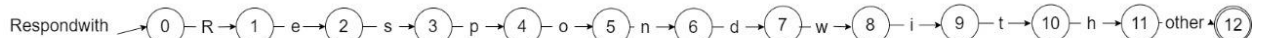
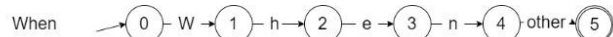
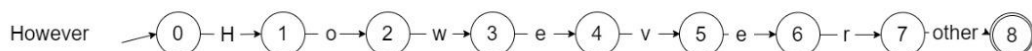
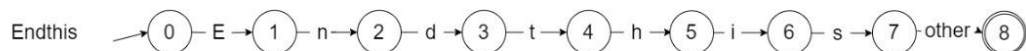
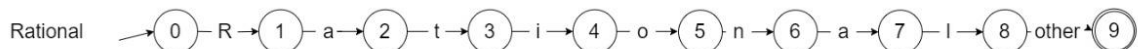
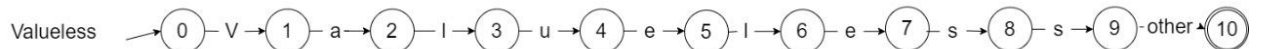
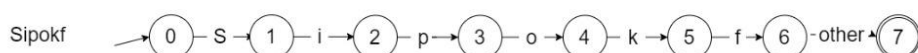
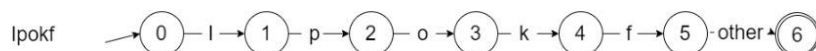
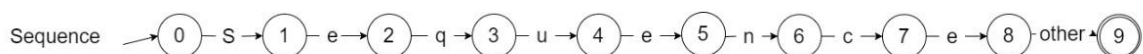
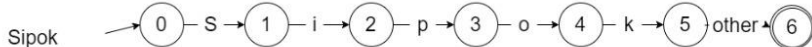
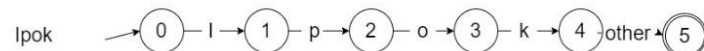
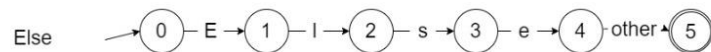
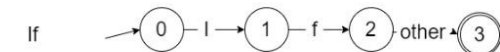
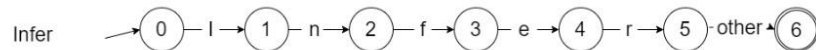
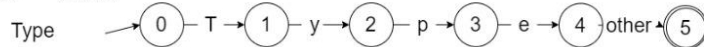
Team Members NO#:23.....

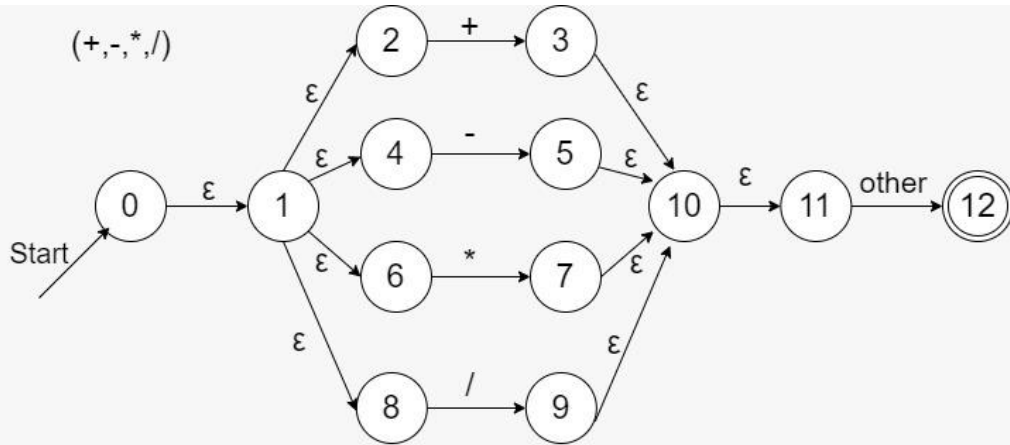
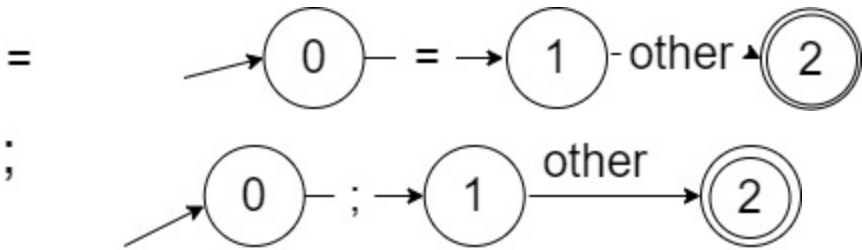
ID	Name	Level& Department	Section(Day- from-to)	Role (Lead/Member)	Grade
201900435	عبدالرحمن محمد فاروق فؤاد	3-Cs	Thursday 8 to 10 am	Leader	
201900348	سلمى سمير عبدالفتاح محمد	3-Cs	Wednesday 12 to 2pm	Member	
201900845	ممدوح عمر ممدوح عمر مشعل	3-Cs	Wednesday 2 to 4 pm	Member	
201900855	مهران اشرف محمد مصطفى	3-Cs	Wednesday 2 to 4 pm	Member	
201900500	عمر احمد عبدالعزيز يونس	3-Cs	Thursday 8 to 10 am	Member	
201900117	ادهم سيد محمد توفيق	3-Cs	Wednesday 10am to 12 pm	Member	
201900362	سيف الدين احمد سيف	3-Cs	Wednesday 10am to 12 pm	Member	

