Solution to Problem 18

Task. As described in the corresponding lecture, every grammar obtained from a finite automaton is LL(1). For the grammar from Homework 8, build the corresponding table.

Solution. This grammar has three variables S, C, and E, three terminal symbols 0, 1, and a, and the following rules:

1. $S \to AC$
2. $S \to 0E$
3. $S \to 1E$
4. $S \to aE$
5. $C \to AC$
6. $C \to aC$
7. $C \to 0C$
8. $C \to 1C$
9. $E \to AE$
10. $E \to aE$
11. $E \to 0E$
12. $E \to 1E$
13. $C \to \varepsilon$

So, the corresponding table has the following form:

	0	1	a	A	eol
S	2	3	4	1	–
C	6	7	8	5	13
E	10	11	12	9	–