

Project 2:

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341-002

2. The language A

$A = L(G)$
 $G = (V_N, V_T, P, S)$

$V_N = \{s, T, C, H, Y, N\}$

$V_T = \{., 0, 1, 2, \dots, 9, +, -, *, /, (,), a, b\}$

$S = s$

$\rightarrow ab^* a \text{ (floating point)}$

$P \Rightarrow$

$S \Rightarrow aTa$

$T \Rightarrow bTb \mid aCa$

$C \Rightarrow C+C \mid C-C \mid C \cdot C \mid C/C \mid (C) \mid$

$H \Rightarrow Y.Y \mid Y. \mid .Y$

$Y \Rightarrow NY \mid N$

$N \Rightarrow 0 \mid 1 \mid 2 \mid \dots \mid 9$

$\delta(q, \epsilon, \epsilon) \vdash (q_0, z_0)$

$\delta(q_0, a, z_0) \vdash (q_1, a)$

$\delta(q_1, b, a) \vdash (q_1, b)$

$\delta(q_1, b, b) \vdash (q_1, b)$

$\delta(q_1, a, b) \vdash (q_2, a)$

$\delta(q_2, (, \overset{\text{lang}}{\epsilon}) \vdash (q_2, ($

$\delta(q_2,), (\vdash (q_2, \overset{\text{lang}}{\epsilon})$

$\delta(q_2, d, \overset{\text{lang}}{\epsilon}) \vdash (q_2, \overset{\text{lang}}{\epsilon}_{pop})$

$\delta(q_2, op, \overset{\text{lang}}{\epsilon}) \vdash (q_2, \overset{\text{lang}}{\epsilon}_{pop})$

$\delta(q_2, ., \overset{\text{lang}}{\epsilon}) \vdash (q_2, \overset{\text{lang}}{\epsilon}_{pop})$

$\delta(q_2, a, \overset{\text{lang}}{\epsilon}) \vdash (q_3, \overset{\text{lang}}{\epsilon}_{pop})$

$\delta(q_3, b, a) \vdash (q_3, \overset{\text{lang}}{\epsilon}_{pop})$

$\delta(q_3, b, b) \vdash (q_3, \overset{\text{lang}}{\epsilon}_{pop})$

$\delta(q_3, a, \overset{\text{lang}}{\epsilon}) \vdash (q_{accept}, \overset{\text{lang}}{\epsilon}_{pop})$

$d = 0173456789$

$op = +, -, *, /$

$\rightarrow \text{temporal}$

$Q = \{q, q_0, q_1, q_2, q_3, q_{accept}\}$

$\Sigma = \{a, b, (,), d, op, .\}$

$q_0 = \{q\}$

$F = \{q_{accept}\}$

$z_0 = z_0$

$\leftarrow \delta = \text{transition function}$

$Y = \{a, b, (, z_0\}$