TÉCNICO LISBOA

Refactoring for Dynamic Languages

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Outline

1. Introduction
   - Motivation
   - Objectives
   - Definitions
2. Related Work
3. Solution
   - Architecture
   - Evaluation
4. Conclusion

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Motivation

Listing 1: Algorithm first implementation

```
(define (fibs n)
  (let ((fibs
         (let loop ((previous 0)
                    (current 1)
                    (index 0))
           (if (= index n)
               (list)
               (cons current
                     (loop current
                           (+ previous current)
                           (+ index 1)))))))
    (for ([fib (in-list fibs)])
      (displayln fib))))
```

Objectives

Optional Subtitle

- Correct
- Useful
- Simple to use

Definitions

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Scheme

```scheme
;; Calculation of Hofstadter's male and female sequences as a list of pairs

(define (hofstadter-male-female n)
  (letrec ((female (lambda (n)
                     (if (= n 0)
                     1
                     (- n (male (female (- n 1)))))))
           (male (lambda (n)
                   (if (= n 0)
                       0
                       (- n (female (male (- n 1))))))))
    (let loop ((i 0))
      (if (> i n)
      '()
      (cons (cons (female i)
                  (male i))
        (loop (+ i 1)))))))

(hofstadter-male-female 8)

===> ((1 . 0) (1 . 0) (2 . 1) (2 . 2) (3 . 2) (3 . 3) (4 . 4) (5 . 4) (5 . 5))
```

JavaScript

```
function enEdition(){
    /* Ne rien faire mode edit + preload */
    if( encodeURIComponent(document.location).search(/%26preload%3D/) != -1 ) re
turn;
    // /&preload=/

    if ( !wgPageName.match(/Discussion.*\/Traduction/) ) return;
    var diff = new Array();
    var status; var pecTraduction; var pecRelecture;
    var avancementTraduction; var avancementRelecture;

/* ************ Parser ************ */
    var params = document.location.search.substr(1, document.location.search.len
gth).split('&');
    var i = 0;
    var tmp; var name;
    while ( i < params.length )
    {
        tmp = params[i].split('=');
        name = tmp[0];
        switch( name ) {
            case 'status':
            status = tmp[1];
            break;
            case 'pecTraduction':
```

Python

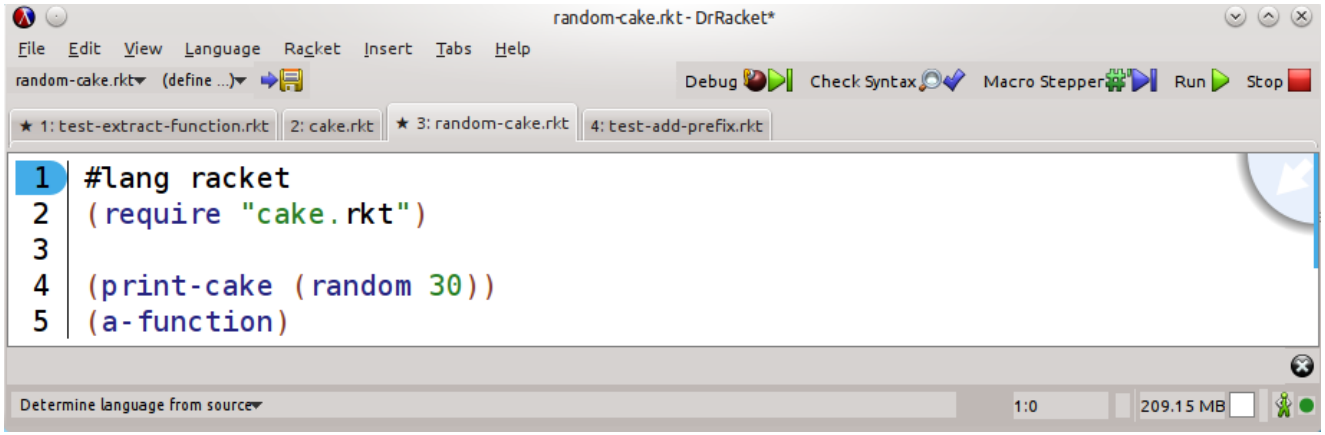
```
def add5(x):
    return x+5

def dotwrite(ast):
    nodename = getNodename()
    label=symbol.sym_name.get(int(ast[0]),ast[0])
    print '    %s [label="%s' % (nodename, label),
    if isinstance(ast[1], str):
        if ast[1].strip():
            print '= %s"];' % ast[1]
        else:
            print '"]'
    else:
        print '"];'
        children = []
        for n, child in enumerate(ast[1:]):
            children.append(dotwrite(child))
        print '    %s -> {' % nodename,
        for name in children:
            print '%s' % name,
```

