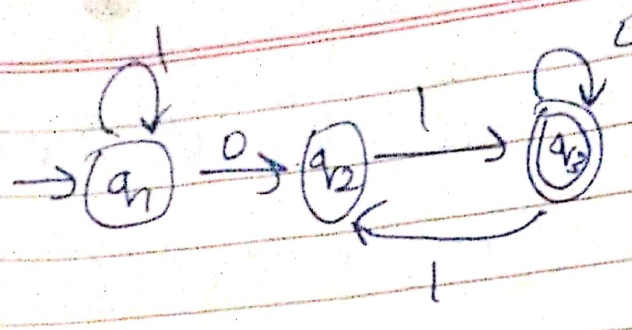

We Know that,

$$R_{ij}^{(k)} = R_{ij}^{(k-1)} + R_{ik}^{(k-1)} \cdot \left(R_{kk}^{(k-1)}\right)^* \cdot R_{kj}^{k-1}$$

Since $K = 3$

$$R_{ij}^{3} = R_{ij}^{2} + R_{ik}^{(2)} \left(R_{kk}^{2}\right)^* R_{kj}^{2}$$

~~Now,~~ ~~R~~ $\Rightarrow$ ~~$R_{13}^{3} = R_{13}^{2} + R_{12}^{2} (R_{22}^{2})^*$~~

$$\Rightarrow R_{13}^{3} = R_{13}^{2} + R_{13}^{2} \left(R_{33}^{2}\right)^* R_{33}^{2}$$

$K = 0 \Rightarrow R_{11}^{0} = \varepsilon + 1 = 1^*$

$$R_{12}^{(0)} = 0$$

$$R_{13}^{0} = \phi$$

$$R_{21} = \phi$$

$$R_{22} = \varepsilon$$

$$R_{23} = 1$$

$$R_{31}^{0} = \phi$$

$$R_{32}^{0} = 1$$

$$R_{33}^{0} = \varepsilon + 0 = 0^*$$

$K=1 \Rightarrow$

$$R_{11}^{1} = R_{11}^{0} + R_{11}^{0}(R_{11}^{0})^{*} R_{11}^{(0)}$$

$$= (\varepsilon+1) + (\varepsilon+1)(\varepsilon+1)^{*}(\varepsilon+1)$$

$$= (\varepsilon+1)^{*} = 1^{*}$$

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

$$= 0 + (\varepsilon+1)(\varepsilon+1)^{*}.0$$

$$= (\varepsilon+1)^{*}.0 = 1^{*}.0$$

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

$$= \phi + (\varepsilon+1)(\varepsilon+1)^{*}\phi$$

$$= \phi + \phi$$

$$= \phi$$

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

$$= \phi + \phi(\varepsilon+1)^{*}(\varepsilon+1)$$

$$= \phi$$

$$R_{22}^{1} = R_{22}^{0} + R_{21}^{0}(R_{11}^{0})^{*} R_{12}^{(0)}$$

$$= \varepsilon + \phi(\varepsilon+1)^{*}.0$$

$$= \varepsilon + \phi = \varepsilon$$

$$R_{23}^{1} = R_{23}^{0} + R_{21}^{0} (R_{11}^{0})^{*} R_{13}^{(0)}$$

$$= 1 + \phi (\varepsilon + 1)^{*} \phi$$

$$= 1 + \phi = 1$$

$$R_{33}^{1} = R_{33}^{0} + R_{31}^{0} (R_{11}^{0})^{*} R_{13}^{0}$$

$$= (\varepsilon + 0) + \phi (\varepsilon + 1)^{*} \phi$$

$$= \varepsilon + 0 + \phi$$

$$= \varepsilon + 0 = 0^{*}$$

$k = 2 \Rightarrow$

$$R_{13}^{2} = R_{13}^{1} + R_{12}^{1} (R_{22}^{1})^{*} R_{23}^{(1)}$$

$$= \phi + (1^{*}.0)(\varepsilon)^{*}.1$$

$$= \phi + 1^{*}.0.1$$

$$= 1^{*}.0.1$$

$$R_{33}^{2} = R_{33}^{1} + R_{32}^{1} (R_{22}^{1})^{*} R_{23}^{1}$$

$$= 0^{*} + 1.\varepsilon^{*}.1$$

$$= (0^{*} + 1.1)$$

$$\therefore R_{13}^{3} = R_{13}^{2} + R_{13}^{2}\left(R_{33}^{2}\right)^{*} R_{33}^{2}$$

$$= (1^{*}.0.1) + (1^{*}.0)(0^{*} + 1.1)^{*}(0^{*} + 1.1)$$

$$= (1^{*}.0.1) + (1^{*}.0)(0^{*} + 1.1)^{*}$$

$$= (1^{*}.0.1)(0^{*} + 1.1)^{*}$$

$$= (1^{*}.0.1)(0 + 1.1)^{*}$$