

A Guiler's Year of Racket

Christopher Lemmer Webber

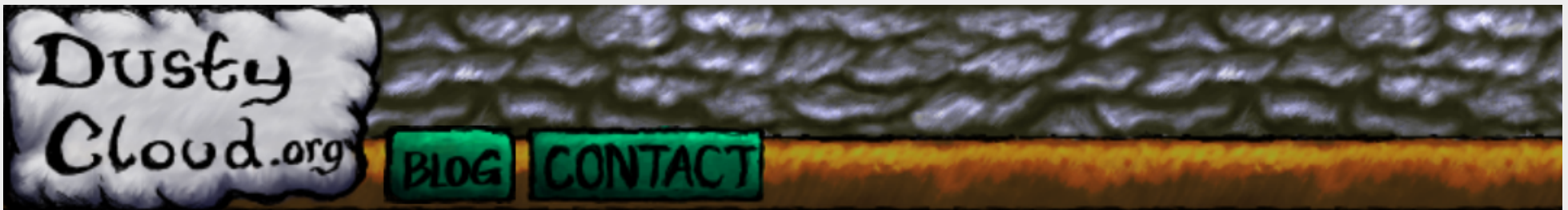
website: <https://dustycloud.org/>

email: cwebber@dustycloud.org

twitter: @dustyweb

fediverse: <https://octodon.social/@cwebber>

My journey as a Guiler...



Javascript beyond Javascript (with Guile?)

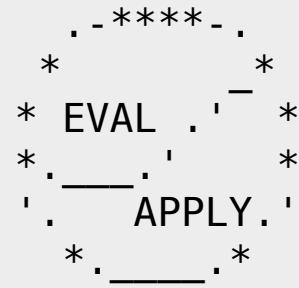
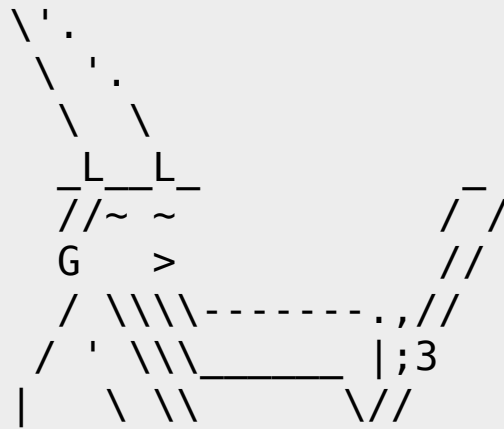
By Christopher Lemmer Webber on [Fri 15 August 2014](#)

I'm learning more in my spare time / off normal hours about compilers and graph theory and reading various books on lisp. I have an agenda here, no idea if it'll happen; at the very worst I put a lot of tools in my toolkit that I should have had. But there is another reason... Well, this one's easiest to lay out point for point, so here goes:

- Python is still my favorite language to write in day to day, but I guess that I keep feeling that any language that doesn't have a way to transcompile *nicely* to Javascript (or isn't Javascript itself) is unideal for writing really great web applications, for a simple reason: modern web applications are highly interactive, and I feel that a *really* stellar web application needs to share some code between the backend and the frontend. This becomes more obvious when writing dynamic templates or forms.

While Python probably has hands-down the nicest asynchronous library in current development with `asyncio`, the above problem makes it feel like you can only do







GuixSD

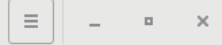


```
> ITV
You are carrying:
  • a glowing disc
j1mc wanders west.
> read sign
Sorry, I didn't understand that? (type "help" for common commands)
Aeva pulls on the shield of the statue, and a glowing copy of it materializes
into their hands!
You hear a voice whisper: "Share the software... and you'll be free..."
> read map
```



```
j1mc enters the room.
```

[connected]



Hi! This is mlemmer's page.



Hello, Morgan!

By: mlemmer
At: April 22, 2016 @ 2:30pm

Hi Morgan, I love you a lot. Thanks for being there for me, even when I was going crazy doing all this.

Hopefully, this will render. <3!

♥ Like ♻ Share 💬 Reply



Another test, but more serious?

By: mlemmer
At: April 22, 2016 @ 2:30pm

So, this is the first serious thing I'm writing to Pubstrate. It's only semi-serious. I've been pouring myself into this damn thing. I hope this qualifies as results. Heh!

Really, I want to make sure that various things work. For example, it would be really nice if [my homepage](#) was rendered as a link.

Anyway, I'll probably take a screenshot of this afterwards.

Wish me luck, intarwebs!

♥ Like ♻ Share 💬 Reply

I've found my home language!

I'm a guiler for life!

