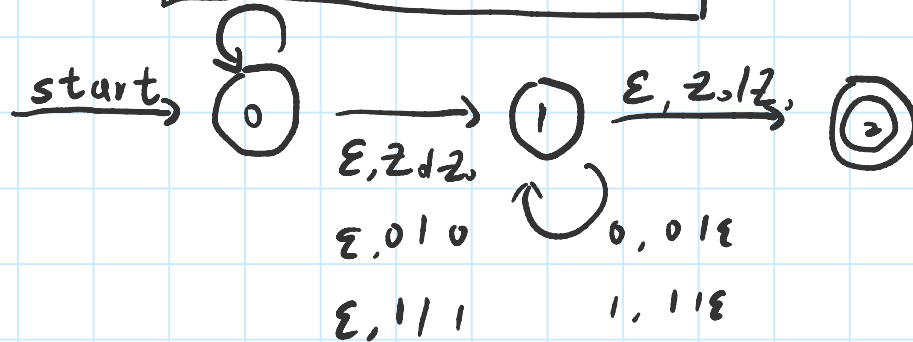


Week 12

Thursday, May 16, 2019

8:01 AM

0, z, 10z,	0, 1/01
1, z, 11z,	1, 0/10
0, 0/00	1, 1/11



11

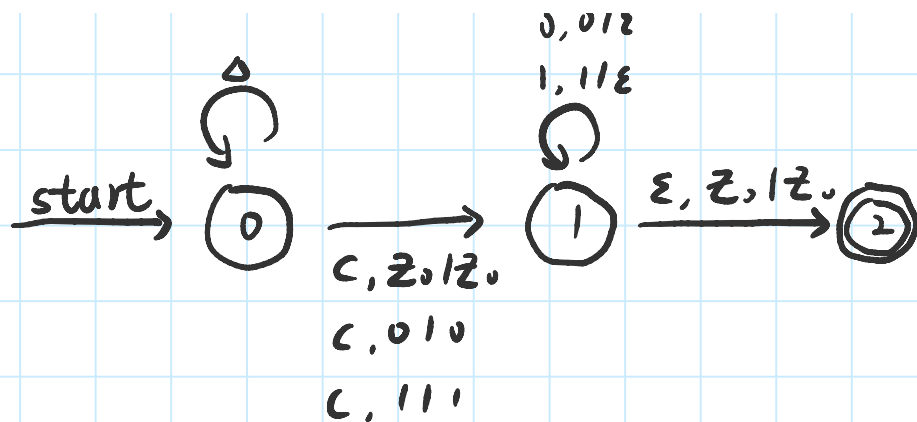
$$(q_0, 11, z_0) \vdash (q_0, 1, 1z_0) \vdash (q_0, \varepsilon, 11z_0)$$

$$(q_0, 11, z_0) \vdash (q_0, 1, 1z_0) \vdash (q_1, 1, 1z_0) \vdash (q_1, \varepsilon, z_0) \vdash (q_2, \varepsilon, z_0)$$

$$w \in w^R \quad P = (\{q_0, q_1, q_2\}, \{0, 1, \varepsilon\}, \{0, 1, z_0\}, \delta, q_0, z_0, \{q_2\})$$



0, 0/ε
1, 1/ε



$|c|$

$$(q_0, |c|, z_0) \vdash (q_0, c, |z_0|) \vdash (q_1, 1, |z_0|) \vdash (q_1, \varepsilon, z_0) \vdash (q_2, \varepsilon, z_0)$$

(当) 当 $\delta'_A(q, w) = p$, 则有 $(q, w, z_0) \vdash^* (p, \varepsilon, z_0)$

基础, 当 $|w| = 1$ 时, 则 w 是单个字符, 存在 $\delta_A(q, w) = p$. 根据定义

$$\delta_p(q, w, z_0) = \{(p, z_0)\}, \text{ 所以 } (q_0, w, z_0) \vdash (p, \varepsilon, z_0)$$

归纳内, 假设 $w = xa$, x 是字符串, a 是单字符, 归纳假设 $\delta'_A(q, x) = p'$,

$$(q, x, z_0) \vdash^* (p', \varepsilon, z_0), \text{ 进一步得到 } (q, w, z_0) \vdash^* (p', a, z_0)$$

