Automata Theory: Assignment 4

Due date: October 7 (Thursday)

Problem 1 (3 points)
Draw an NFA that accepts the language defined by the following grammar:

$$
\begin{aligned}
&S \to aaA \mid \lambda \\
&A \to bbB \mid ccC \\
&B \to bB \mid bC \\
&C \to cC \mid S
\end{aligned}
$$

Problem 2 (3 points)
Give a right-linear grammar for the following language:

$$\{b^n a b^m a : \ n \geq 2, m \geq 2\}$$

Problem 3 (4 points)
Prove or disprove the following statement:

> For every regular language L, its star-closure L^* is also regular.