... right?

Approximate memory of conversation with wingo

<wingo> Just floating an idea, what if we combined Racket and Guile

<cwebber> WTF Racket has no mutable toplevel

<davexunit> WTF Racket has no mutable toplevel

<davexunit> I invested all my time into Guile,
WTF

<cwebber> Yeah WTF this is a terrible idea

... to be continued!

The digital humanities workshop!

Programmable Publishing

Digital Humanities for Everyone!



Want to learn computer programming, but don't think you're enough of a math / computer science person? Have we got the workshop for you!

Using the Racket programming language, the user-friendly text editor DrRacket, and the markup language Scribble, participants will learn:

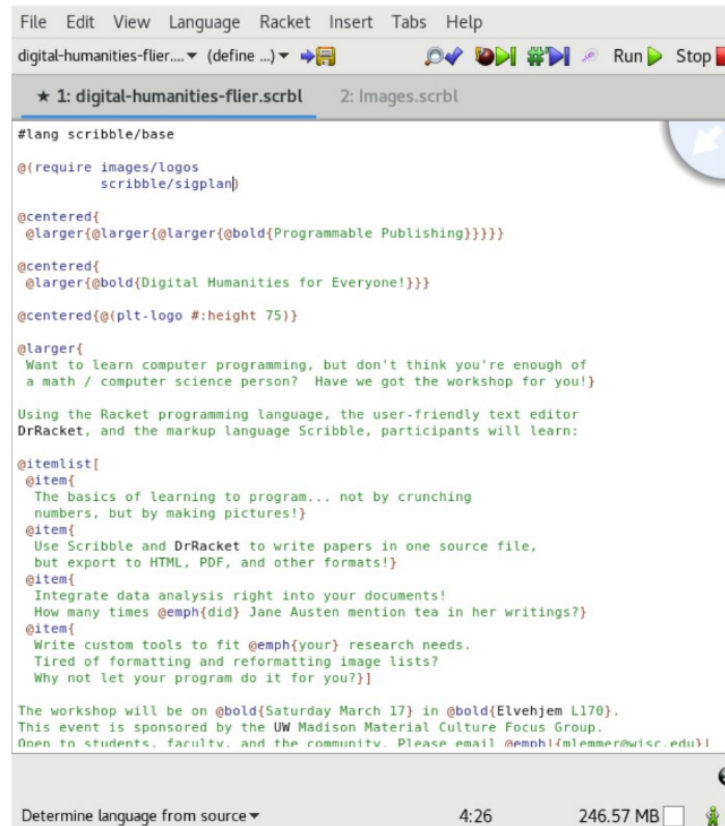
- The basics of learning to program... not by crunching numbers, but by making pictures!
- Use Scribble and DrRacket to write papers in one source file, but export to HTML, PDF, and other formats!
- Integrate data analysis right into your documents! How many times *did* Jane Austen mention tea in her writings?
- Write custom tools to fit *your* research needs. Tired of formatting and reformatting image lists? Why not let your program do it for you?

The workshop will be on **Saturday March 17** from **1-4pm** in **Elvehjem L170**. This event is sponsored by the UW Madison Material Culture Focus Group and is open to students, faculty, and the community. Please email mlemmer@wisc.edu if you are interested in participating as space is limited.

You *can* learn to program... yes, you!

Pssst... flip this flier up to see its source code!

