Photran Creation Review

Friday, 24 June 2005
http://photran.cs.uiuc.edu

What is Photran?

The goal of the Photran project is to bring a fully integrated programming environment for the Fortran programming language, with rich support for editing, debugging, and _refactoring_, to Eclipse.

Our Research Interests

- Refactoring High-Performance Languages
- Open-Source Programming Tools
- Program Representation and Modeling
- Object-Oriented Framework Evolution
- Patterns and Object-Oriented Languages
- Software Architecture and Design
- Reflection and Metalevel Architectures
- High-Performance Computing
- Components and Generative Architectures

Photran History

- Opdyke's C++ Tool
- Refactory and the Refactoring Browser
- IBM Eclipse Innovation Grant
- IBM PERCS High Performance Computing Initiative
- NASA IBEAM Project
- CRefactory

Status: November 2004

- Produced two MS Theses
- Brought aboard two PhD Candidates
- Repaired numerous parser bugs
- Greatly Enhanced Stability
- Implemented Outline Views
- Make / Run / Debug under Linux
- Polished the GUI

Status: March 2005

- Hyperion Release (14 January 2005)
- Parsed Full IBEAM Codebase
- Support for g77, g95, debugging under Windows / Linux
- Support for Lahey Fortran Windows
- Eos (Eclipse 3.0.1) (4 February 2005)

Status: June 2005

- Official Eos 2.1.0 Release @ EclipseCon
- Support for Mac OS, Solaris
- Tested with F, more compilers
- New in-house parser nearing completion
- New program model designed, under implementation

Interim Leads

- Ralph Johnson (UIUC)
- Brian Foote (UIUC)

Interested Organizations

- <u>Dept. of Computer Science, University of Illinois at Urbana-Champaign</u>
- <u>Dept. of Astronomy, University of Illinois at Urbana-Champaign</u>
- <u>NCSA, University of Illinois at Urbana-Champaign</u>
- ASC Flash Center, University of Chicago
- Dept. of Astronomy, SUNY Stonybrook
- Vanderbilt University
- Northrop-Grumman Corporation
- Flensburger Shiffbau Gesellschaft
- Los Alamos National Laboratory
- The Fortran Company
- Intel

Potential Committers

- Brian Foote, UIUC
- Ralph E. Johnson, UIUC
- Spiros Xanthos, UIUC
- Jeffrrey Overbey, UIUC
- Danny Dig, UIUC
- Munawar Hafiz, UIUC
- Dirk Rossow, FSG
- Walt Brainerd, The Fortran Company
- Nathan Debardeleben, LANL
- Craig Rasmussen, LANL
- Tianchao Li, Technical University of Munich
- Leo Tregiarri, others, Intel

Future

Q4 2005: Initial Refactorings (rename, extract procedure), better F77 and fixed format support

Q1 2006: Rich repertoire of refactorings

Q? 2006: Content assist, …

Photran: A Fortran Development Tool (FDT) For Eclipse

http://www.photran.org