

Toward Language-Independent Sugar Libraries

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ABSTRACT

KEYWORDS

PEG, parsing, semantics

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1 INTRODUCTION

2 PEGS

$\langle e \rangle ::= a$

ϵ
 $e e$
 e/e
 e^*
 $!e$
 v

$\langle m \rangle ::= a$

ϵ
 $\odot e$
 $e \odot$
 $\otimes e$
 $e \otimes$
 \star
 \neg

3 SMALL STEP SEMMANTICS

The machine state is described by 5-upla $(G, e, \Gamma, \langle z \bullet w \rangle)$, where G is a Peg Grammar, e is a peg expression, Γ is a evaluation context, the $\langle z \bullet w \rangle$ is a zipper describing on the input string, where z is the the consumed portion of the input and w is the reminder of the input. Whenver a computation results in fail the zipper will be subscrpted, becoming a $\langle z \bullet w \rangle_{\perp}$.

The semmantics relation has the form $(G, e, \Gamma, z \bowtie w) \triangleright (G, e, \Gamma, z' \bowtie w')$ where G is a Parsing Expression Grammars, e is an expression, Γ is a stack of m expr, z is the consumed input and w is the input.

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$(G, \downarrow a, \Gamma, z \bullet aw) \triangleright (G, \uparrow a, \Gamma, za \bullet w)$
 $(G, \downarrow a, \Gamma, z \bullet bw) \triangleright (G, \uparrow a, \Gamma, \langle z \bullet bw \rangle_{\perp})$
 $(G, \downarrow a, \Gamma, z \bullet \lambda) \triangleright (G, \uparrow a, \Gamma, \perp)$
 $(G, \downarrow \epsilon, \Gamma, z \bullet w) \triangleright (G, \uparrow \epsilon, \Gamma, z \bullet w)$
 $(G, \downarrow e1/e2, \Gamma, z \bullet w) \triangleright (G, \uparrow e1, \otimes e2 : \Gamma, z \bullet w)$

4 RELATED WORK

5 CONCLUSIONS

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REFERENCES