

Refactoring for Dynamic Languages

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 - Motivation
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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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```
;; 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))
```



```
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;

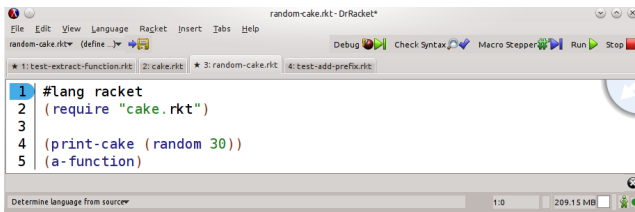
    /* ***** Parser ***** */
    var params = document.location.search.substr(1, document.location.search.len
gth).split('&');
    var i = 0;
    var tmp; var name;
    while ( i < params.length )
    {
        tmp = params[i].split('=');
        name = tmp[0];
        switch( name ) {
            case 'status':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

```
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,
```


teste

teste

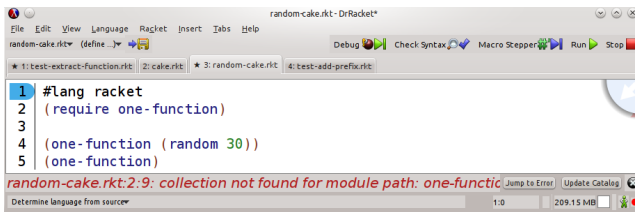
DrRacket's Rename



The screenshot shows the DrRacket IDE with the file 'random-cake.rkt' open. The editor contains the following Racket code:

```
1 #lang racket
2 (require "cake.rkt")
3
4 (print-cake (random 30))
5 (a-function)
```

The interface includes a menu bar (File, Edit, View, Language, Racket, Insert, Tools, Help), a toolbar with buttons for Debug, Check Syntax, Macro Stepper, Run, and Stop, and a tab bar showing four files: '1: test-extract-function.rkt', '2: cake.rkt', '3: random-cake.rkt', and '4: test-add-prefix.rkt'. The status bar at the bottom indicates 'Determine language from source', '1:0', and '209.15 MB'.



The screenshot shows the DrRacket IDE with the same file 'random-cake.rkt' open. The editor contains the following Racket code:

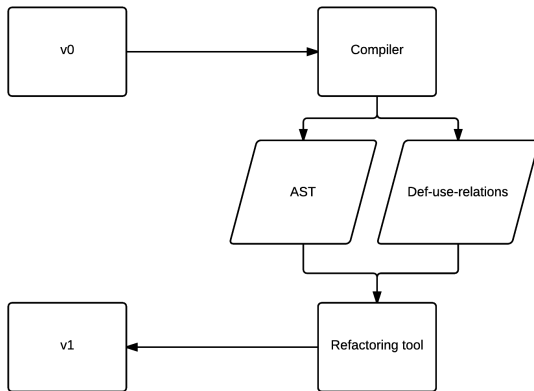
```
1 #lang racket
2 (require one-function)
3
4 (one-function (random 30))
5 (one-function)
```

The interface is identical to the previous screenshot, but a red error message is displayed at the bottom: 'random-cake.rkt:2:9: collection not found for module path: one-function'. The status bar also shows 'Jump to Error' and 'Update Catalog' buttons.

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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?