Why study PL?

- Where did this come from?
- What else do we plan to do?
- How can you comment?

Why Undergraduates Should Learn the Principles of Programming Languages*

ACM SIGPLAN Education Board
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Abstract

Undergraduate students obtain important knowledge and skills by studying the pragmatics of programming in multiple languages and the principles underlying programming language design and implementation. These topics strengthen students' grasp of the power of computation, help students choose the most appropriate programming model and language for a given problem, and improve their design skills. Understanding programming languages thus helps students in ways vital to many career paths and interests.

This white paper is based on contributed articles, discussions, and presentations from the 2008 SIGPLAN Programming Language Curriculum Workshop [3, 4].

Programming languages are the medium through which we describe computations. More specifically, we use the model provided by a programming language to discuss concepts, formulate algorithms, and reason about problem solutions. Programming languages define models tailored to thinking about and solving problems in intended application areas. For example, the C language provides a model close to a computer's underlying hardware, a spreadsheet language (such as Excel with Visual Basic for Applications) provides a model of cells and constraints for solving financial problems, and so on.

The languages used in practice change continuously, as advances in our field and the broadening uses of technology change how we model and express computation

SIGPLAN Education Board

Background:

- Outgrowth of May 2008 SIGPLAN PL Curriculum Workshop
- Formed April 2009

Goals/charge:

- Create “Why undergrads should study PL” document for non-PL people
- Create detailed “What/How” sample curricula
- Provide forum for the SIGPLAN community for curriculum enhancement and advocacy
- Raise visibility with curriculum-standards groups
- Identify other tasks to improve PL education

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Status

- Public draft of “Why Document” for non-PL people
  - Huge thanks to Steve Freund
  - Feedback from 2008 workshop members
  - Now soliciting feedback from SIGPLAN community
- Website / blog for discussion and feedback
  - http://mt4.acm.org/educationboard/
  - Read the why document; tell us what you think (6 short pages)
- ACM Education Council now invites SIG representatives
  - Grossman to attend first meeting late June
- Limited progress on “What” documents
- Position papers at SIGCSE 2009 and OOPSLA 2009 Workshop on Concurrency in Curricula