

A Processing Primer for Artists

Susan Reiser
UNC Asheville
reiser@unca.edu

Phill Conrad
UC Santa Barbara
pconrad@cs.ucsb.edu

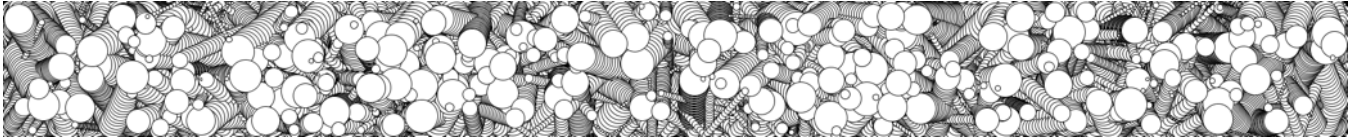


Figure 1: Processing output.

ABSTRACT

Processing is an open source programming language and Integrated Development Environment (IDE) developed by Casey Reas and Ben Fry. This workshop is a hand-on programming primer for artists and designers who are interested in using programming and computational thinking as creative tools.

CCS CONCEPTS

• **Applied computing** → **Media arts**; • **Social and professional topics** → *Computing literacy*; • **Software and its engineering** → Control structures; Data types and structures; Syntax;

KEYWORDS

computer graphics programming, computing in the arts, processing

ACM Reference format:

Susan Reiser and Phill Conrad. 2017. A Processing Primer for Artists. In *Proceedings of SIGGRAPH '17 Studio, Los Angeles, CA, USA, July 30 - August 03, 2017*, 2 pages. <https://doi.org/10.1145/3084863.3107579>

1 OVERVIEW AND BACKGROUND

Susan Reiser and Phill Conrad, both experienced Processing instructors, will introduce computer programming with Processing, a language that was honored with a Golden Nica award at the Arts Electronica 2005 festival. Participants will learn enough programming - see Section 2 - to build a simple animation with user interaction by the end of the one-and-a-half-hour session. Those who wish to use their own laptops instead of the studio desktops should download and install Processing from the processing.org [Processing 2017] website prior to the workshop. Unfortunately, facilitators will not have time to oversee custom installations during the session.

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

SIGGRAPH '17 Studio, July 30 - August 03, 2017, Los Angeles, CA, USA

© 2017 Copyright held by the owner/author(s).

ACM ISBN 978-1-4503-5009-9/17/07.

<https://doi.org/10.1145/3084863.3107579>

The benefits of Processing are numerous. Four important benefits are 1) a simple and elegant interface called the Processing Development Environment (PDE) shown in Figure 1; 2) support for 2D, 3D, and pdf output; 3) an active community of developers who have extended its capabilities with many custom libraries; and 4) it is free. With many languages, programming instruction must follow tedious instruction on how to use the development environment. Not so with Processing. Its interface is intuitive and allows beginning programmers to start programming and producing visual output immediately. It natively supports 2D, 3D and vector graphics; and RGBA and HSBA color models. Standard libraries support video, sound, Arduino, and Raspberry Pi. Custom libraries developed by the Processing community support myriad other features.

2 WORKSHOP OBJECTIVES

- (1) Drawing with code using graphics primitives
- (2) Data types
- (3) Variables
- (4) Conditional expressions
- (5) Loops
- (6) Animation
- (7) User interaction
- (8) Events

3 FUTURE WORK

After the workshop, the facilitators hope that attendees will want to delve deeper into Processing and computer programming.

ACKNOWLEDGEMENTS

This material is partially based upon work supported by the National Science Foundation under grant No. 1323610, Computing in the Arts.

BIOGRAPHIES

Phill Conrad is a faculty member in the Department of Computer Science at UC Santa Barbara, with a joint appointment in the Computing program of the College of Creative Studies. His appointment is as a Lecturer (SOE), a career oriented teaching faculty rank that corresponds to a tenured associate professor. Prior to joining the UCSB faculty in 2008, he chaired the Interactive Media Minor at

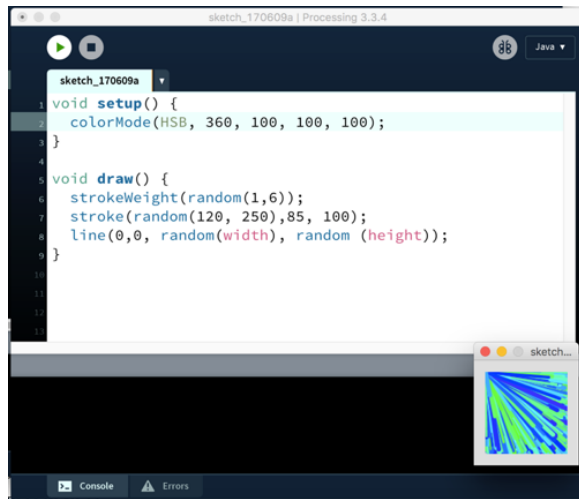


Figure 2: Processing Development environment.

the University of Delaware, a collaboration between the Departments of Art, Communications, Computer Science, and English. At UCSB, he served as co-PI on a NSF grant investigating culturally relevant digital storytelling as a motivating context for broadening participation in computing among underrepresented groups.

Susan Reiser is a Senior Lecturer in the Departments of Computer Science, New Media, and Mechatronics Engineering where her research and art involves tangible computing, data materialization, and fabrication. Over the last 20 years, she's developed or co-developed over 25 new courses at the intersection of technology and the arts - including two Processing courses. Since its inception in 1998, she has been part of the New Media Department where she served for ten years as the program's Associate Director. She also serves as the Associate Dean of Natural Sciences, Co-Director of the SENCER (Science Education for New Civic Engagement and Responsibilities) Center of Innovation South, and is one of the collaborative co-founders of UNC Asheville's STEAM Studio, a 12,000 square foot maker space.

REFERENCES

Processing 2017. Processing.org. <https://processing.org/download/>. (2017).