

1. Diberikan Regular Expression (RE) berikut ini:

$$x(xy|yx)^+ x^* y$$

a. Tentukanlah followups dalam RE tersebut.

$$X \cdot (x \cdot y \mid y \cdot x)^+ \cdot x^* \cdot y \cdot \#$$

1
2
3
4
5
6
7
8

Followups [1] = 2, 4

Follow pos [2] = 3

Follow pos[3] = 2, 4, 6, 7

Follow pos [4] = 5

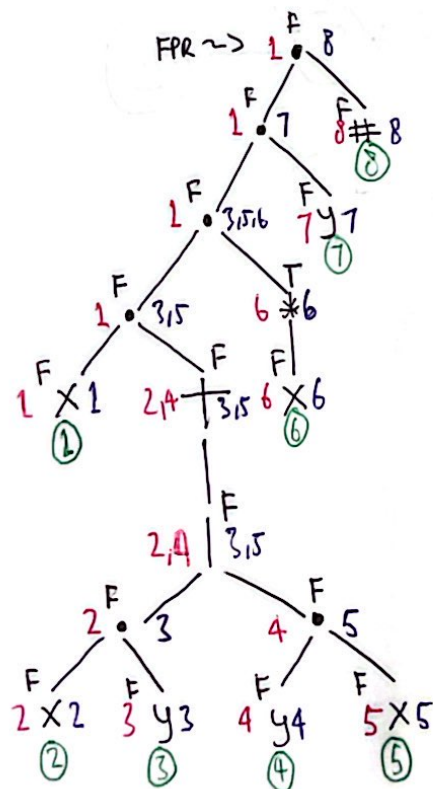
Followups [5] = 2, 4, 6, 7

Followupos[6] = 6, 7

Followups [7] = 8

Follow up [8] is -

b. Buatlah syntax tree lengkap dengan firstpos, lastpos, dan nullable.



C. Buatlah tabel DFA dan gambarkan hasil dari DFA tersebut.

	Input	
State	x	y
$\rightarrow 1 (s_0)$	2, 4 (s_1)	—
2, 4 (s_1)	3 (s_2)	5 (s_3)
3 (s_2)	—	2, 4, 6, 7 (s_4)
5 (s_3)	2, 4, 6, 7 (s_4)	—
2, 4, 6, 7 (s_4)	3, 6, 7 (s_5)	5, 8 (s_6) [*]
3, 6, 7 (s_5)	6, 7 (s_7)	2, 4, 6, 7, 8 (s_8) [*]
5, 8 (s_6) [*]	2, 4, 6, 7 (s_4)	—
6, 7 (s_7)	6, 7 (s_7)	8 (s_9)
2, 4, 6, 7, 8 (s_8) [*]	3, 6, 7 (s_5)	5, 8 (s_6)
8 (s_9) [*]	—	—