The digital humanities workshop!



```
File Edit View Language Racket Insert Tabs Help
digital-humanities-flier... (define ...) Run Stop
★ 1: digital-humanities-flier.scrbl 2: Images.scrbl

#lang scribble/base
@(require images/logos
          scribble/sigplan)

@centered{
  @larger{@larger{@larger{@bold{Programmable Publishing}}}}}

@centered{
  @larger{@bold{Digital Humanities for Everyone!}}}

@centered{@(plt-logo #:height 75)}

@larger{
  Want to learn computer programming, but don't think you're enough of
  a math / computer science person? Have we got the workshop for you!}

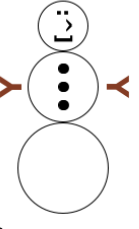
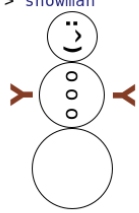
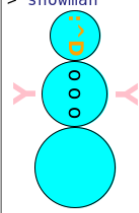
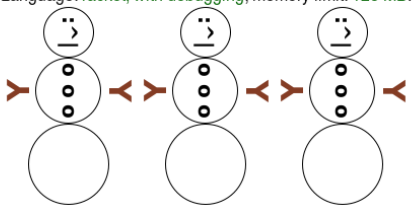
Using the Racket programming language, the user-friendly text editor
DrRacket, and the markup language Scribble, participants will learn:

@itemlist[
  @item{
    The basics of learning to program... not by crunching
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    Use Scribble and DrRacket to write papers in one source file,
    but export to HTML, PDF, and other formats!}
  @item{
    Integrate data analysis right into your documents!
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```

Determine language from source ▼ 4:26 246.57 MB

The digital humanities workshop!

JessieSn	MichelleSnow	TanyaSnowman.rkt -	JesseSnowman.rkt - DrRacket
<pre> #lang racket (require pict) (define (snowball size) (disk size #:color "white")) (define head (cc-superimpose (snowball 50) (text ":@" '(bold) 20 (* pi -.5)))) (define left-arm (colorize (text "Y" '(bold) 30 (* pi .5) "brown"))) (define right-arm (colorize (text "Y" '(bold) 30 (* pi -.5) "brown"))) (define button (disk 10 #:color "black")) (define buttons (vc-append 8 button button button)) (define body (hc-append </pre>	<pre> #lang racket (define (snowball size) (disk size #:color "white")) (define head (cc-superimpose (snowball 50) (text ":@" '(bold) 20 (* pi -.5)))) (define left-arm (colorize (text "Y" '(bold) 30 (* pi .5) "t (define right-arm (colorize (text "Y" '(bold) 30 (* pi -.5) "t (define body (hc-append left-arm (cc-superimpose (snowball 65) (text "o o o" '() 20 (* pi -.5))) right-arm)) (define butt (snowball 80)) (define snowman (vc-append head body butt)) </pre>	<pre> #lang racket (require pict) ;; Make as snowball (define (snowball size) (disk size #:color "cyan")) ;; Snowman components (define head (cc-superimpose (snowball 50) (colorize (text ":@" '(bold) 20 (* pi -.5) "orange")))) (define left-arm (colorize (text "Y" '(bold) 30 (* pi .5) "pink"))) (define right-arm (colorize (text "Y" '(bold) 30 (* pi -.5) "pink"))) (define body (hc-append left-arm (cc-superimpose (snowball 65) (text "o o o" '() 20 (* pi -.5))) right-arm)) (define butt </pre>	<pre> #lang racket (require pict) (define (snowball size) (disk size #:color "white")) (define head (cc-superimpose (snowball 50) (text ":@" '(bold) 20 (* pi -.5)))) (define left-arm (colorize (text "Y" '(bold) 30 (* pi .5) "brown"))) (define right-arm (colorize (text "Y" '(bold) 30 (* pi -.5) "brown"))) (define body (cc-superimpose (snowball 65) (text "o o o" '(bold) 20 (* pi -.5)))) (define body-with-arms (hc-append left-arm body right-arm)) </pre>
