Automatic Generation of Python Extensions to C++ and F95 Class Libraries

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Credits

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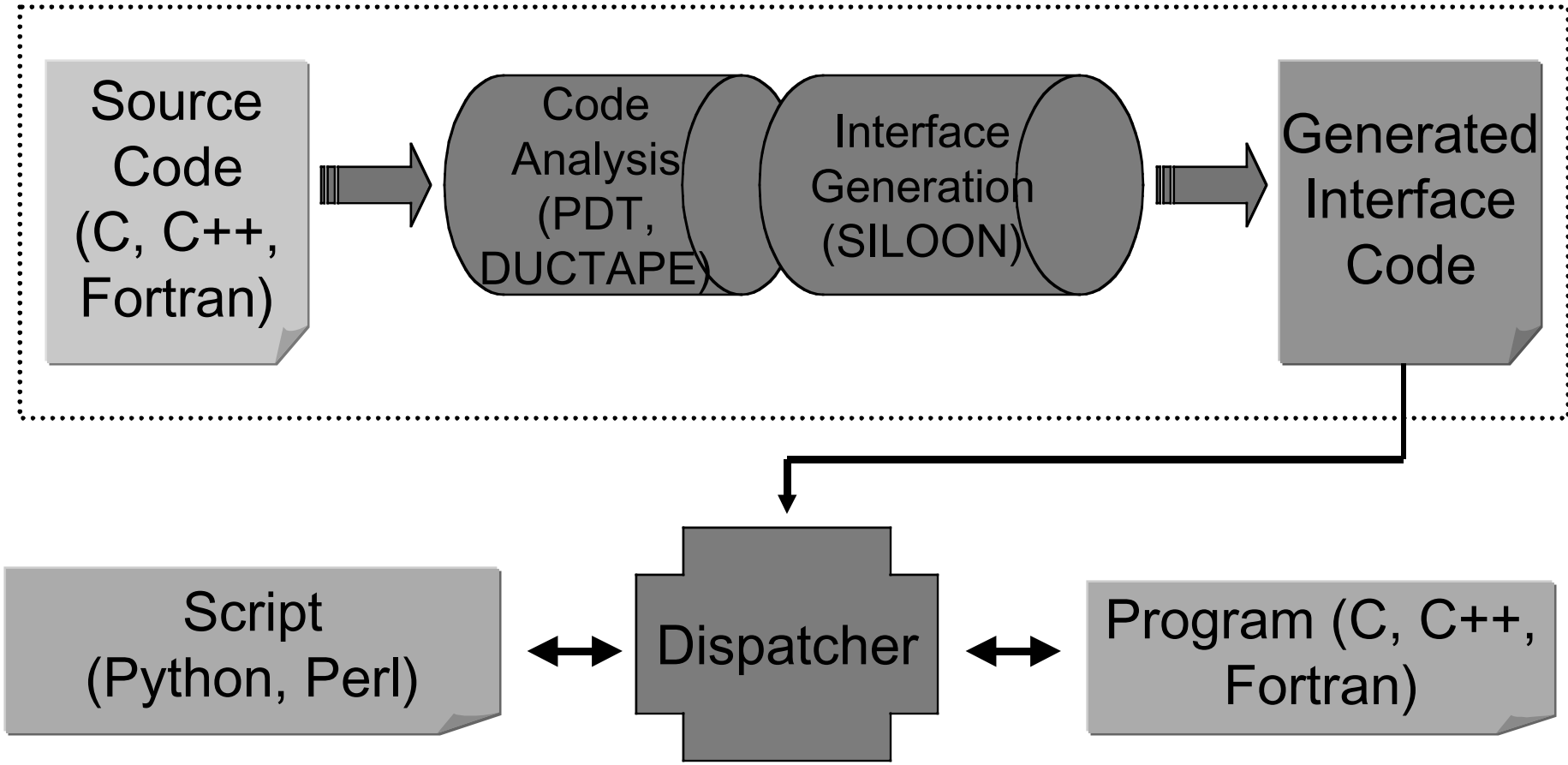
Introduction

- What
  - Use scripting languages (Python and Perl) to access C++ and FORTRAN libraries
- Why
  - Taming of the beasts (C++ and FORTRAN)
- Why not SWIG
  - C++ templates
  - FORTRAN 95

Supported Languages

- Scripting languages (client)
  - Python
  - Perl
- Compiled languages (compute server)
  - C
  - C++
  - FORTRAN
  - FORTRAN 95

Using SILOON



How To

- Basic steps to create a SILOON module:

```
[1]% siloon-init example
[2]% cd siloon-example
[3]% emacs user.defs
[4]% emacs prototypes.doinclude
[5]% make interface
[6]% make shared
[7]% python
```

C++ and F95 Support

- SILOON provides support for most C++ features
  - classes
  - virtual and static member functions
  - constructors and destructors
  - overloaded functions
  - passing function parameters by pointer or by reference
  - templates
  - operators
- SILOON provides support for F95 features
  - F95 arrays
  - modules

Web Links

- SILOON home page:
  - http://www.acl.lanl.gov/siloon/
  - siloon-team@acl.lanl.gov
- Program Database Toolkit and Ductape
  - www.cs.uoregon.edu/research/paracomp/pdtoolkit