LFA laboratory_01

Terman Emil & Ganuscheak Vlad FAF161

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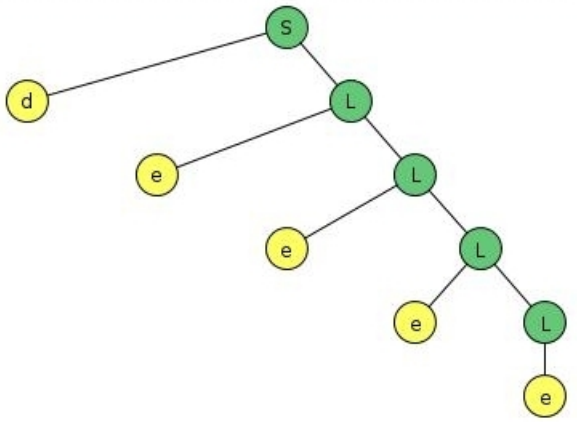
1 1. Part A

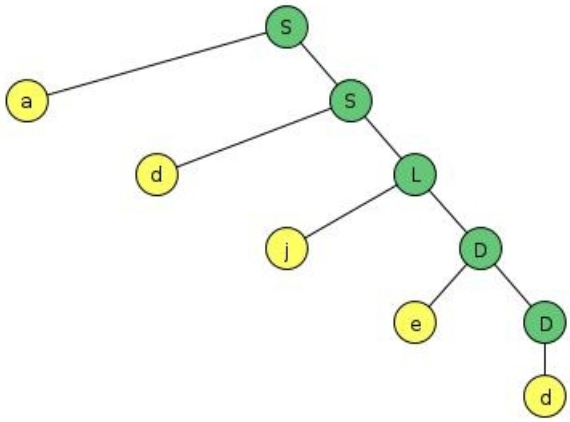
V_N = {S, L, D} V_T = {a, b, c, d, e, f, j}
P = {
S → aS | bS | cD | dL | e
L → eL | fL | jD | e
D → eD | d }

1.1 Presentation of five strings that belong to the language L(G)

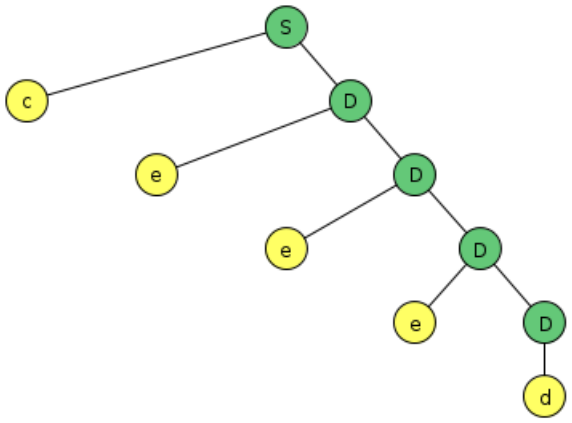
1. S → dL → deL → deeL → deeeL → deeee



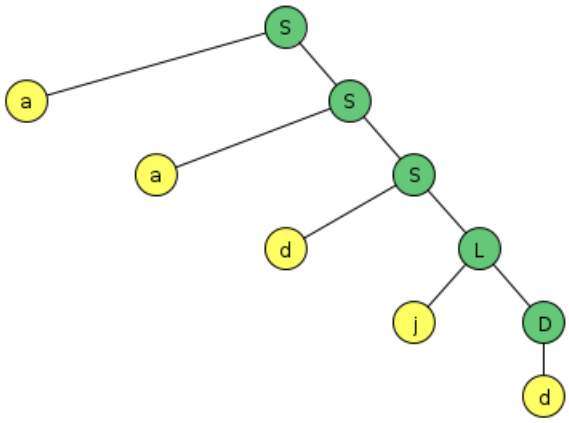
2. S → aS → adL → adjD → adjeD → adjed



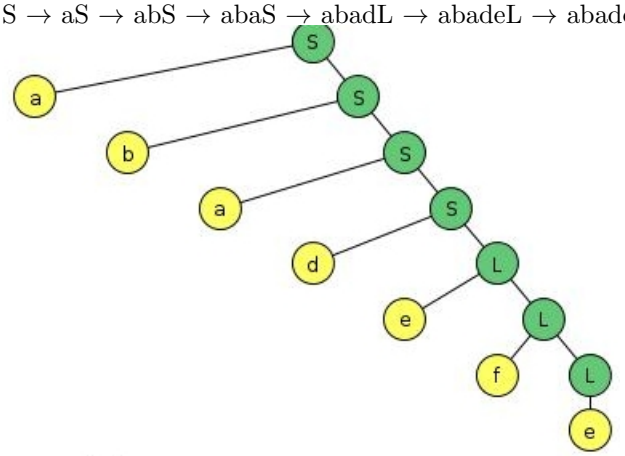
3. S → cD → ceD → ceeD → ceeeD → ceeed



4. S → aS → aaS → aadL → aadjD → aadjd



5. S → aS → abS → abaS → abadL → abadeL → abadefL → abadefe



1.2 Conversion of regular grammar to Finite Automaton

FA = {Q, Σ, σ, S, F}
Q = {S, L, D}
F = {X}
Σ = {a, b, c, d, e, f, j}

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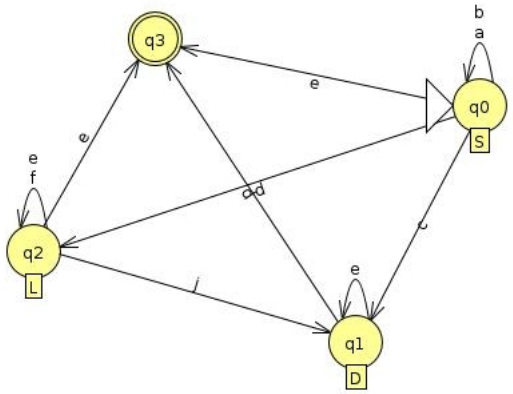
1. σ(S, a) = {S}
2. σ(S, b) = {S}
3. σ(S, c) = {D}
4. σ(S, d) = {L}
5. σ(S, e) = {X}
6. σ(L, e) = {L}
7. σ(L, f) = {L}
8. σ(L, j) = {D}
9. σ(L, e) = {X}
10. σ(D, e) = {D}
11. σ(D, d) = {X}



1.3 Type of the grammar

The given grammar is of type 3 - right linear, by Chomsky clasifiction, because the productions are only of the type:

- A → xB
- A → x