

The Feel of Java Revisited

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Q: What the hell did I mean by:

Java is a blue-collar language

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Topics

- If you expected...
 - A deep exposition on Closures
 - Mud wrestling
- It ain't gonna happen here
 - Neal can speak more eloquently on Closures than I ever could.
 - Mud is boring
- Instead:
 - The prehistory of Java
 - The Feel of Java

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The Prehistory of Java

- What shaped my thinking
- Something of a geek autobiography

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First Learned

- FOCAL
 - build stuff fast!
- PDP-8 assembler
 - build fast stuff!
for the day :-)

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Designing my first scripting language: YORKMT

- Started life as a magtape copy program
- Feature creep added data correction, imaging, device handling, ...
- Too many changes!
- Experience with TECO suggested adding scripting. Success!
- Users did unexpected things: instrument calibration, diagnostics, ...

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Eventually

- Fortran, Cobol, Basic, CDC assembler, ...
 - jobs
- Pascal, Simula, Lisp, Algol, IBM assembler, ...
 - when I finally went to school

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Lessons along the way

- Threading is cool
 - Hydra, Cm*, SMP BSD, Hibbards Algol68
- ANDF is easy (!)
 - PERQ->VAX code migration
(the PhD thesis I should have written)
- The power of trustworthy pointers
 - Multics, Hydra, Cm*, Pascal, Mesa
- Optimizers can do surprising things
 - BLISS, MUMBLE (the other thesis I should have written)
- Code-as-algebra is awesome!
 - PhD thesis, ACE

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Unix Emacs

- Reinforced YORKMT lessons
 - Power of scripting
 - People do the damndest things
(everything gets stretched to its limits)
- Added
 - The power of the community

GREEN

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NeWS

- Networked Extensible Window System
(predated X11)
- A window system based on scripting....
PostScript (!!)
- More insanely unusual users
 - (never kid yourself into believing you know what will be done with what you've built)
- "Technical" success, but two nagging issues:
 - Scripting performance
 - (cope with user surprise scale)
 - Security

Trivia Question:

What was Java called,
before it was called "oak"?

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GreenTalk

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The original concept

- Was all about building networks of things, orchestrated by a scripting language
- (Unix shells, AppleScript, ...) but I was real nervous

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Commercial software priority list, 1990

- Compatibility (V2V)
- Performance
- Portability
- Reliability
- Networking
- Multithreading
- Security

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Consumer Electronics priority list

- Security (safety)
- Networking (connectivity)
- Portability (cost: CPU du jour)
- Reliability
- Performance
- Multithreading
- Compatibility (rewrite for every product)

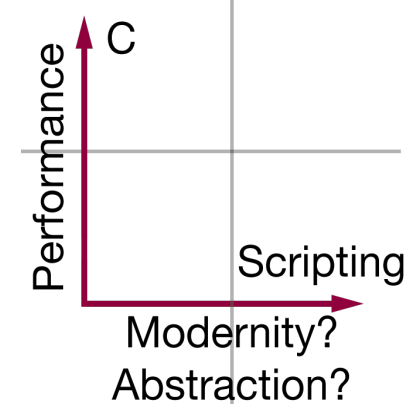
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Shake and Stir

- Security
- Reliability
- Networking
- Portability
- Compatibility
- Multithreading
- Performance

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Perceptions, circa 1990



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BUT

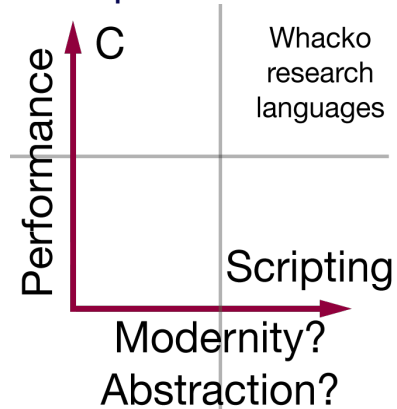
- Performance that sucks
- Sucks

This dichotomy always bugged me

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Perception of Academia



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This perception always bugged me

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The Developer Community (then)

- The Blue Collar crowd
- C for everything
- (they only had or knew how to use a hammer)
- not well suited to the task at hand
- But decades of research had solutions

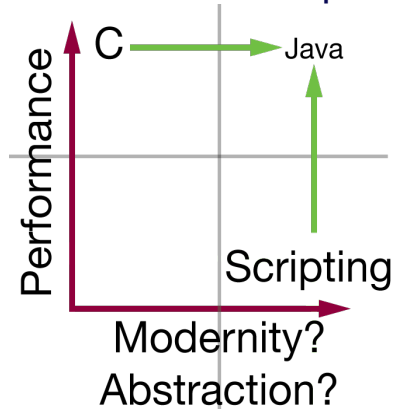
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A Big (but quiet) Goal:

How close could I get to a "scripting" feel, without giving up too much?

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A subversive compromise



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Yes, Java's not a research language

- But it's a vehicle to apply research results to real problems.
- There's quite a chasm between Academe and the "Blue Collar" world.

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A Wolf in Sheeps Clothing

- C syntax to make developers comfortable
- Lisp/Smalltalk/Mesa/Simula/ ... to get the job done

PS

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Puzzlers

- Are unavoidable
- Design is often about minimization
- Engineering is whack-a-mole
- Something simple: $a < b \neq a - b < 0$
- Floating Point: a puzzler minefield
 - but would you eliminate it?

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Questions?

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Design space is gravitationally lumpy

"Lisp is a black hole. If you try to design something like Lisp, it gets sucked in and becomes Lisp"

Guy Steele, hallway conversation, 1980ish

But orbital dynamics are chaotic

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