

DFA -Example

Deterministic Finite Automata (Example-1)



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L1 = Set of all strings that start with '0'



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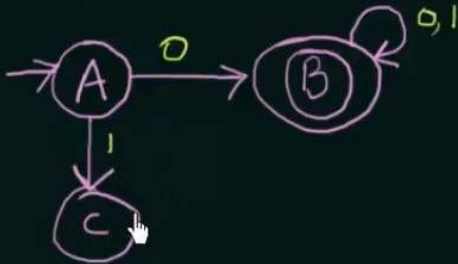
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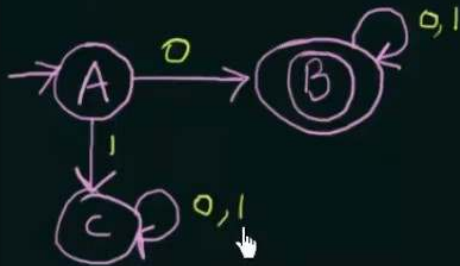
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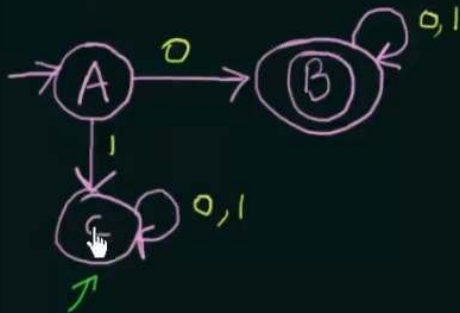
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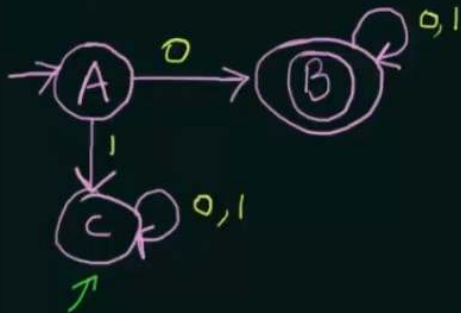


Dead state
or
trap state

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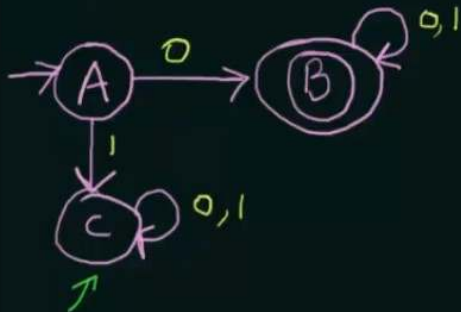
Eg. 001

Initial state (A) $\overset{0}{\rightarrow}$

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Eg. 001

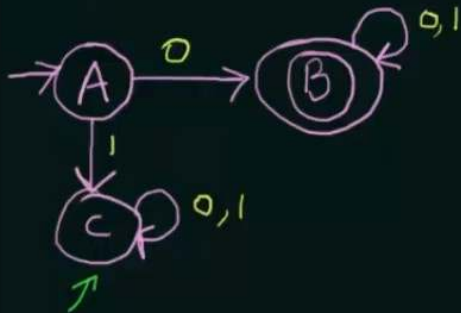


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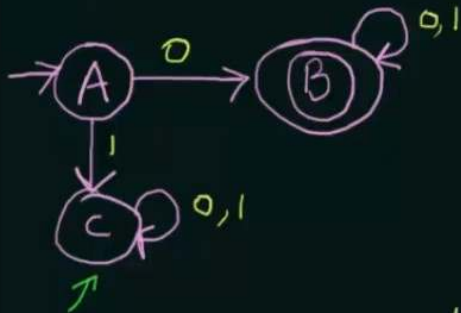
Eg. 001 ✓

Initial state (A) → (B) → (B) → (B) - Final State

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Dead state
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Eg. 001 ✓

Initial state $\overset{0}{A} \rightarrow \overset{0}{B} \rightarrow \overset{1}{B} \rightarrow B$ - Final State

