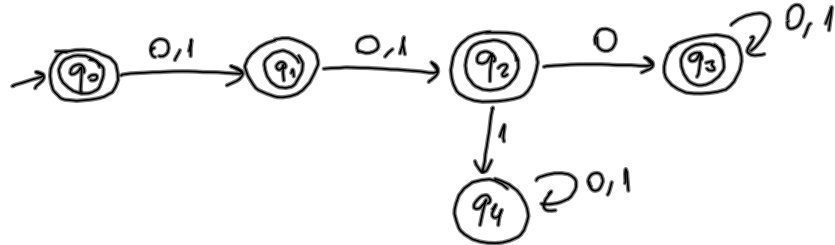


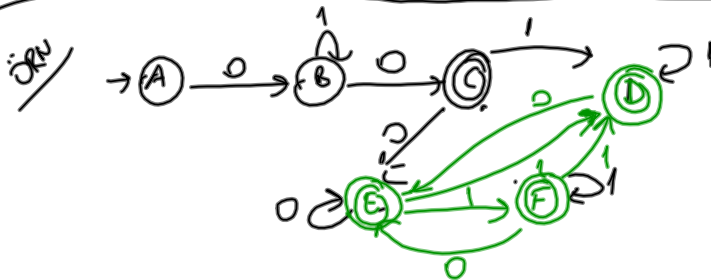
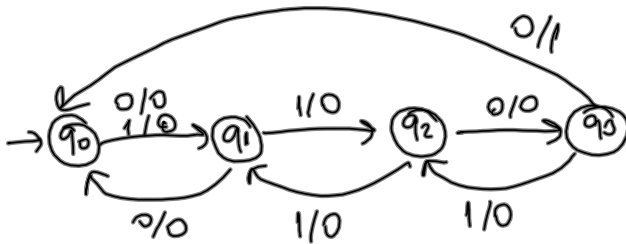
ör/ $L = \{w \mid w \in \{0,1\}^*$ ve w ünlüleri karakende "1" içermektedir.
 L diline ait stringleri tanıyan bir DFA tasarlayınız.

$$L = \{\lambda, 0, 1, 00, 01, 10, 11, 000, 010, 100, 110, 0001, \dots\}$$



ör/ 0 ve 1 leri giriş olarak kabul eden bir Mealy makinesi, ilk ve ikinci kati sırasında okunan "100" alt stringini sairen tüm stringler sairen 1 çıktısı üretmektedir. Makineyi tasarlayınız.

örnek giriş : 0 1 0 0 1 1 1 0 0 1 0 0 1 0
 Çıkış : 0 0 0 1 0 0 0 0 0 0 0 1 0 0



→ girişleri yok ediniz.

$$\begin{aligned} \delta(F, \lambda) &= C \\ \delta(C, 0) &= E \\ \delta(C, 1) &= D \\ &\text{F son durum} \end{aligned}$$

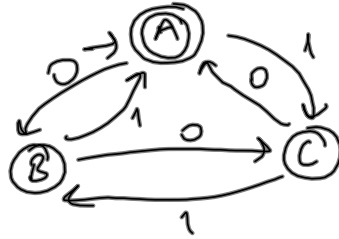
$$\begin{aligned} \delta(E, \lambda) &= F \\ \delta(F, 0) &= E \\ \delta(F, 1) &= F \\ \delta(F, 1) &= D \\ &\text{E son durum} \end{aligned}$$

$$\begin{aligned} \delta(D, \lambda) &= C \\ \delta(C, 0) &= E \\ \delta(C, 1) &= D \\ &\text{D son durum} \end{aligned}$$

ör/ FA \rightarrow RE?

$$R = Q + RP$$

$$R = Q \cdot P^*$$



$$A = \lambda + B1 + C0$$

$$B = A0 + C1$$

$$C = A1 + B0$$

$$C = A1 + B0$$

$$C = A1 + (A0 + C1)0$$

$$C = \underbrace{A1 + A00}_{R} + \underbrace{C10}_{R \cdot P}$$

$$C = (A1 + A00)(10)^*$$

$$B = A0 + C1$$

$$B = A0 + \overbrace{(A1 + A00)(10)^*1}^C$$

$$A = \lambda + B1 + C0$$

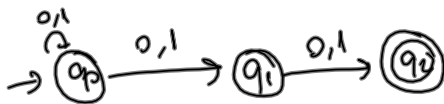
$$A = \lambda + (A0 + A1(10)^*1 + A00(10)^*1)1 + (A1(10)^* + A00(10)^*)0$$

$$A = \lambda + A01 + A1(10)^*11 + A00(10)^*11 + A1(10)^*0 + A00(10)^*0$$

$$A = \lambda + \underbrace{A}_{R} \underbrace{[01 + 1(10)^*11 + 00(10)^*11 + 1(10)^*0 + 00(10)^*0]}_{P}$$

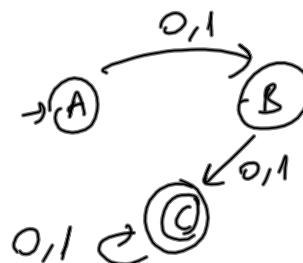
$$RE(A) = P^*$$

ör/ $(0+1)^*(0+1)(0+1)$ NFA çiziniz. DFA'ya dönüştürünüz.



	0	1
A { q0	q0q1	q0q1
B { q0q1	q0q1q2	q0q1q2
C { q0q1q2	q0q1q2	q0q1q2

q \ x	0	1
q0	q0q1	q0q1
q1	q2	q2
q2	—	—



ör/ $L = \{ x x^R y y^R \mid x, y \in (0+1)^* \}$ L dilini kenden CFG?

L : reverse örnek: $z = 001$ $z^R = 100$, $w = 110$, $w^R = 011$

$L = \{ \lambda, 00, 0110, \underbrace{0110}_{x x^R} \underbrace{1000}_{y y^R}, \dots \}$

$S \rightarrow XY$

$X \rightarrow 0X0 \mid 1X1 \mid \lambda$

$Y \rightarrow 0Y0 \mid 1Y1 \mid \lambda$

$0100 \quad 0010$

ör/ $L = \{ w z w^R \mid w \in (a+b)^* \}$ L için CFG yapın.

$L = \{ z, aza, abzba, abbz bba, \dots \}$

$S \rightarrow aSa \mid bSb \mid z$

$S \rightarrow aSa \rightarrow abSa \rightarrow abbSa \rightarrow \underbrace{abbz}_{w} \underbrace{bbz}_{w^R}$