Regular Expression, Finite automata and Conversion

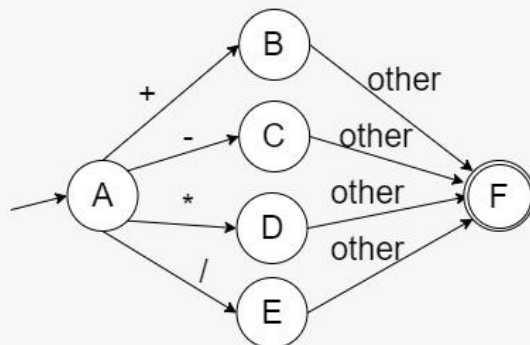
from RegX to NFA, NFA to DFA:

RE → DFA

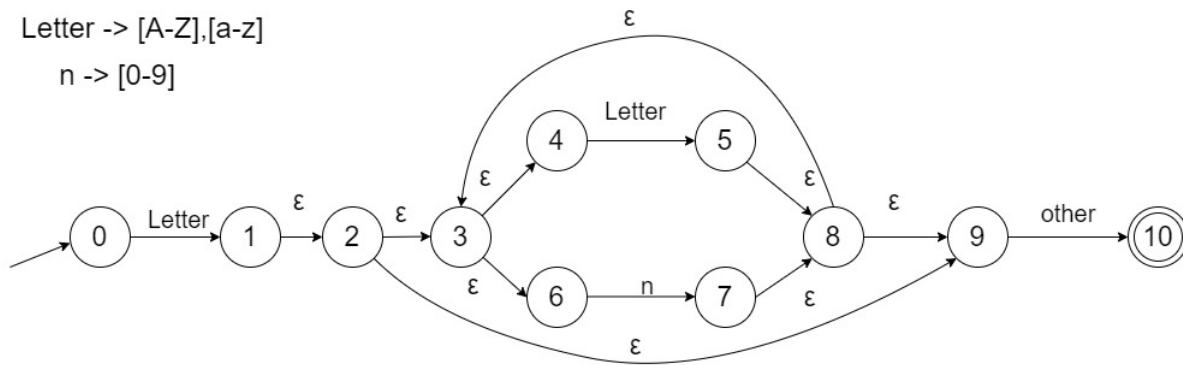




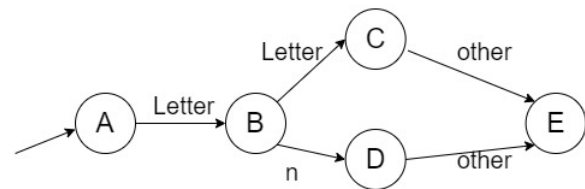
	NFA State	DFA State
{0}	{0,1,2,4,6,8}	A
{3}	{3,10,11}	B
{5}	{5,10,11}	C
{7}	{7,10,11}	D
{9}	{9,10,11}	E
{12}	{12}	F