<p>Language: racket, with debugging; memory limit: 128 MB.</p>  <p>></p>	<p>Welcome to DrRacket, version 6.7 [3m]. Language: racket, with debugging; memory limit: 128 MB.</p> <p>> snowman</p>  <p>></p>	<p>Welcome to DrRacket, version 6.7 [3m]. Language: racket, with debugging; memory limit: 128 MB.</p> <p>> snowman</p>  <p>></p>	<p>Welcome to DrRacket, version 6.7 [3m]. Language: racket, with debugging; memory limit: 128 MB.</p>  <p>></p>
Determine language from source ▾	Determine language from source ▾	Determine language from source ▾	Determine language from source ▾ 4:2 474.83 MB

The digital humanities workshop!

How To Use Scribble to Write your Academic Papers: A Reference Tutorial

Morgan Lemmer-Webber

March 25, 2018

Abstract

This tutorial gives examples of the common functions and formatting tags you will need to write an academic paper using Dr. Racket and scribble. This document should be used as a reference guide when you are ready to set up your own academic paper.

This document itself is written in Scribble, and will be most useful to you if you look at both the scribble files (HowTo.scrbl, Basics.scrbl, DocumentStructure.scrbl, Lists.scrbl, Tags.scrbl, Links.scrbl, Tables.scrbl, Citations.scrbl, Images.scrbl, Export.scrbl) and the pdf (HowTo.pdf) or html output (HowTo.html) at the same time. You can find these documents on our git repository <https://github.com/mlemmer/DigitalHumanities>.

Both Racket and Scribble have wonderful documentation and tutorials available, see below for useful references. Often times if you are stuck and can't figure out how to write a function or debug your code on your own you can find an answer by simply googling it (be sure to include some combination of Racket/Scribble in your search because there are a lot of programming languages out there). Racket also has a thriving community of programmers, so you can post a question on the [Racket Users forum](#).

