Fine-grained language composition

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2014-05-19
Language composition

Software Development Team

http://soft-dev.org/
Why do we need language composition?
Why do we need language composition?

Code migration

http://soft-dev.org/
Language composition is already widely used
Why do we need language composition?

Language composition is already widely used

...in a very basic way
Incremental parsing

- detect changes in source code
Incremental parsing

- detect changes in source code
- only update affected subtrees
Incremental parsing

- detect changes in sourcecode
- only update affected subtrees
- reuse everything else from previous parsetree
Incremental parsing

before

E
  +
  T
    P
      23
        1

insert "*" inside of "23"

after

E
  +
  T
    *
      P
        3

unchanged subtree
Meta-tracing interpreter composition

PyPy
Interpreters
Glue

Hippy

Meta-tracing

PyHyp
Interpreter
Tracing JIT
Thanks for listening

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