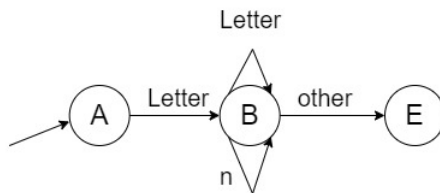
Identifier
 Letter -> [A-Z],[a-z]
 n -> [0-9]



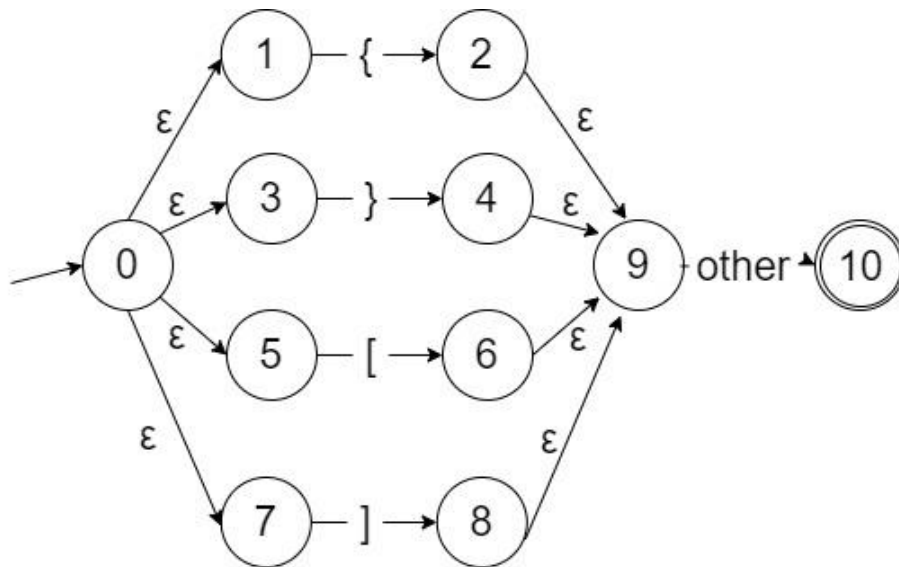
	NFA State	DFA State
{0}	{0}	A
{1}	{1,2,3,4,6,9}	B
{5}	{5,8,9}	C
{7}	{7,8,9}	D
{10}	{10}	E



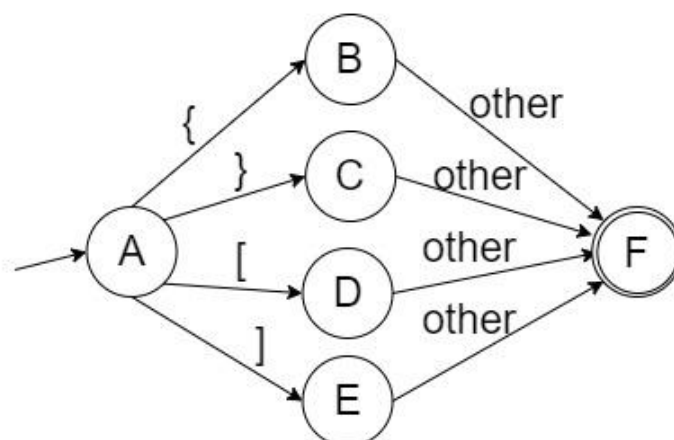
Minimizing the Number of States

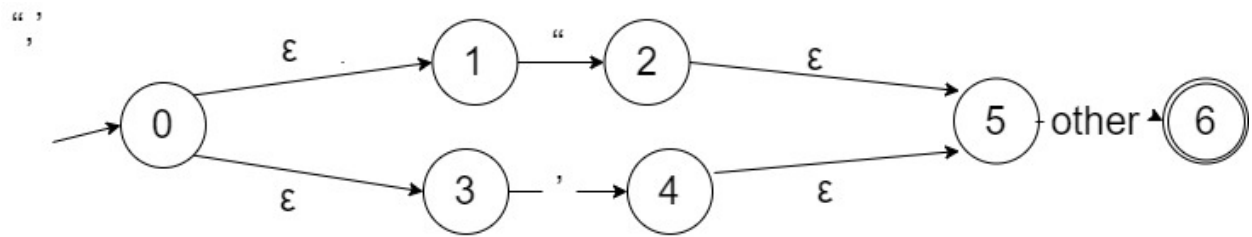


{,},[,]

