



编译原理

好好学习!!! 天天向上!!!

任课老师: 谢晓园 邮箱: xxie@whu.edu.cn 办公室: 计算机学院E301

助教: 黎源 邮箱: 1445660426@qq.com

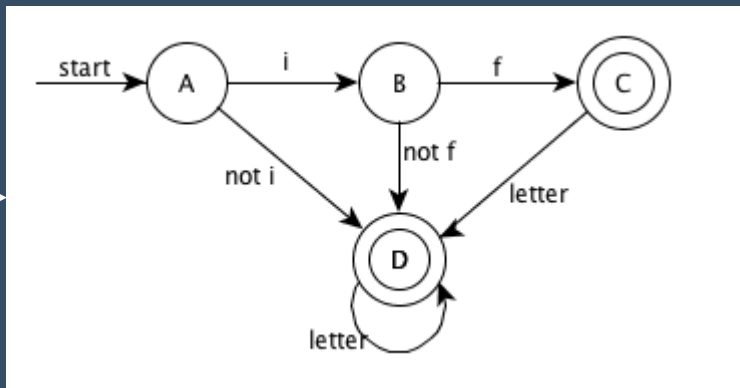
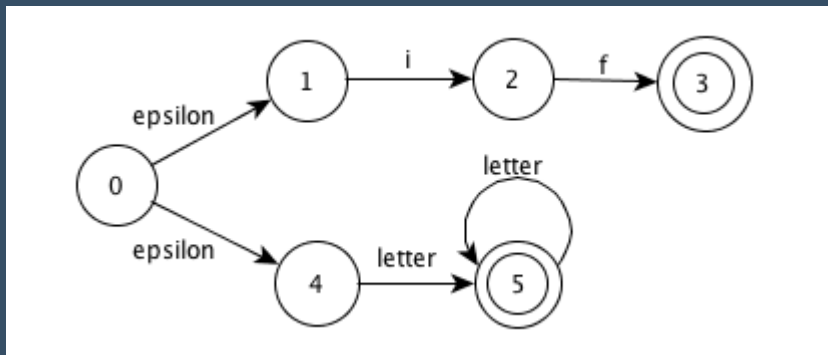


P109 3.8.1

假设我们有2个词法单元：(1)关键字if，(2)标识符，它表示除if之外的所有由字母组成的串。请给出：

- 1)识别这些词法单元的NFA
- 2)识别这些词法单元的DFA

NOTE: this NFA has potential conflict, we can decide the matched lexeme by 1. take the longest
2. take the first listed.



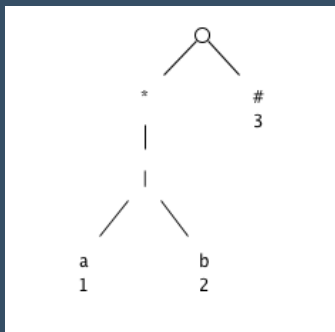


P118 3.9.2

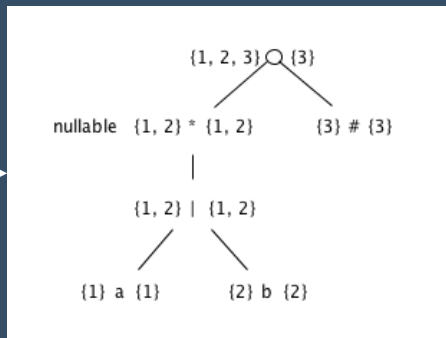
使用算法3.36将练习3.7.3中的正则表达式转化成DFA

We can prove that two regular expressions are equivalent by showing that their minimum-state DFA 's are the same up to renaming of states. Show in this way that the following regular expressions: $(a|b)^*$, $(a^*|b^*)^*$, and $((\epsilon|a)b^*)^*$ are all equivalent.