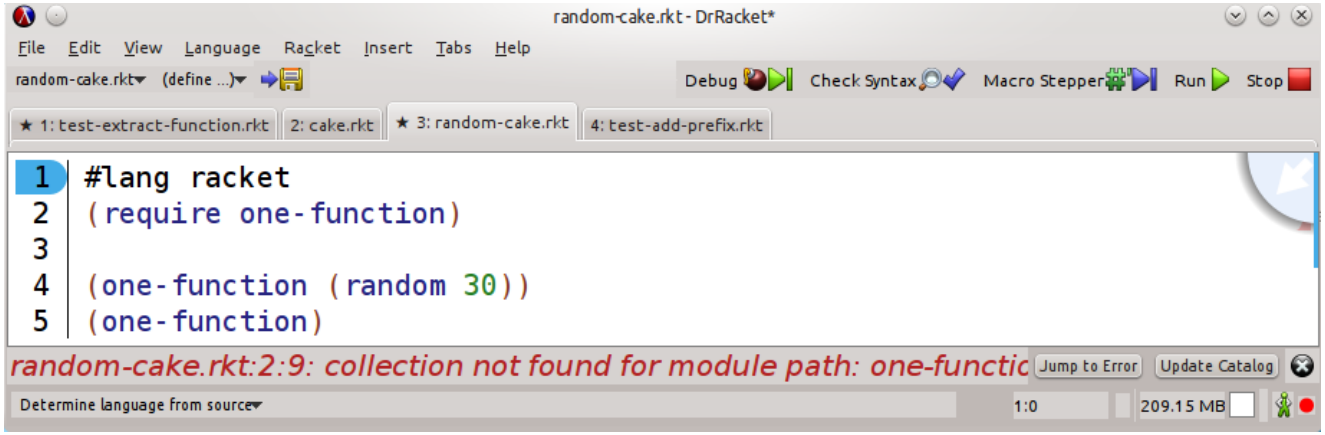
SmallTalk

teste

teste

DrRacket's Rename





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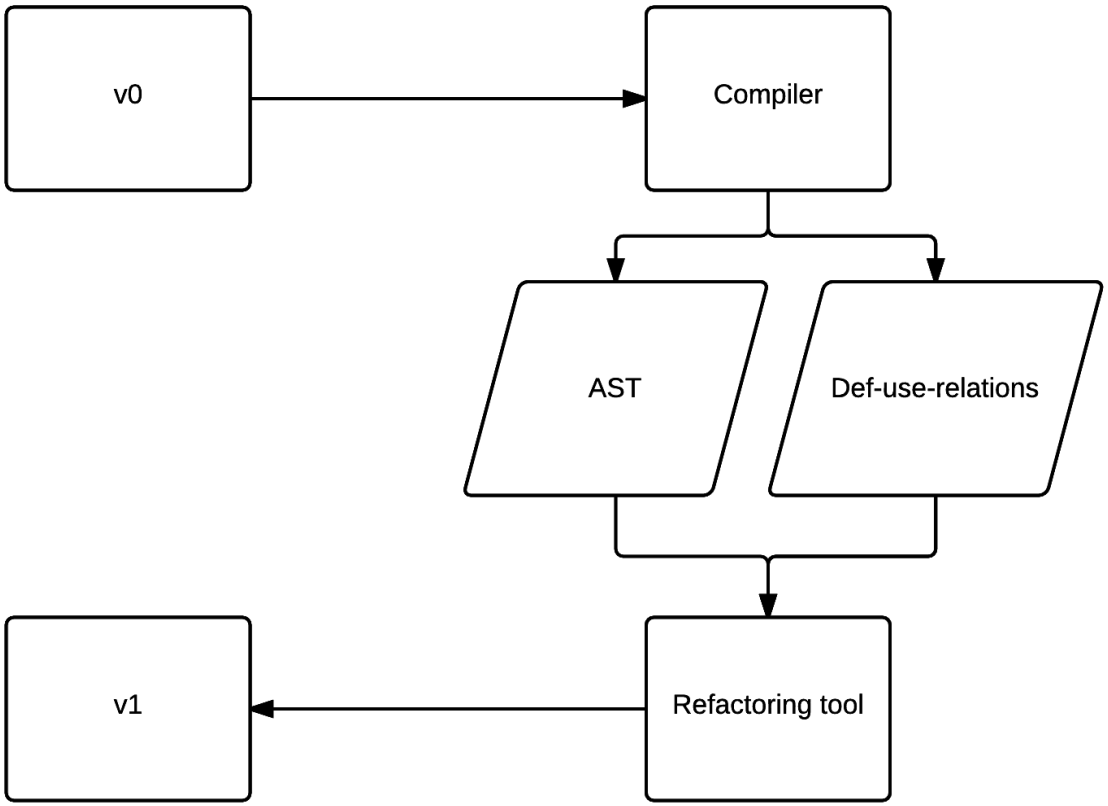
Architecture



Evaluation

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Summary

- The first main message of your talk in one or two lines.
- The second main message of your talk in one or two lines.
- Perhaps a third message, but not more than that.

- Outlook
  - Something you haven't solved.
  - Something else you haven't solved.

Thank you

Questions?