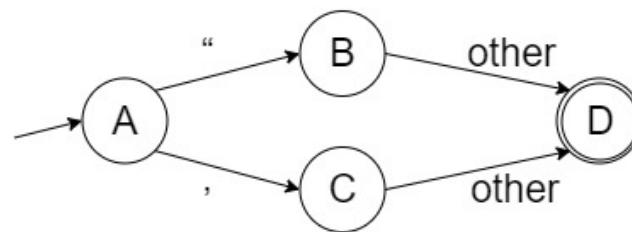


	NFA State	DFA State
{0}	{0,1,3,5,7}	A
{2}	{2,9}	B
{4}	{4,9}	C
{6}	{6,9}	D
{8}	{8,9}	E
{10}	{10}	F

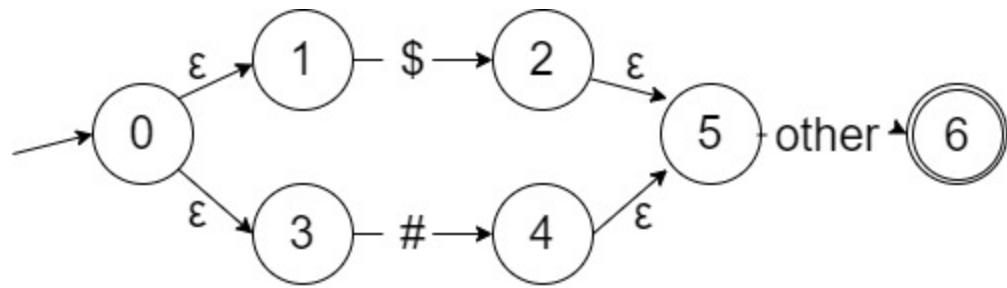




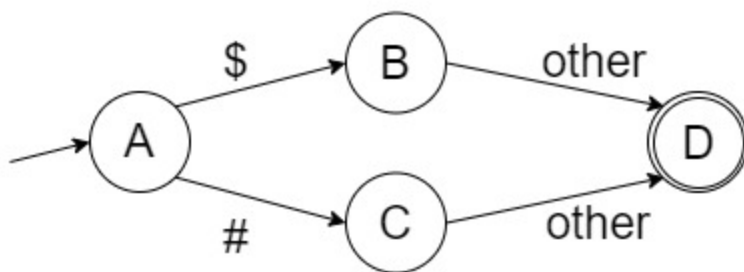
	NFA State	DFA State
[A,“]	{0,1,3}	A
[A,“]	{2}	B
[A,']	{4}	C
	{6}	D

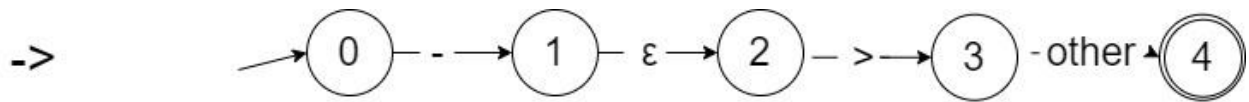


$\$| \#$

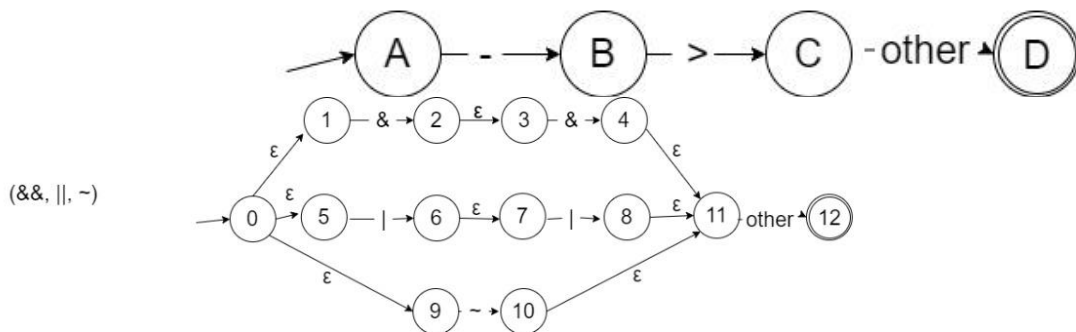


		NFA State	DFA State
	{0}	{0,1,3}	A
[A,\$]	{2}	{2,5}	B
[A,#]	{4}	{4,5}	C
	{6}	{6}	D