Introduction to Racket with Pictures: <https://docs.racket-lang.org/quick/index.html>

Web Applications in Racket: <https://docs.racket-lang.org/continue/index.html>

Racket Guide: <https://docs.racket-lang.org/guide/index.html>

Racket Reference: <https://docs.racket-lang.org/reference/index.html>

Racket Documentation: <https://docs.racket-lang.org/continue/index.html>

Scribble tutorial: ["https://docs.racket-lang.org/scribble/getting-started.html"](https://docs.racket-lang.org/scribble/getting-started.html)

Scribble Manual: <https://docs.racket-lang.org/scribble/>

1 License

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All code for this project is licensed under the GNU Lesser General Public License version 3.0 (LGPL) or (at your option) any later version of the GNU LGPL as published by the Free Software Foundation.

2 Basics of the Scribble/Racket language

The first line of your document should indicate the language you are using `"#lang scribble/doc"`. There should be nothing else on that line. The next element on your document should be any libraries you will



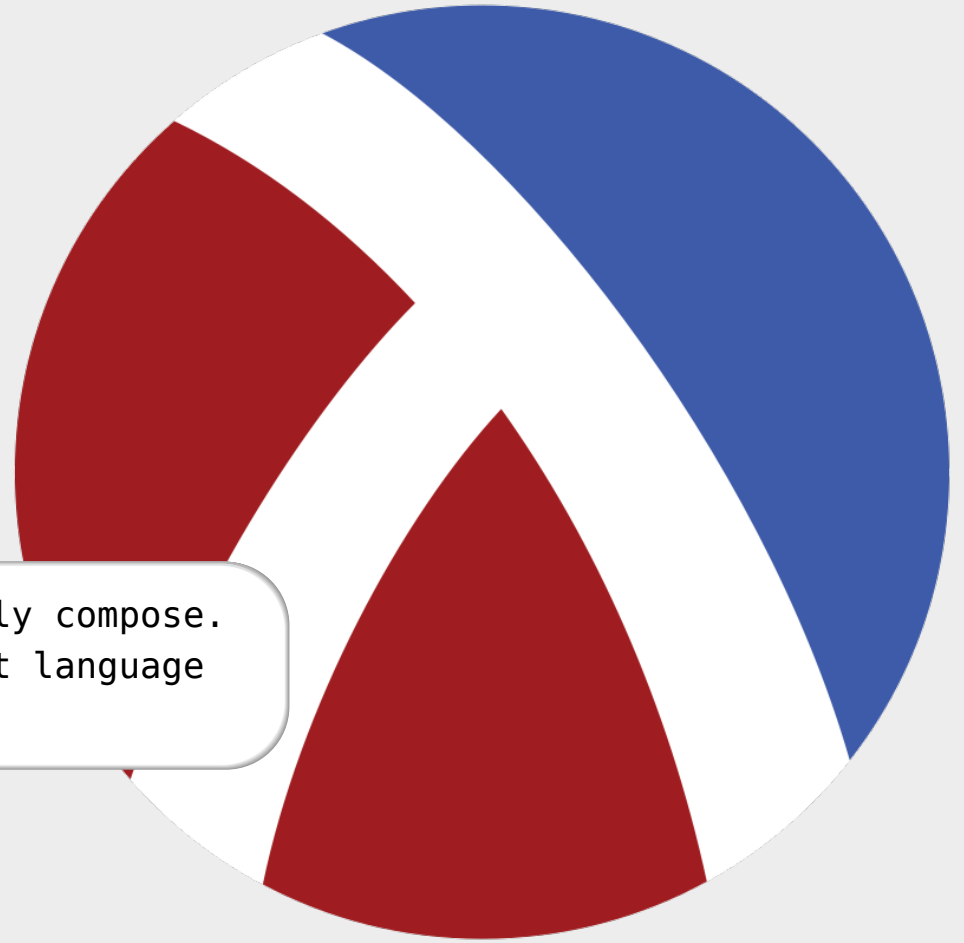
Okay, we're doing some Racket workshops...
But I'm not switching! I'm already
super invested in Guile!
(Plus, no mutable toplevel in Racket!)



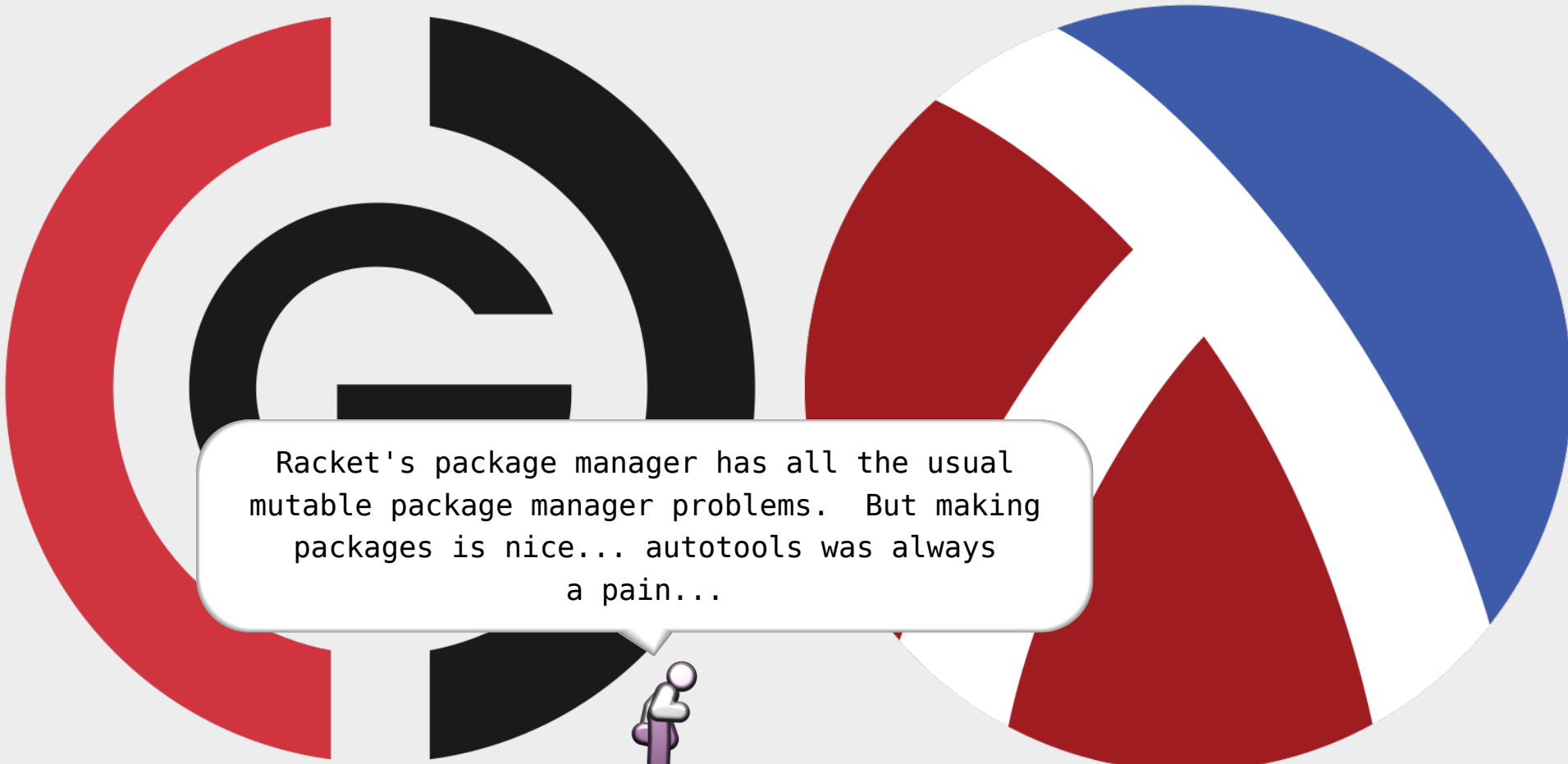


Hm... pict is pretty cool.
Some fun toys here...





#langs are neat but they don't really compose.
Kind of oversold but it's nice that language
exploration is so easy.

