

DFA Minimization-1

Minimization of DFA



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Minimization of DFA is required to obtain the minimal version of any DFA which consists of the minimum number of states possible

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DFA 5 states

4 states



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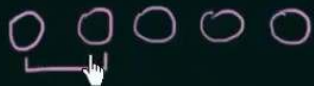
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Equivalent



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DFA 5 states

4 states



Equivalent

Two states 'A' and 'B' are said to be equivalent if

$$\delta(A, X) \rightarrow F$$

and

$$\delta(B, X) \rightarrow F$$

OR

$$\delta(A, X) \nrightarrow F$$

and

$$\delta(B, X) \nrightarrow F$$

where 'X' is any input String



Equivalent

Two states 'A' and 'B' are said to be equivalent if

$$\begin{array}{ccc} \delta(A, X) \rightarrow F & & \delta(A, X) \not\rightarrow F \\ \text{and} & \text{OR} & \text{and} \\ \delta(B, X) \rightarrow F & & \delta(B, X) \not\rightarrow F \end{array}$$

where 'X' is any input String

If $|X| = 0$, then A and B are said to be 0 equivalent

If $|X| = 1$, then A and B are said to be 1 equivalent

If $|X| = 2$, then A and B are said to be 2 equivalent

⋮

If $|X| = n$, then A and B are said to be n equivalent

• **Questions????**