

CSE 420 Assignment -1

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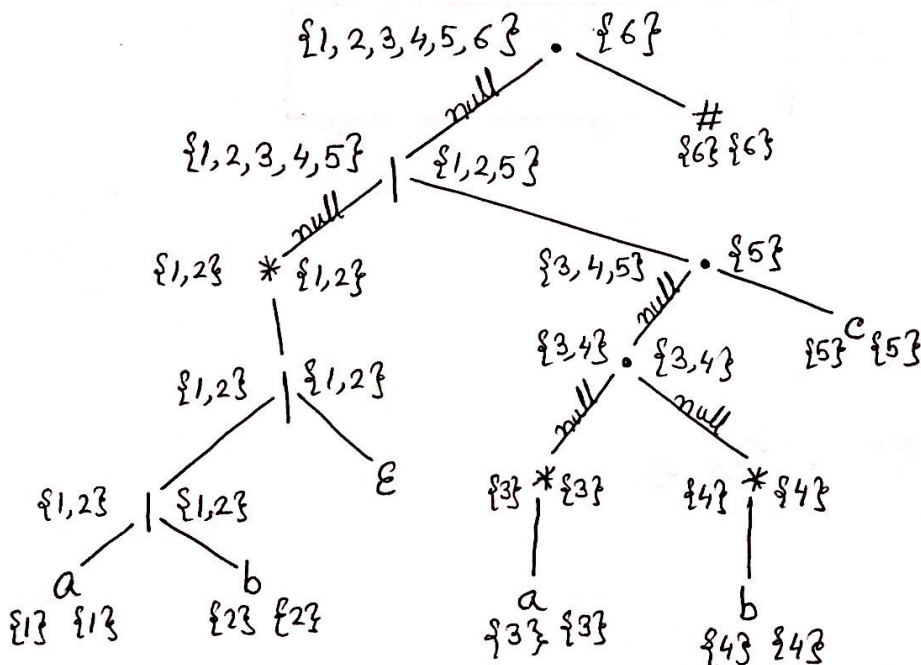
Sec: 03 (TNR)

Q. Convert the following RegEx over $\Sigma = \{a, b, c\}$ to DFA using Direct Method.

RE: $(a|b|\epsilon)^* | (a^*.b^*).c$

Answer: ARE: $((a|b|\epsilon)^* | (a^*.b^*).c) \#$

1 2 3 4 5 6



Symbol	Node	Followpos
a	1	{1,2,6}
b	2	{1,2,6}
a	3	{3,4,5}
b	4	{4,5}
c	5	{6}
#	6	—

Dstate	a	b	c
$\rightarrow \{1,2,3,4,5,6\}^*$ $\equiv A$	$\{1,2,3,4,5,6\}$ $\equiv A$	$\{1,2,4,5,6\}$ $\equiv B$	$\{6\}$ $\equiv C$
$\{1,2,4,5,6\}^*$ $\equiv B$	$\{1,2,6\}$ $\equiv D$	$\{1,2,4,5,6\}$ $\equiv B$	$\{6\}$ $\equiv C$
$\{6\}^* \equiv C$	—	—	—
$\{1,2,6\}^* \equiv D$	$\{1,2,6\} \equiv D$	$\{1,2,6\} \equiv D$	—