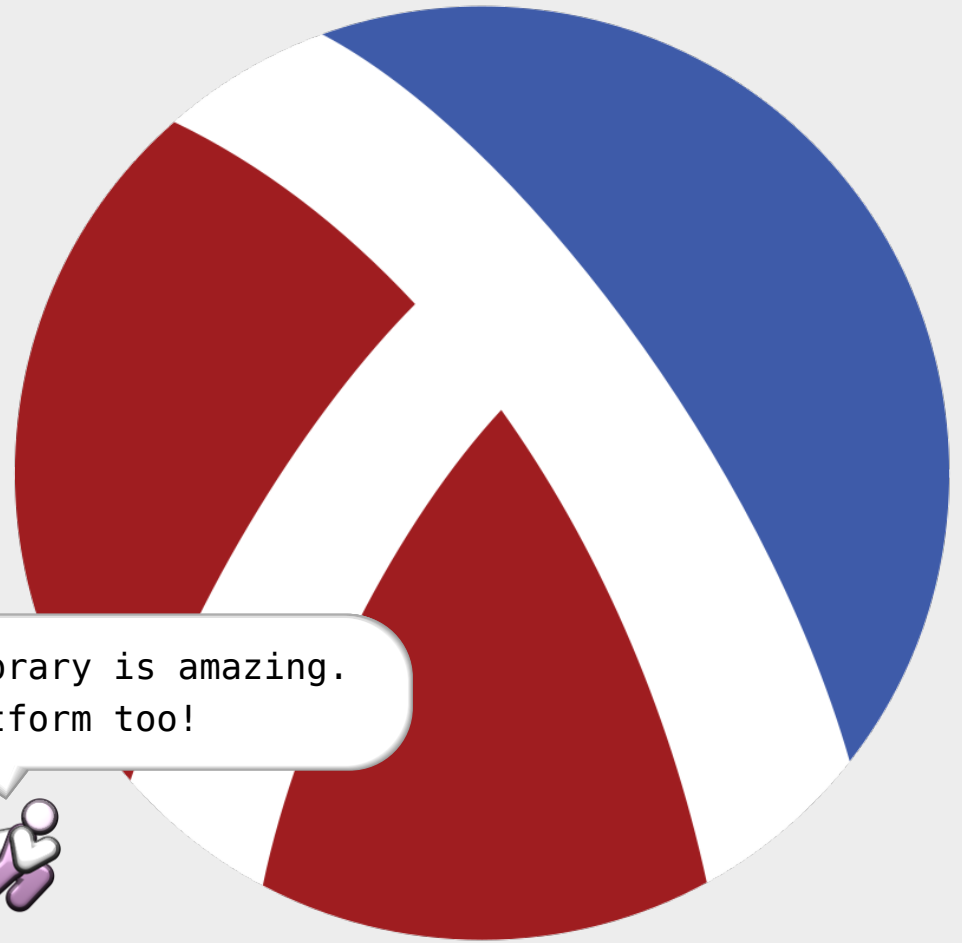
The image features two large, stylized letters, 'E' and 'A', rendered in a segmented, circular style. The 'E' is composed of red, black, and white segments, while the 'A' is composed of red, white, and blue segments. A small, purple, stick-figure character is positioned at the bottom center, pointing upwards towards a white speech bubble that contains text.

Racket's package manager has all the usual
mutable package manager problems. But making
packages is nice... autotools was always
a pain...



These docs are really great!
Lots of good tutorials, even for newbies...
And Scribble really is a lot of fun!





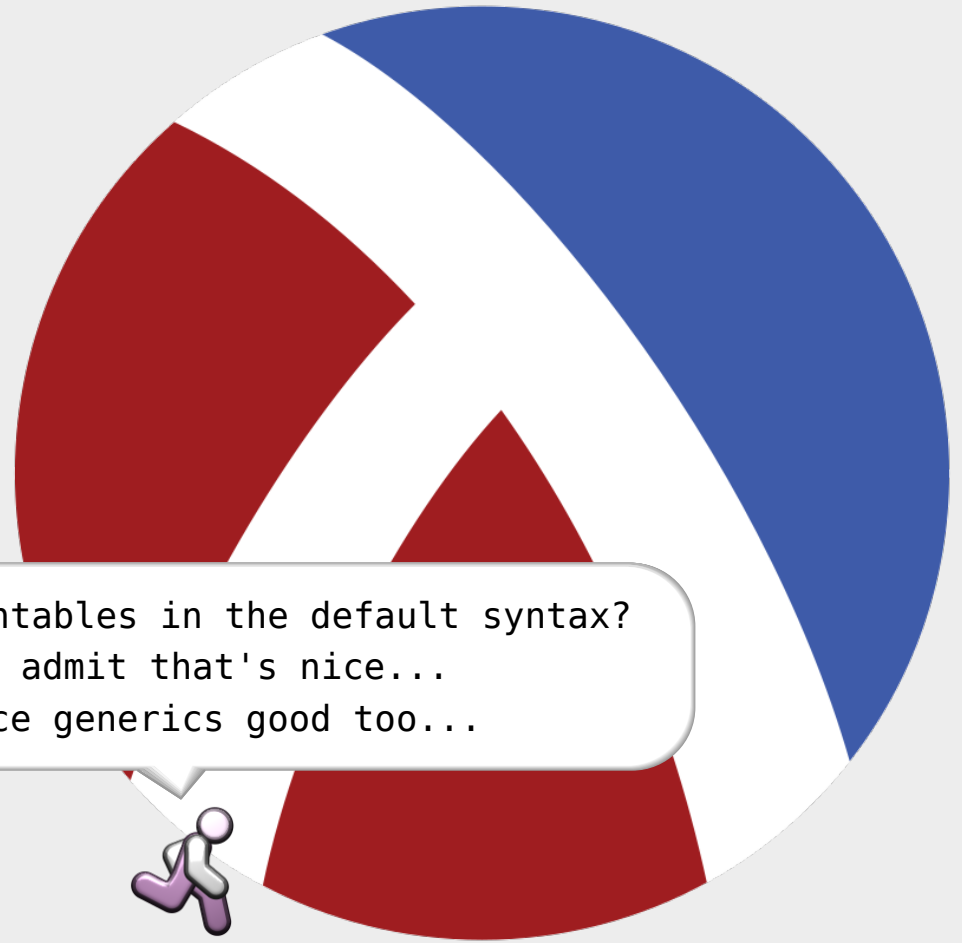
Wow, this GUI library is amazing.
Cross platform too!





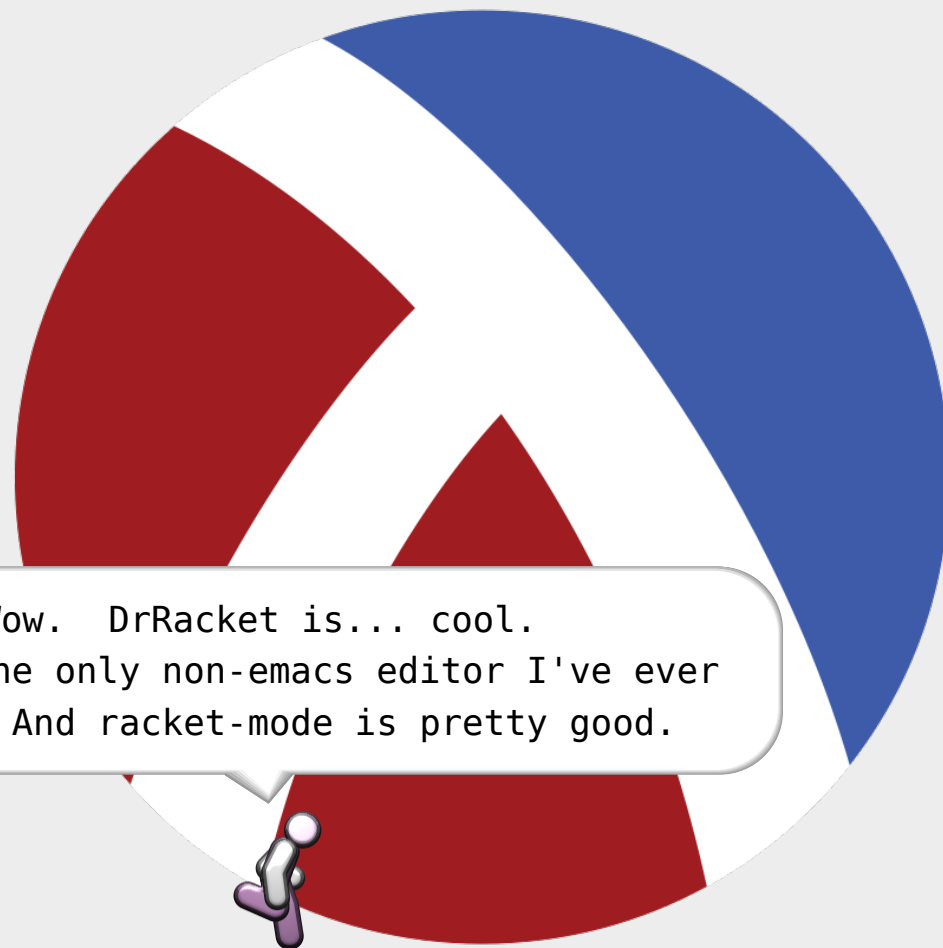
Whoa, just look at all these libraries...
That's like, 50 less yaks to shave...





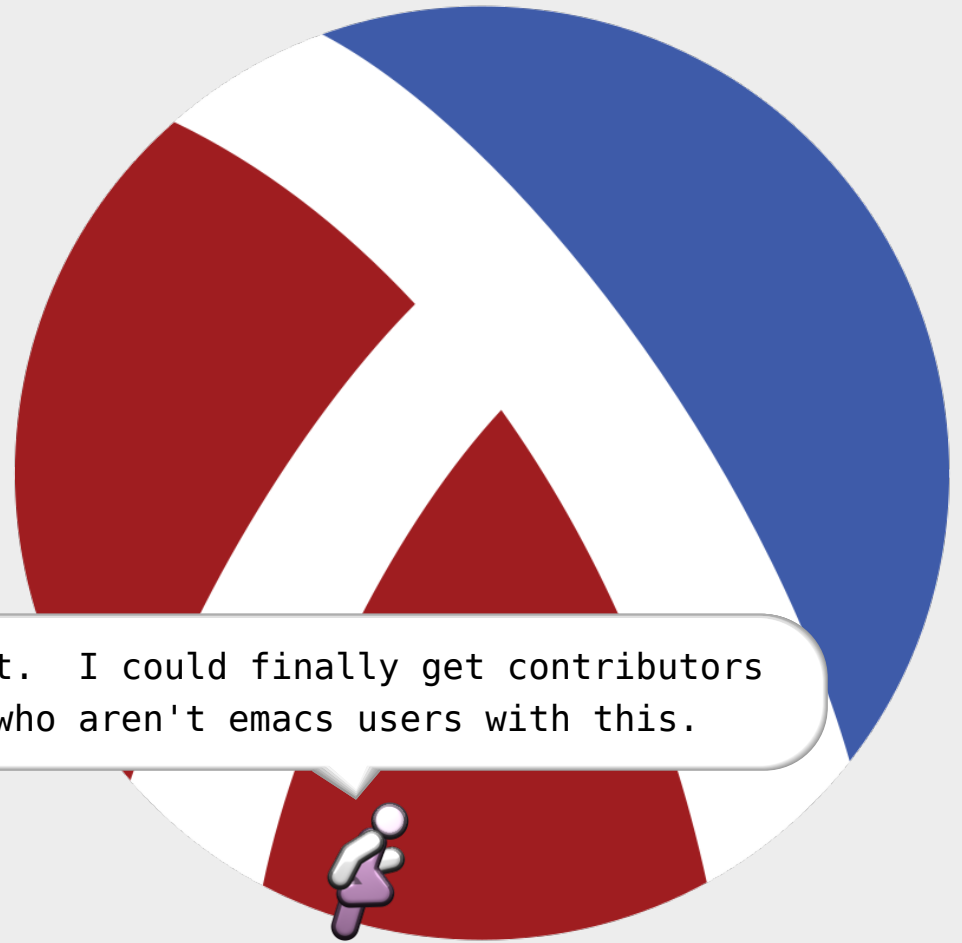
Immutable hashtables in the default syntax?
Gotta admit that's nice...
Sequence generics good too...





Wow. DrRacket is... cool.
This is the only non-emacs editor I've ever
liked. And racket-mode is pretty good.





Wait. I could finally get contributors who aren't emacs users with this.



What about that immutable toplevel though?

It's not as bad as I thought. Hacking at the REPL usually feels the same.

How it works: each command creates new scope which "shadows" parent

I'll admit: the immutable toplevel does prevent many "live hacking" errors too

But I still miss the mutable toplevel while programming things like games.

And Racket's community is clear, right? "The toplevel is hopeless!"

What about that immutable toplevel though?

