Evaluation and Usability of Programming Languages and Tools (PLATEAU)

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Abstract

Programming languages exist to enable programmers to develop software effectively. But how *efficiently* programmers can write software depends on the usability of the languages and tools that they develop with. The aim of this workshop is to discuss methods, metrics and techniques for evaluating the usability of languages and language tools. The supposed benefits of such languages and tools cover a large space, including making programs easier to read, write, and maintain; allowing programmers to write more flexible and powerful programs; and restricting programs to make them more safe and secure. This workshop gathers the intersection of researchers in the programming language, programming tool, and human-computer interaction communities to share their research and discuss the future of evaluation and usability of programming languages and tools. We are also interested in the input of other members of the programming research community working on related areas, such as refactoring, design patterns, program analysis, program comprehension, software visualization, end-user programming, and other programming language paradigms.

Categories and Subject Descriptors D.3.0 [*Programming Languages*]: Standards; H.1.2 [*User/Machine Systems*]: Human Factors

1. Main Themes and Goals

Following on from the three previous iterations of the PLATEAU workshop at OOPSLA/Onward! and SPLASH, this workshop brings together practitioners and researchers interested discussing usability and evaluation of programming languages and tools with respect to language design and related areas. We will consider: empirical studies of programming languages; methodologies and philosophies behind language and tool evaluation; software design metrics and their relations to the underlying language; user studies of language features and software engineering tools; visual techniques for understanding programming languages; critical comparisons of programming paradigms, such as object-oriented vs. functional; and tools to support evaluating programming languages. We have two goals:

1. Develop and sustain a research community that shares ideas and collaborates on research related to the evaluation and usability of languages and tools.
2. Encourage the languages and tools communities to think more critically about how usability affects the design and adoption of languages and tools.

2. Organizers

- **Shane Markstrum** is currently a Software Engineer at Google in New York, USA. Prior to joining Google he was an Assistant Professor in the Computer Science department at Bucknell University and a Visiting Scholar at Victoria University of Wellington, New Zealand. He received his Ph.D. from the University of California, Los Angeles in 2009. His research interests include domain-specific languages and tools for extensible type systems; and building tool support for non-traditional language constructs.
- **Emerson Murphy-Hill** is currently an Assistant Professor at North Carolina State University, USA. Prior to joining the NCSU faculy he was a postdoctoral researcher at the University of British Columbia in the Software Practices Lab with Gail Murphy. He received is Ph.D. from Portland State University in 2009. His research interests include human-computer interaction and software tools.
- **Caitlin Sadowski** is currently a Software Engineer at Google in Mountain View, USA. She received her Ph.D., focused on dynamic analyses for detecting concurrency errors, from the Computer Science Department of UC Santa Cruz where she was advised by Jim Whitehead and Cormac Flanagan. Her research interests include

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the evaluation and usability of programming languages and software, parallelism and concurrency, and computer science education. She was a recipient of a distinguished paper award at OOPSLA 2011 for her paper "Two for the Price of One: A Model for Parallel and Incremental Computation." She was also a Co-Chair for the SPLASH/OOPSLA Transitioning to Multicore (TMC) workshop in 2011 and the ICSE User evaluation for Software Engineering Researchers (USER) workshop in 2012.

3. Program Committee

The following people form the Program Committee (PC) for the workshop:

- Yvonne Coady - University of Victoria, Canada
- Jonathan Edwards - MIT, USA
- Thomas Fritz - University of Zurich, Switzerland
- Philip Guo - Google, USA
- Stefan Hanenberg, University of Duisburg-Essen, Germany
- Ciera Jaspan, Cal Poly Pomona, USA
- Thomas LaToza - UC Irvine, USA
- Portia O'Callaghan - MathWorks, USA
- Chris Parnin, Georgia Institute of Technology, USA
- Philip Wadler, University of Edinburgh, UK

4. Anticipated Attendance

We anticipate the following number of attendees:

- Minimum: 20
- Ideal: 35
- Maximum: 60

5. Advertisement

We advertised this workshop by inviting participants of workshops in the areas of language design, tools, and general usability directly; as well as by emailing related mailing lists, posting on blogs contacting specific people known to be working in this area directly, and through our group mailing list. In addition we maintain a website for presenting organizational information [1].

6. Participant Preparation

Workshop participants submit a paper prior to one month before the workshop. Papers are made available through the workshop website and participants are encouraged to have read the papers before attending the workshop. Participants are also asked to prepare a short presentation to support their paper. The length limit on papers is 10 pages.

We look for papers that describe work-in-progress or recently completed work based on the themes and goals of the workshop or related topics, report on experiences gained, question accepted wisdom, raise challenging open problems, or propose speculative new approaches.

7. Activities and Format

This workshop is run as a full-day workshop at SPLASH and Onward! 2012. We have an introduction and keynote session in the morning followed by the presentation and discussion of workshop papers followed by a breakout session at the end. Table 1 outlines the rough schedule of the format of the workshop.

Time	Activity
0830–0900	Introductions
0900–1000	Key Note Presentation
1000–1030	Morning Break
1030–1200	Presentation of workshop papers
1200–1330	Lunch Break
1330–1500	Presentation of workshop papers
1500–1530	Afternoon Break
1530–1700	Breakout session
1700–1715	Participant Feedback and Organizers Report

Table 1. Workshop Schedule

8. Post-workshop Activities

We hope that our participant's papers, published in the ACM Digital Library, will inspire future researchers. We aim to continue hosting this workshop in subsequent years.

References

[1] `https://sites.google.com/site/workshopplateau/`