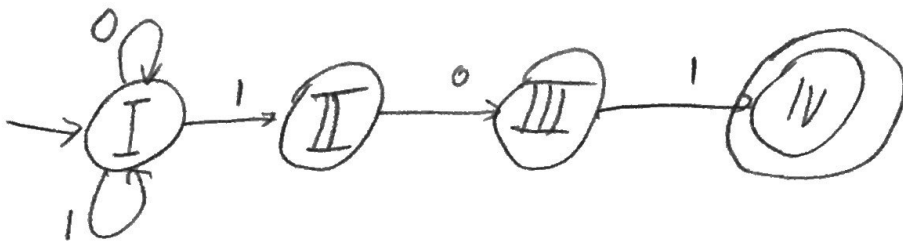


i.



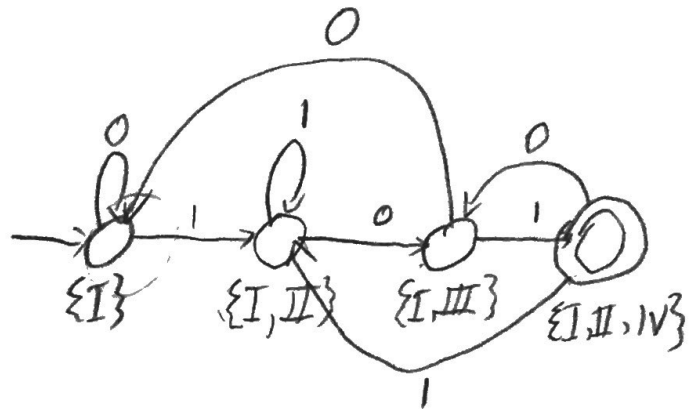
ii. DFA & Transition Table

$$\begin{aligned} \{I\} &\xrightarrow{0} \{I\} \\ &\xrightarrow{1} \{I, II\} \end{aligned}$$

$$\begin{aligned} \{I, II\} &\xrightarrow{0} \{I, III\} \\ &\xrightarrow{1} \{I, II\} \end{aligned}$$

$$\begin{aligned} \{I, III\} &\xrightarrow{0} \{I\} \\ &\xrightarrow{1} \{I, II, IV\} \end{aligned}$$

$$\begin{aligned} \{I, II, IV\} &\xrightarrow{0} \{I, III\} \\ &\xrightarrow{1} \{I, II\} \end{aligned}$$



$$101: \{I\} \rightarrow \{I, II\} \rightarrow \{I, III\} \rightarrow \{I, II, IV\}$$

$$10101: \{I\} \rightarrow \{I, II\} \rightarrow \{I, III\} \rightarrow \{I, II, IV\} \rightarrow \{I, III\} \rightarrow \{I, II, IV\}$$

$$101101: \{I\} \rightarrow \{I, II\} \rightarrow \{I, III\} \rightarrow \{I, II, IV\}$$

$$\{I, II\} \rightarrow \{I, III\} \rightarrow \{I, II, IV\}$$