Spelunking through JPEG in Racket

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Theses

We should work with JPEG and other media from safe languages

Our languages should understand the structure of JPEG

Guilers and Racketeers should steal more code and ideas from each other
An idiot in racketland

A live demo, in which I make a dog’s dinner of the fine DrRacket
glitch or no?

> (jpeg -> bitmap "test.jpg")
Welcome to DrRacket, version 6.5 [3m].
Language: racket, with debugging; memory limit: 128 MB.
> (jpeg->bitmap re-encoded)
Lessons learned?

DC component: Things mostly just work
AC components: Lots of details...
Easy

logand / bitwise-and
1+ / add1
match differences
module differences
Lovely
Background expansion in DrRacket
Bitmaps in DrRacket
Packages very nice
struct
(module+ test ...)
Chucklers

Same problem Guile has when printing large data

(It prints large because structs, equal?, and tests)
Head-scratchers

bytevector-s16-ref with endianness?
Why are bytes so stringy?
What pronoun to use for struct instances?
Port argument to write-bytes optional? (Compare to R6RS)
No embedded array literals?
Why no right-click in DrRacket?
Gnarlies

No generic array facility
math/array weird
array-map lazy but not documented as such
Unfolds over arrays hard
Reloads versus incremental dev
Summary

Happy hacking!

https://github.com/wingo/racket-jpeg

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