

$$\begin{aligned}
 1) \quad & S \rightarrow BAX \mid aX \\
 & X \rightarrow \epsilon \mid aX \mid BaX \\
 & A \rightarrow ac \\
 & B \rightarrow bY \\
 & Y \rightarrow \epsilon \mid bY \mid aY
 \end{aligned}$$

$$2) \quad S \rightarrow \textcircled{abcS} \mid \textcircled{abc} \mid AC \quad k > 1$$

first sets same  $\{a\}$  or Left Recursion on A

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$$\begin{aligned}
 & S \xrightarrow{a} \textcircled{abcX} \mid \textcircled{AC}^b \quad k=1 \\
 \text{EFTK} \quad & \textcircled{X} \xrightarrow{ab} \textcircled{S} \mid \epsilon \quad k=1 \\
 & A \rightarrow bY \quad k=0 \\
 \text{cd} \quad & \textcircled{Y} \rightarrow \epsilon \mid \textcircled{aY}^a \quad k=1 \\
 & C \xrightarrow{c} \textcircled{cC} \mid \textcircled{D}^d \quad k=1 \\
 & D \rightarrow dd \quad k=0
 \end{aligned}$$


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$LL(1)$