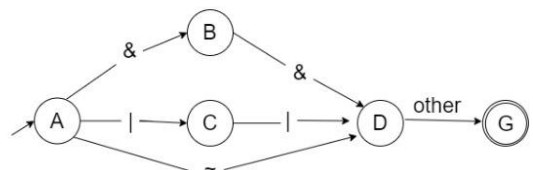
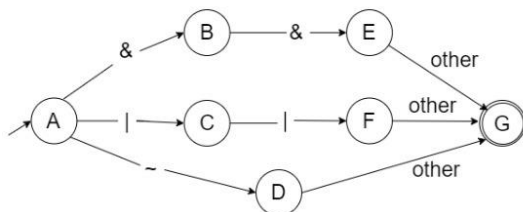


	NFA State	DFA State
[A,-]	{0}	A
[A,-]	{1}	B
[A,-]	{3}	C
[A,-]	{4}	D



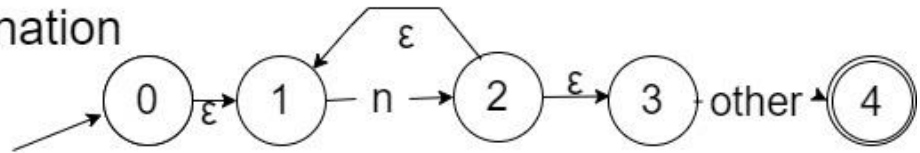
	NFA State	DFA State
[A,&]	{0}	A
[A,&]	{2}	B
[A,]	{6}	C
[A,~]	{10}	D
[B,&]	{4}	E
[C,]	{8}	F
[C,]	{12}	G

Minimizing the Number of States

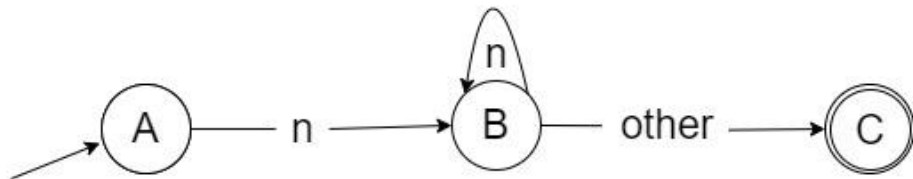


[0-9]
and any combination

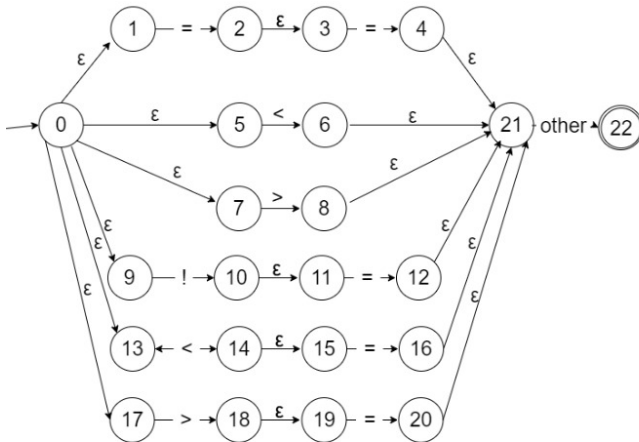
$n \rightarrow [0-9]$



	NFA State	DFA State
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{2}	{1,2,3}	B
{4}	{4}	C

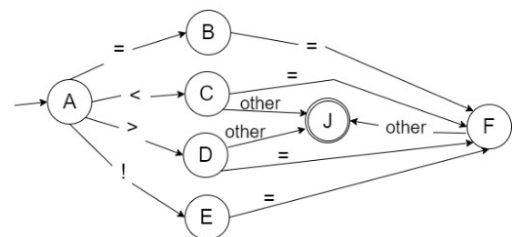
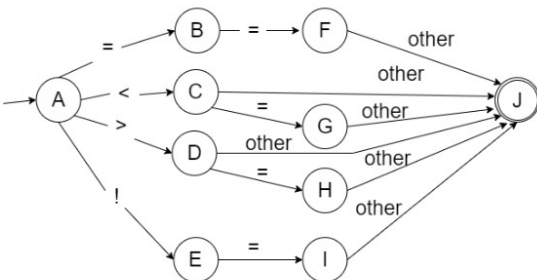


