Грамматика лямбда-выражений

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20 мая 2023 г.

$$
\begin{array}{rcl}
\langle \text{line} \rangle & ::= & \texttt{let}\ \langle \text{identifier} \rangle\ \texttt{=}\ \langle \text{term} \rangle\ \texttt{\textbackslash n} \\
& & \mid\ \langle \text{term} \rangle\ \texttt{\textbackslash n} \\
\langle \text{term} \rangle & ::= & \langle \text{term'} \rangle \mid \langle \text{abs} \rangle \mid \langle \text{app} \rangle \\
\langle \text{abs} \rangle & ::= & \langle \text{lambda} \rangle \langle \text{identifiers} \rangle \texttt{.} \langle \text{term} \rangle \\
\langle \text{app} \rangle & ::= & \langle \text{term'} \rangle \langle \text{term'} \rangle \mid \langle \text{term'} \rangle \langle \text{app} \rangle \\
\langle \text{term'} \rangle & ::= & \langle \text{identifier} \rangle \mid \texttt{(} \langle \text{term} \rangle \texttt{)} \\
\langle \text{identifiers} \rangle & ::= & \langle \text{identifier} \rangle \mid \langle \text{identifier} \rangle \langle \text{identifiers} \rangle \\
\langle \text{identifier} \rangle & ::= & \langle \text{letter} \rangle \langle \text{identifier-tail} \rangle \\
\langle \text{identifier-tail} \rangle & ::= & \langle \text{letter-or-digit} \rangle \langle \text{identifier-tail} \rangle \mid \varepsilon \\
\langle \text{letter-or-digit} \rangle & ::= & \langle \text{letter} \rangle \mid \langle \text{digit} \rangle \\
\langle \text{letter} \rangle & ::= & \texttt{a} \mid \texttt{b} \mid \ldots \mid \texttt{z} \mid \texttt{A} \mid \texttt{B} \mid \ldots \mid \texttt{Z} \\
\langle \text{digit} \rangle & ::= & \texttt{0} \mid \texttt{1} \mid \ldots \mid \texttt{9} \\
\langle \text{lambda} \rangle & ::= & \lambda \mid \texttt{\textbackslash}
\end{array}
$$

Вывод в данной грамматике для `let S = λx y z.x z (y z)\n`:

$$
\begin{array}{rl}
 & \langle \text{line} \rangle \\
\Longrightarrow & \text{let } \langle \text{identifier} \rangle = \langle \text{term} \rangle \backslash \text{n} \\
\Longrightarrow & \text{let } \langle \text{letter} \rangle \langle \text{identifier-tail} \rangle = \langle \text{term} \rangle \backslash \text{n} \\
\Longrightarrow & \text{let S} \langle \text{identifier-tail} \rangle = \langle \text{term} \rangle \backslash \text{n} \\
\Longrightarrow & \text{let S} = \langle \text{term} \rangle \backslash \text{n} \\
\Longrightarrow & \text{let S} = \langle \text{abs} \rangle \backslash \text{n} \\
\Longrightarrow & \text{let S} = \langle \text{lambda} \rangle \langle \text{identifiers} \rangle . \langle \text{term} \rangle \backslash \text{n}
\end{array}
$$

$\Longrightarrow$ let S = $\lambda\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda\langle$identifier$\rangle\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda\langle$letter$\rangle\langle$identifier-tail$\rangle\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ \langle$identifier-tail$\rangle\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ \langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ \langle$identifier$\rangle\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ \langle$letter$\rangle\langle$identifier-tail$\rangle\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ \langle$identifier-tail$\rangle\langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ \langle$identifiers$\rangle.\langle$term$\rangle\backslash$n
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$\Longrightarrow$ let S = $\lambda x\ y\ \langle$letter$\rangle\langle$identifier-tail$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z\langle$identifier-tail$\rangle.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.\langle$term$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.\langle$app$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.\langle$term'$\rangle\langle$app$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.\langle$identifier$\rangle\langle$app$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.\langle$letter$\rangle\langle$identifier-tail$\rangle\langle$app$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\langle$identifier-tail$\rangle\langle$app$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\langle$app$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\langle$term'$\rangle\langle$term'$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\langle$identifier$\rangle\langle$term'$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\langle$letter$\rangle\langle$identifier-tail$\rangle\langle$term'$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z\langle$identifier-tail$\rangle\langle$term'$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z\langle$term'$\rangle\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(\langle$term$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(\langle$app$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(\langle$term'$\rangle\langle$term'$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(\langle$identifier$\rangle\langle$term'$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(\langle$letter$\rangle\langle$identifier-tail$\rangle\langle$term'$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(y\langle$identifier-tail$\rangle\langle$term'$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(y\langle$term'$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(y\langle$identifier$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(y\langle$letter$\rangle\langle$identifier-tail$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(y\ z\langle$identifier-tail$\rangle)\backslash$n
$\Longrightarrow$ let S = $\lambda x\ y\ z.x\ z(y\ z\langle$identifier-tail$\rangle)\backslash$n
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