1) $(a|b)^*$



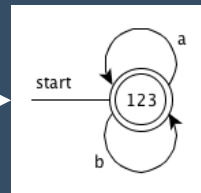
Syntax tree



firstpos and lastpos for nodes in the syntax tree

node n	followpos(n)
1	{1, 2, 3}
2	{1, 2, 3}
3	\emptyset

The function followpos

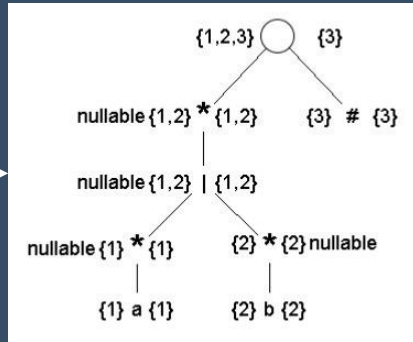
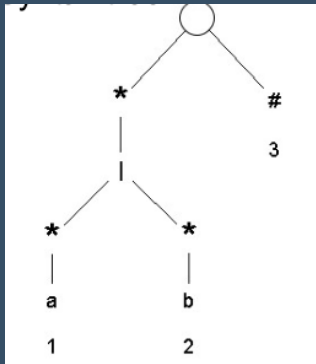


DFA

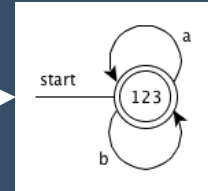


P118 3.9.2

2) $(a^*|b^*)^*$



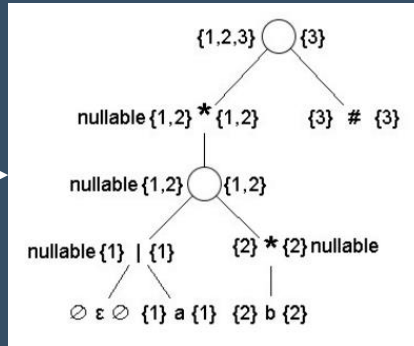
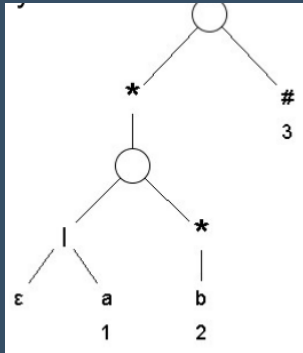
node n	followpos(n)
1	{1, 2, 3}
2	{1, 2, 3}
3	\emptyset



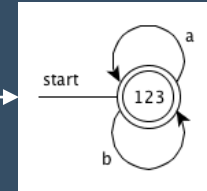


P118 3.9.2

3) $((\epsilon|a)|b^*)^*$



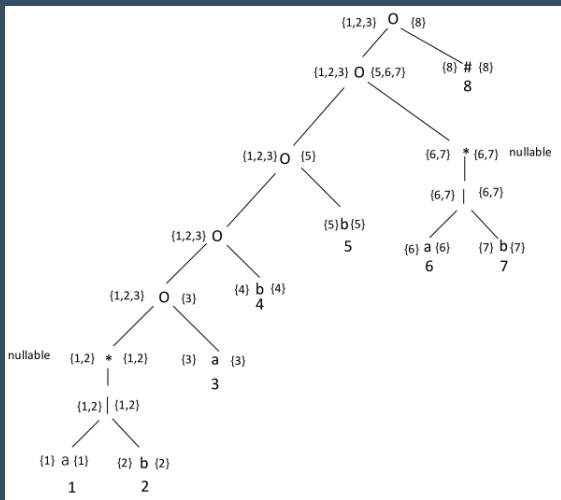
node n	followpos(n)
1	{1, 2, 3}
2	{1, 2, 3}
3	\emptyset



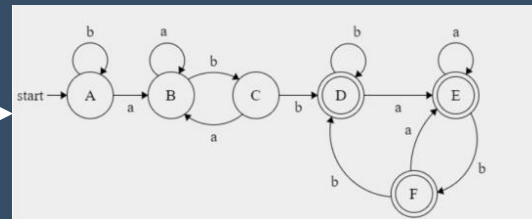


P118 3.9.2

4) $(a|b)^*abb(a|b)^*$



位置 n	followpos (n)
1	{1,2,3}
2	{1,2,3}
3	{4}
4	{5}
5	{6,7,8}
6	{6,7,8}
7	{6,7,8}
8	\emptyset





THANK YOU

Everyone has his inherent ability which is easily concealed by habits, blurred by time, and eroded by laziness.

——每个人都有潜能，只是很容易被习惯所掩盖，被时间所迷离，被惰性所消磨。