



班级: 计01

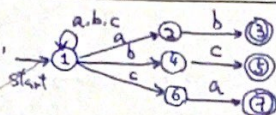
姓名: 袁逸朗

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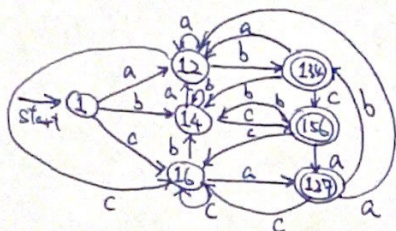
科目: 自动机

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2.4.2 (c) 先构造 NFA,



再构造 DFA.

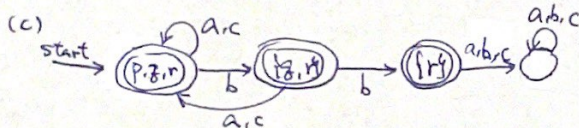


2.5.2 (a)  $ENCLOSE(p) = \{p, q, r\}$

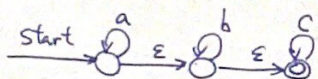
$ENCLOSE(q) = \{q\}$

$ENCLOSE(r) = \{r\}$

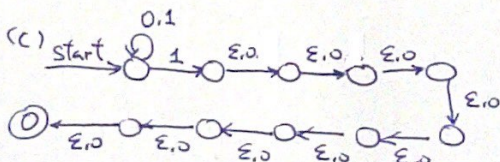
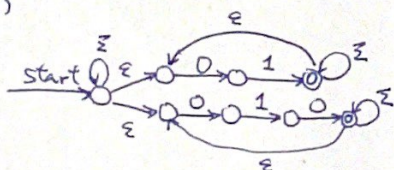
(b)  $\varepsilon, a, b, c, aa, ab, ac, ba, bb, bc, ca, cb, cc, aab, abc, aba, abb, abc, acc, baa, bab, bac, bca, bcb, bcc, caa, cab, cac, cba, cbb, cbc, cca, ccb, ccc.$



2.5.3 (a)



(b)



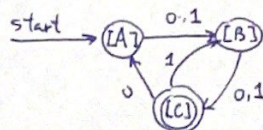
4.4.2 (a)

B	X							
C	X	X						
D			X	X				
E	X			X	X			
F	X	X		X	X			
G			X	X		X	X	
H	X		X	X		X	X	
I	X	X		X	X		X	X
	A	B	C	D	E	F	G	H

(b) 等价类:  $[A] = \{A, D, G\}$

$[B] = \{B, E, H\}$

$[C] = \{C, F, I\}$  有:



3.2.1 (c) 先计算  $R_{ij}^{(0)}, R_{ij}^{(1)}$

$R_{ij}^{(k)}$	$R_{ij}^{(0)}$	$R_{ij}^{(1)}$
$R_{11}$	$\varepsilon + 1$	$(\varepsilon + 1) + (\varepsilon + 1) \cdot (\varepsilon + 1)^* (\varepsilon + 1) = 1^*$
$R_{12}$	0	$0 + (\varepsilon + 1) (\varepsilon + 1)^* 0 = 1^* 0$
$R_{13}$	$\phi$	$\phi + (\varepsilon + 1) (\varepsilon + 1)^* \phi = \phi$
$R_{21}$	1	$1 + 1 (\varepsilon + 1)^* (\varepsilon + 1) = 11^*$
$R_{22}$	$\varepsilon$	$\varepsilon + 1 (\varepsilon + 1)^* 0 = \varepsilon + 11^* 0$
$R_{23}$	0	$0 + 1 (\varepsilon + 1)^* \phi = 0$
$R_{31}$	$\phi$	$\phi + \phi (\varepsilon + 1)^* (\varepsilon + 1) = \phi$
$R_{32}$	1	$1 + \phi (\varepsilon + 1)^* 0 = 1$
$R_{33}$	$\varepsilon + 0$	$\varepsilon + 0 + \phi (\varepsilon + 1)^* \phi = \varepsilon + 0$

故

$$R_{11}^{(2)} = 1^* + 1^* 0 \cdot (\varepsilon + 11^* 0)^* 11^* = 1^* + 1^* 0 (11^* 0)^* 11^*$$

$$R_{12}^{(2)} = 1^* 0 + 1^* 0 (\varepsilon + 11^* 0)^* (\varepsilon + 11^* 0) = 1^* 0 (11^* 0)^*$$

$$R_{13}^{(2)} = \phi + 1^* 0 (\varepsilon + 11^* 0)^* 0 = 1^* 0 (11^* 0)^* 0$$

$$R_{21}^{(2)} = 11^* + (\varepsilon + 11^* 0) (\varepsilon + 11^* 0)^* 11^* = (11^* 0)^* 11^*$$

$$R_{22}^{(2)} = \varepsilon + 11^* 0 + (\varepsilon + 11^* 0) (\varepsilon + 11^* 0)^* (\varepsilon + 11^* 0) = (11^* 0)^*$$

$$R_{23}^{(2)} = 0 + (\varepsilon + 11^* 0) (\varepsilon + 11^* 0)^* 0 = (11^* 0)^* 0$$

$$R_{31}^{(2)} = \phi + 1 (\varepsilon + 11^* 0)^* 11^* = 1 (11^* 0)^* 11^*$$

$$R_{32}^{(2)} = 1 + 1 (\varepsilon + 11^* 0)^* (\varepsilon + 11^* 0) = 1 (11^* 0)^*$$

$$R_{33}^{(2)} = \varepsilon + 0 + 1 (\varepsilon + 11^* 0)^* 0 = \varepsilon + 0 + 1 (11^* 0)^* 0$$

3.2.1 (d) 相当于求  $R_{13}^{(3)}$

$$R_{13}^{(3)} = 1^* 0 (11^* 0)^* 0 + 1^* 0 (11^* 0)^* 0 (\varepsilon + 0 + 1 (11^* 0)^* 0)^* (\varepsilon + 0 + 1 (11^* 0)^* 0)$$

$$= 1^* 0 (11^* 0)^* 0 (0 + 1 (11^* 0)^* 0)^*$$





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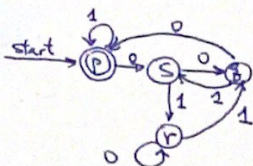
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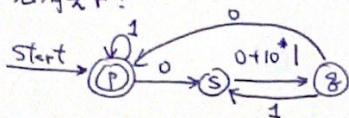
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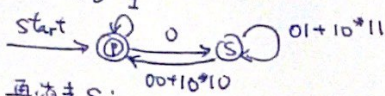
3.2.3



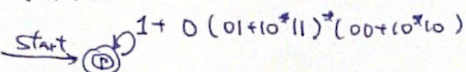
先消去 r:



再消去 s:

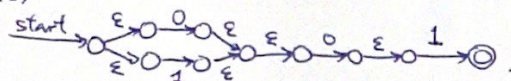


再消去 s:

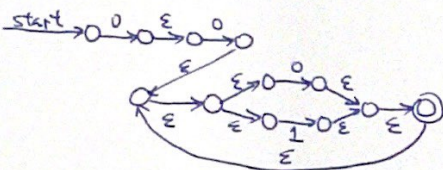


故所求正则表达式为  $(1+0(01+10^*11)^*(00+10^*10))^*$

3.2.4 (b)



3.2.4 (c)



3.2.6 (a).  $L \cdot L^*$

(b)  $L(A)$  中所有字符串后缀组成的集合

(c)  $L(A)$  中所有字符串前缀组成的集合

(d)  $L(A)$  中所有字符串的子串组成的集合.