Maybe not! From Matthias Felleisen:

Yes I know this camp very well and I am sorry I didn't want to support them for the longest time. We might be in a position now to help them, though given our limited resources, it's not a truly high priority. ~~ Then again, they might be able to hack the language on their own — Matthias

Guile still has some great things!

- Guix!
- Some other nice programs/libraries: Mes, Chickadee, etc...
- Wingo's amazing compiler work!
- ... Guix!!!

Should Guile try to "catch up"?

I dunno?

Too many libraries to catch up to?

Not sure how we can compete with DrRacket

Grand heresy: Guix on Racket???



???

GuixSD

???



A little less heretical

- Package more Racket packages in Guix
- Maybe make a Guix GUI in Racket

The rest of that conversation (from memory)

<wingo> cwebber, weren't you just researching lisp history and marveling at how the lisp communities kept splitting and almost couldn't even agree to standardize common lisp

<cwebber> uh um uh um um um ummmmm

<wingo> what about this: what if Guile were a more interesting language for Racket to target than Chez?

<cwebber> oh, hmm!

Now that is an interesting idea!



!!!

!!!



Conclusions!

- I still love Guile, and I haven't left it
- But maybe Racket is my new primary residence?
- Guile and Racket aren't enemies (the non-sexp using heretics are)
- Let's think about how to work together more!

Thanks! Do we have time for some demos?

Christopher Lemmer Webber

website: <https://dustycloud.org/>

email: cwebber@dustycloud.org

twitter: @dustyweb

fediverse: <https://octodon.social/@cwebber>

This whole talk written in Racket's slideshow #lang!