(==, <, >, !=, <=, >=)

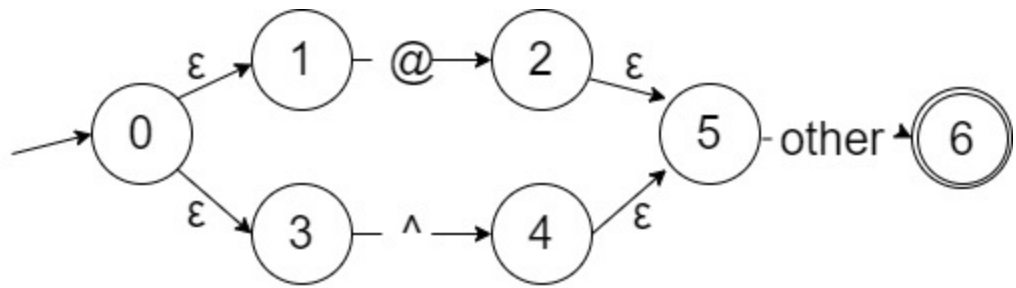


	NFA State	DFA State
{0}	{0,1,5,7,9,13,17}	A
{2}	{2,3}	B
[A,<]	{6,14}	C
[A,>]	{8,18}	D
[A,!]	{10}	E
[B,=]	{4}	F
[C,=]	{16}	G
[D,=]	{20}	H
[E,=]	{12}	I
	{22}	J

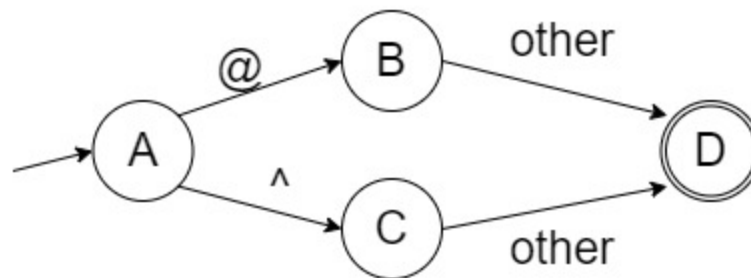
Minimizing the Number of States

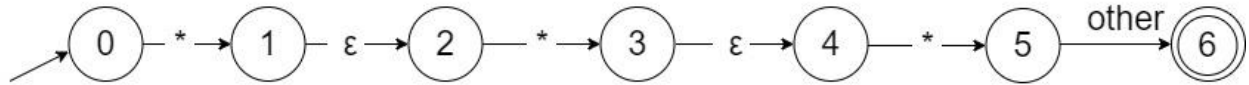


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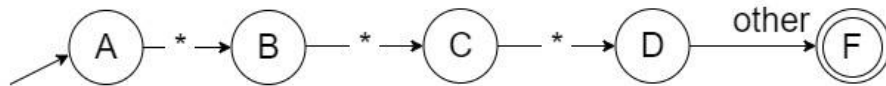


		NFA State	DFA State
[A, @] [A, ^]	{0}	{0,1,3}	A
	{2}	{2,5}	B
	{4}	{4,5}	C
	{6}	{6}	D

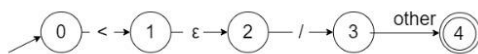




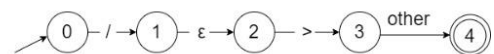
	NFA State	DFA State
{0}	{0}	A
{1}	{1,2}	B
{3}	{3,4}	C
{5}	{5}	D
{6}	{6}	F



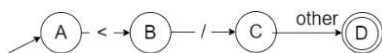
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/>



	NFA State	DFA State
{0}	{0}	A
{1}	{1,2}	B
{3}	{3}	C
{4}	{4}	D



	NFA State	DFA State
{0}	{0}	A
{1}	{1,2}	B
{3}	{3}	C
{4}	{4}	D



