

Lucrarea de laborator № 1

1. Pentru gramatica formală $G=(V_N, V_T, P, S)$ construiți derivările a 5 șiruri care aparțin limbajului $L(G)$ generat de această gramatică.
2. Construiți arborii de derivare pentru aceste șiruri.
3. Construiți automatul finit echivalent cu gramatica formală $G=(V_N, V_T, P, S)$ prin toate metodele.

Varianta 1.

$V_N=\{S, P, Q\}$, $V_T=\{a, b, c, d, e, f\}$,

$P= \{$

1. $S \rightarrow aP$
2. $P \rightarrow bP$
3. $P \rightarrow c$
4. $P \rightarrow dQ$
5. $Q \rightarrow eS$
6. $Q \rightarrow fQ$
7. $Q \rightarrow a \}$

Varianta 2.

$V_N=\{S, R, L\}$, $V_T=\{a, b, c, d, e, f\}$,

$P= \{$

1. $S \rightarrow aS$
2. $S \rightarrow bS$
3. $S \rightarrow cR$
4. $R \rightarrow dL$
5. $L \rightarrow f$
6. $L \rightarrow eL$
7. $L \rightarrow d \}$

Varianta 3.

$V_N=\{S, D, R\}$, $V_T=\{a, b, c, d, e, f\}$,

$P= \{$

1. $S \rightarrow aS$
2. $S \rightarrow bD$
3. $D \rightarrow cD$
4. $D \rightarrow dR$
5. $R \rightarrow eR$
6. $R \rightarrow fR$
7. $R \rightarrow e$
8. $R \rightarrow f$
9. $D \rightarrow d \}$

Varianta 4. $V_N = \{S, L\}, V_T = \{a, b, c, d, e, f, j\},$ $P = \{$

1. $S \rightarrow aS$
2. $S \rightarrow bS$
3. $S \rightarrow cS$
4. $S \rightarrow dL$
5. $L \rightarrow eL$
6. $L \rightarrow fL$
7. $L \rightarrow jL$
8. $L \rightarrow e$
9. $L \rightarrow f$
10. $L \rightarrow j$
11. $S \rightarrow d \}$

Varianta 5. $V_N = \{S, F, L\}, V_T = \{a, b, c, d, e\},$ $P = \{$

1. $S \rightarrow bS$
2. $S \rightarrow aF$
3. $F \rightarrow cF$
4. $F \rightarrow dF$
5. $F \rightarrow eF$
6. $F \rightarrow aL$
7. $L \rightarrow cL$
8. $L \rightarrow c$
9. $F \rightarrow a \}$

Varianta 6. $V_N = \{S, I, B, K\}, V_T = \{a, b, c, e, n, f, m\},$ $P = \{$

1. $S \rightarrow aI$
2. $I \rightarrow bB$
3. $B \rightarrow cS$
4. $I \rightarrow eK$
5. $K \rightarrow nK$
6. $K \rightarrow fK$
7. $K \rightarrow m \}$

Varianta 7. $V_N = \{S, D, E, F, L\}, V_T = \{a, b, c, d, e, i, j, k\},$ $P = \{$

1. $S \rightarrow aD$
2. $D \rightarrow bE$
3. $E \rightarrow cF$
4. $F \rightarrow dD$
5. $E \rightarrow eL$
6. $L \rightarrow iL$
7. $L \rightarrow jE$
8. $L \rightarrow k \}$

Variantă 8.

$V_N = \{S, D, E, B, I, K\}$, $V_T = \{a, b, c, d, e, f, j\}$,

$P = \{$

1. $S \rightarrow aD$
2. $D \rightarrow dE$
3. $D \rightarrow bB$
4. $B \rightarrow cS$
5. $E \rightarrow e$
6. $E \rightarrow eI$
7. $I \rightarrow fK$
8. $K \rightarrow jE \}$

Variantă 9.

$V_N = \{S, Q, G, E, L\}$, $V_T = \{a, b, c, d, e, f, j, i\}$,

$P = \{$

1. $S \rightarrow aQ$
2. $Q \rightarrow dG$
3. $Q \rightarrow bE$
4. $E \rightarrow cS$
5. $G \rightarrow i$
6. $G \rightarrow eL$
7. $L \rightarrow fQ$
8. $G \rightarrow j \}$

Variantă 10.

$V_N = \{S, B, D, F, Q\}$, $V_T = \{a, b, c, f, d, i\}$,

$P = \{$

1. $S \rightarrow aB$
2. $S \rightarrow bB$
3. $B \rightarrow cD$
4. $D \rightarrow fF$
5. $D \rightarrow dQ$
6. $Q \rightarrow eB$
7. $D \rightarrow f$
8. $F \rightarrow iF$
9. $F \rightarrow i \}$

Variantă 11.

