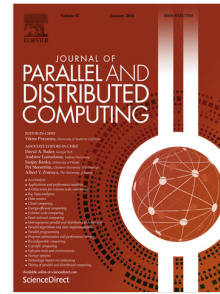


Accepted Manuscript

A visual programming environment for introducing distributed computing to secondary education

Brian Broll, Ákos Lédeczi, Hamid Zare, Dung Nguyen Do, János Sallai, Péter Völgyesi, Miklós Maróti, Lesa Brown, Chris Vanags



PII: S0743-7315(18)30099-6
DOI: <https://doi.org/10.1016/j.jpdc.2018.02.021>
Reference: YJPDC 3838

To appear in: *J. Parallel Distrib. Comput.*

Received date: 22 August 2017
Revised date: 12 February 2018
Accepted date: 26 February 2018

Please cite this article as: B. Broll, Á. Lédeczi, H. Zare, D.N. Do, J. Sallai, P. Völgyesi, M. Maróti, L. Brown, C. Vanags, A visual programming environment for introducing distributed computing to secondary education, *J. Parallel Distrib. Comput.* (2018), <https://doi.org/10.1016/j.jpdc.2018.02.021>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

A Visual Programming Environment for Introducing Distributed Computing to Secondary Education

Brian Broll, Ákos Lédeczi*, Hamid Zare, Dung Nguyen Do, János Sallai, Péter Völgyesi, Miklós Maróti, Lesa Brown, Chris Vanags

Vanderbilt University, Nashville, TN, USA.

Abstract

The paper introduces a visual programming language and corresponding web and cloud-based development environment called NetsBlox. NetsBlox is an extension of Snap! and builds upon its visual formalism as well as its open source code base. NetsBlox adds distributed programming capabilities by introducing two well-known abstractions to block-based programming: message passing and Remote Procedure Calls (RPC). Messages containing data can be exchanged by two or more NetsBlox programs running on different computers connected to the Internet. RPCs are called on a client program and are executed on the NetsBlox server. These two abstractions make it possible to create distributed programs such as multi-player games or client-server applications. We believe that NetsBlox not only teaches basic distributed programming concepts but also provides increased motivation for high-school students to become creators and not just consumers of technology.

Keywords: visual programming, distributed programming, computer science education

*Corresponding author

Email address: akos.ledeczi@vanderbilt.edu (Ákos Lédeczi)

Download English Version:

<https://daneshyari.com/en/article/6874987>

Download Persian Version:

<https://daneshyari.com/article/6874987>

[Daneshyari.com](https://daneshyari.com)