C++ for R Programmers

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Invited Session: *What other languages should R users know about ?*

useR! 2012
Vanderbilt University
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Here be
Dragons
ALBION
DRACONES

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- As a widely used language it also has good tool support (debuggers, [memory] profilers, code analysis).

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And C++11 adds many more goodies that could be called a fifth language.

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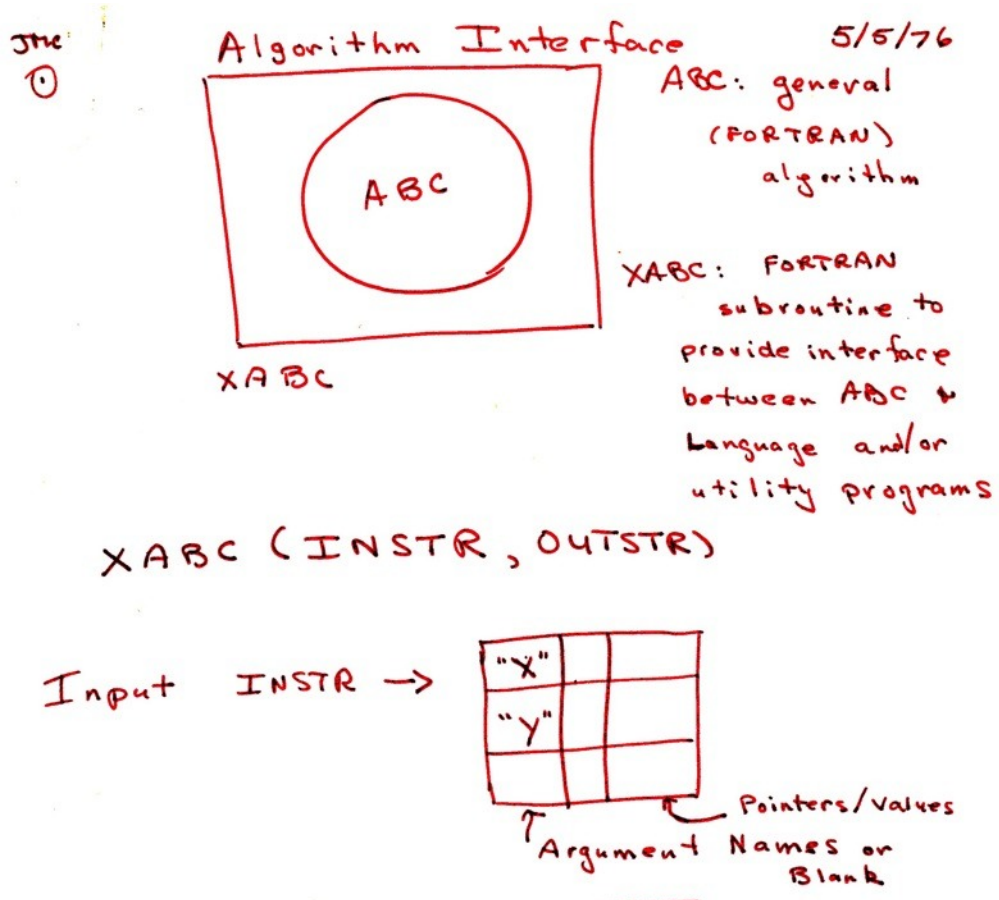
- It so happens that I think R and C++ mix well via Rcpp and RInside.

John Chambers agrees – and shares a "vision" from 1976



Source: John Chambers' talk at Google, 2010.

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- "Empirically speaking", 68 CRAN packages (as of 3 June 2012) using Rcpp seem to agree.
- This makes Rcpp the most widely used foreign-language interface package for R (as it overtook rJava recently).

Python

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Trust me, Mogli.... Seriously?

Julia

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My Julia – and until I find a matching language named after my other daughter Anna ...

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3. Chris will cover both in the Python part.

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- Lots of very promising changes—while maintaining full compatibility and
  - still being the *fastest possible language*
  - while having *zero overhead*.

C++ Resources

- The book / website C++ Annotations by Brokken is very good, current and frequently updated.
- StackOverflow has a very good curated definite C++ book list
- Wikipedia is thorough as usual on C++ as well as C++11
- R and C++: Rcpp page, CRAN page and JSS paper
- Lastly, thanks to JJ, two pointers to two very recent talks:
  - Herb Sutter on (Not your father's) C++
  - Chander Carruth on Clang Defending C++ from Murphy's Million Monkeys