$V_N = \{S, B, L, F, N\}$, $V_T = \{a, b, c, d, f, e, i\}$,

$P = \{$

1. $S \rightarrow aB$
2. $B \rightarrow bB$
3. $B \rightarrow cL$
4. $L \rightarrow fF$
5. $L \rightarrow dN$
6. $N \rightarrow eB$
7. $L \rightarrow f$
8. $F \rightarrow iF$
9. $F \rightarrow i \}$

Varianta 12. $V_N = \{S, B, D, I, J\}, V_T = \{a, b, c, d, e, f, j\},$ $P = \{$

1. $S \rightarrow aB$
2. $S \rightarrow bB$
3. $B \rightarrow cD$
4. $D \rightarrow j$
5. $D \rightarrow dI$
6. $I \rightarrow eJ$
7. $J \rightarrow fB \}$

Varianta 13. $V_N = \{S, B, D, J, I, F\}, V_T = \{a, b, c, d, e, f\},$ $P = \{$

1. $S \rightarrow cB$
2. $B \rightarrow aD$
3. $D \rightarrow f$
4. $D \rightarrow bJ$
5. $J \rightarrow cI$
6. $I \rightarrow dF$
7. $F \rightarrow eB$
8. $F \rightarrow a\}$

Varianta 14. $V_N = \{S, F, D, E\}, V_T = \{a, b, c, d, i, j, f\},$ $P = \{$

1. $S \rightarrow aF$
2. $F \rightarrow bF$
3. $F \rightarrow cD$
4. $D \rightarrow dE$
5. $E \rightarrow i$
6. $E \rightarrow jF$
7. $F \rightarrow fD \}$

Varianta 15. $V_N = \{S, B, D, E, L\}, V_T = \{a, b, c, d, e, i\},$ $P = \{$

1. $S \rightarrow aB$
2. $B \rightarrow bE$
3. $B \rightarrow fE$
4. $E \rightarrow cD$
5. $D \rightarrow i$
6. $D \rightarrow dL$
7. $L \rightarrow eE \}$

Varianta 16. $V_N = \{S, B, D, E\}, V_T = \{a, b, c, d, e, f, j\},$ $P = \{$

1. $S \rightarrow aS$
2. $S \rightarrow bB$
3. $S \rightarrow jB$
4. $B \rightarrow cB$
5. $B \rightarrow d$
6. $B \rightarrow dD$
7. $D \rightarrow eE$
8. $E \rightarrow fB \}$

Varianta 17. $V_N = \{S, A, Q\}, V_T = \{a, b, c, d, e, f\},$ $P = \{$

1. $S \rightarrow aA$
2. $A \rightarrow bA$
3. $A \rightarrow cA$
4. $A \rightarrow dQ$
5. $Q \rightarrow eQ$
6. $Q \rightarrow fQ$
7. $Q \rightarrow a \}$

Varianta 18. $V_N = \{S, B, L\}, V_T = \{a, b, c, d, e, f\},$ $P = \{$

1. $S \rightarrow aS$
2. $S \rightarrow bS$
3. $S \rightarrow cB$
4. $B \rightarrow dL$
5. $L \rightarrow fL$
6. $L \rightarrow eL$
7. $L \rightarrow d \}$

Varianta 19. $V_N = \{S, D, A\}, V_T = \{a, b, c, d, e, f\},$ $P = \{$

1. $S \rightarrow aS$
2. $S \rightarrow bD$
3. $D \rightarrow cD$
4. $D \rightarrow dA$
5. $A \rightarrow eA$
6. $A \rightarrow fA$
7. $A \rightarrow e$
8. $A \rightarrow f$
9. $D \rightarrow d \}$

Varianta 20.

$V_N = \{S, A\}$, $V_T = \{a, b, c, d, e, f, j\}$,

$P = \{$

1. $S \rightarrow aS$
2. $S \rightarrow bS$
3. $S \rightarrow cS$
4. $S \rightarrow dA$
5. $A \rightarrow eA$
6. $A \rightarrow fA$
7. $A \rightarrow jA$
8. $A \rightarrow e$
9. $A \rightarrow f$
10. $A \rightarrow j$
11. $S \rightarrow d \}$

Varianta 21.

$V_N = \{S, A, B\}$, $V_T = \{a, b, c, d, e\}$,

$P = \{$

1. $S \rightarrow bS$
2. $S \rightarrow aA$
3. $A \rightarrow cA$
4. $A \rightarrow dA$
5. $A \rightarrow eA$
6. $A \rightarrow aB$
7. $B \rightarrow cB$
8. $B \rightarrow c$
9. $A \rightarrow a \}$

Varianta 22.

$V_N = \{S, A, B, C\}$, $V_T = \{a, b, c, e, n, f, m\}$,

$P = \{$

1. $S \rightarrow aA$
2. $A \rightarrow bB$
3. $B \rightarrow cS$
4. $A \rightarrow eC$
5. $C \rightarrow nC$
6. $C \rightarrow fA$
7. $C \rightarrow m \}$

Varianta 23.

$V_N = \{S, D, E, F, L\}$, $V_T = \{a, b, c, d, e, i, j, k\}$,

$P = \{$

1. $S \rightarrow aD$
2. $D \rightarrow bE$
3. $E \rightarrow cF$
4. $F \rightarrow dD$
5. $E \rightarrow eL$
6. $L \rightarrow iE$
7. $L \rightarrow jL$
8. $L \rightarrow k \}$

Varianta 24.

$V_N = \{S, D, E, B, A, K\}$, $V_T = \{a, b, c, d, e, f, j\}$,

$P = \{$

1. $S \rightarrow aD$
2. $D \rightarrow dE$
3. $D \rightarrow bB$
4. $B \rightarrow cS$
5. $E \rightarrow e$
6. $E \rightarrow eA$
7. $A \rightarrow fK$
8. $K \rightarrow jE$ }