Still the production A $\to$ bb is not a regular grammar. Replace b by a non-terminal D with production D $\to$ b. The grammar becomes

$$\begin{aligned}&S \to bB/aA\\&A \to bC/bD\\&B \to aS\\&C \to bA\\&D \to b\end{aligned}$$

Now the grammar is regular.

For a left linear grammar, there exists a right linear grammar and vice versa. Grammar in one form can be converted into another form. The following section describes the process of conversion.

6.6.1 Right Linear to Left Linear

Step I: Generate the regular expression from the given grammar.
Step II: Reverse the regular expression obtained.
Step III: Construct the finite automata of the RE in Step II
Step IV: Generate the regular right linear grammar from the finite automata.
Step V: Reverse the right side of each production of the right linear grammar obtained in Step IV. The resulting grammar is the equivalent left linear grammar.

6.6.2 Left Linear to Right Linear

Step I: Reverse the right side of every production of the left linear grammar.
Step II: Construct the regular expression of the grammar obtained in Step I.
Step III: Reverse the constructed regular expression.
Step IV: Construct the fi nite automata from the RE obtained in Step III.
Step V: Construct the right linear grammar from the fi nite automata obtained in Step IV.

Example 6.35

Convert the following right linear grammar to left linear grammar.

$$\begin{aligned}&\text{S} \to 10\text{A}/1\\&\text{A} \to 0\text{A}/00\end{aligned}$$

Solution:

i) A = 0A $\to$ 00A $\to$ . . . . $\to$ 0*00

$$\text{S} \to 10\text{A} + 1 \to (100^*00 + 1)$$

The regular expression generated by the grammar is (100*00 + 1).
ii) Reversing the regular expression, we get (1 + 000*01).