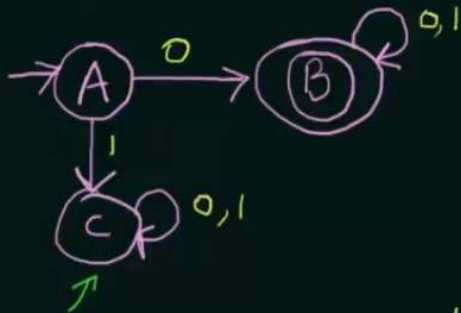
Eg. 101

Initial state $\overset{1}{A} \rightarrow \overset{0}{C} \rightarrow C$

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Dead state
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Eg. 001 ✓

Initial state $\textcircled{A} \xrightarrow{0} \textcircled{B} \xrightarrow{0} \textcircled{B} \xrightarrow{1} \textcircled{B}$ - Final State

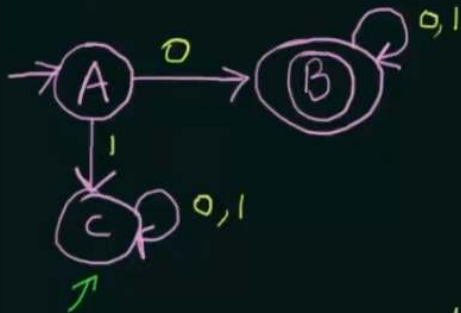
Eg. 101

Initial state $\textcircled{A} \xrightarrow{1} \textcircled{C} \xrightarrow{0} \textcircled{C}$

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Dead state
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Eg. 001 ✓

Initial state $\textcircled{A} \xrightarrow{0} \textcircled{B} \xrightarrow{0} \textcircled{B} \xrightarrow{1} \textcircled{B}$ - Final State

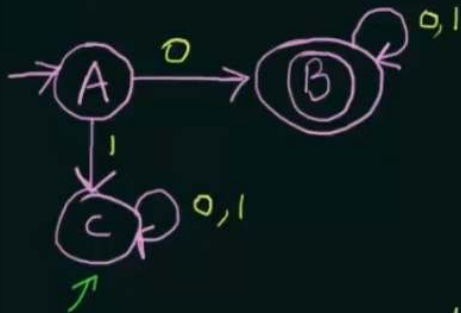
Eg. 101

Initial state $\textcircled{A} \xrightarrow{1} \textcircled{C} \xrightarrow{0} \textcircled{C} \xrightarrow{1} \textcircled{C}$

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Dead state
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trap state

Eg. 001 ✓

Initial state $A \xrightarrow{0} B \xrightarrow{0} B \xrightarrow{1} B$ - Final State

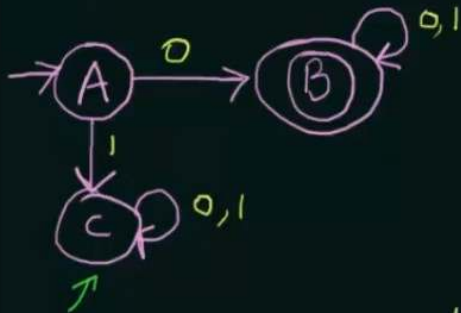
Eg. 101

Initial state $A \xrightarrow{1} C \xrightarrow{0} C \xrightarrow{1} C$ - Not final State

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Dead state
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trap state

Eg. 001 ✓

Initial state $A \xrightarrow{0} B \xrightarrow{0} B \xrightarrow{1} B$ - Final State

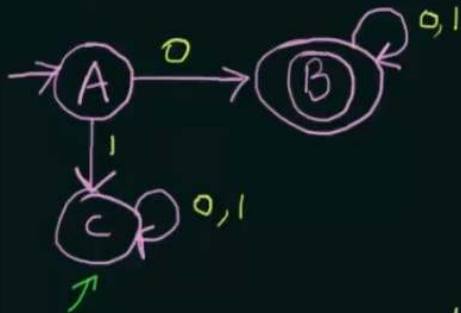
Eg. 101

Initial state $A \xrightarrow{1} C \xrightarrow{0} C \xrightarrow{1} C$ - Not final State

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Dead state
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Eg. 001 ✓

Initial state $A \xrightarrow{0} B \xrightarrow{0} B \xrightarrow{1} B$ - Final State

Eg. 101 ✗

Initial state $A \xrightarrow{1} C \xrightarrow{0} C \xrightarrow{1} C$ - Not final State

• **Questions????**