$(q, x, z_0) \vdash^* (p', \varepsilon, z_0)$, 进一步得到 $(q, w, z_0) \vdash^* (p', u, z_0)$
 已知 $\delta'_A(q, xa) = p$, $\delta'_A(p', a) = p$, $\delta_p(p', u, z_0) = \{(p, z_0)\}$
 因此 $(q, w, z_0) \vdash^* (p', u, z_0) \vdash (p, \varepsilon, z_0)$

假设 L_{wcw} 是正规语言, 存在常数 n , 假设 $|w| = |w^k| = n$,
 字符串总长度为 $2n+1$, 满足 $|wcw^k| \geq n$

写 xyz , $y \neq \varepsilon$, $|xy| \leq n$, 则 x 必然是 w 的真子串且

$x \neq w$, 则 z 至少包含 cw^k . 可能包含 w 的一部分

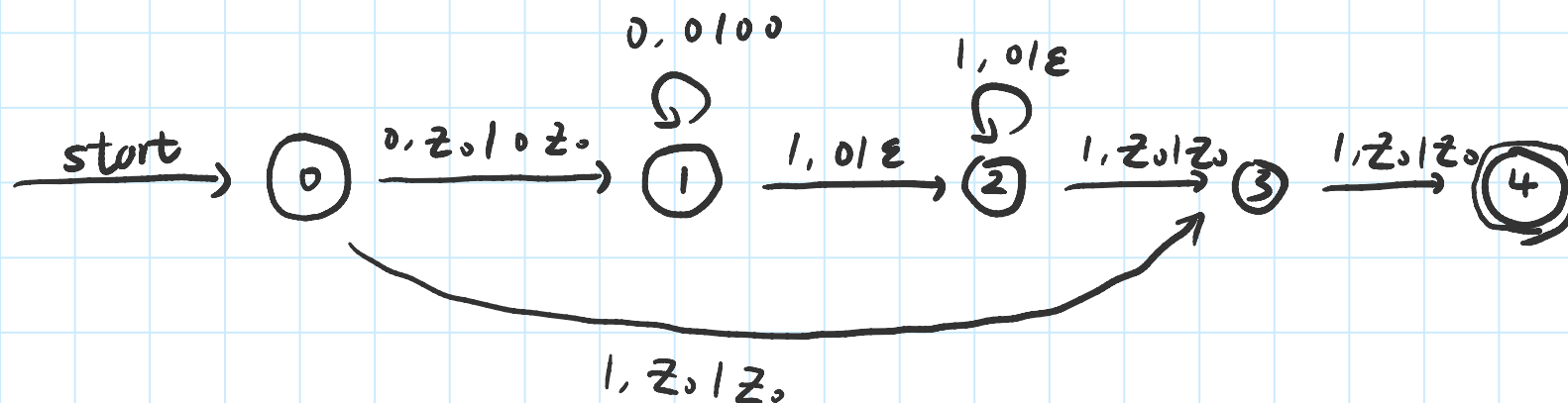
xy^kz , $k \geq 0$, $xz \notin L_{wcw}$

1. $\delta(q, 0, z_0) = \{(q, xz_0)\}$
2. $\delta(q, 0, x) = \{(q, xx)\}$
3. $\delta(q, 1, x) = \{(q, x)\}$
4. $\delta(q, \varepsilon, x) = \{(p, \varepsilon)\}$
5. $\delta(p, \varepsilon, x) = \{(p, \varepsilon)\}$
6. $\delta(p, 1, x) = \{(p, xx)\}$
7. $\delta(p, 1, z_0) = \{(p, \varepsilon)\}$

$$6. \delta(p, 1, \wedge) = \{(r, xx)\}$$

$$7. \delta(p, 1, z) = \{(p, \varepsilon)\}$$

$$\{0^n 1^{n+2} \mid n \geq 0\}$$



$$S \rightarrow AB \mid a \quad B \rightarrow b$$

① 有用 S, a

② 无用 A, B, b

③ 生成 S, B, a, b

① 已知 A, B, a, b

③ 生成 S, B, a, b

④ 非生成 A

⑤ 可达 S, A, B, a, b

⑥ 非可达 无

$S \rightarrow a$