Alice Grows Up: Transitioning from Alice 2 to Alice 3 in Community College Programming Courses

Alice, computing faculty at these community colleges are transforming the way they teach introductory programming, software design and problem-solving skills. Professors William Taylor (Co-PI), Anita Wright and Rose Boiano of Camden County as well as Professor Tebring Daly of Collin County have transitioned from Alice 2 to Alice 3 in teaching their fundamentals of programming course. Professors Don Smith and Eileen Wrigley of Alleghany County also have upgraded and integrated Alice 3 into their programming with Java course. Each of the three community colleges has included students and alumni as teaching assistants and/or peer instructional tutors, providing an extra layer of student support. Preliminary feedback from the second year of the project is promising. When using Alice 3 as an active learning technique, these faculty members have reported improved student enthusiasm, attendance, retention, and perseverance in their programming courses. The ultimate goal is to graduate more students in the discipline of computer science by engaging students early in the creative process of programming through the use Alice 3.

These dedicated professors are also serving as mentors to other community college faculty by hosting summer training seminars, developing teaching materials appropriate for entry-level programming students, and providing support to other faculty who want to incorporate the Alice 3 software into their computing programs. Information about summer 2011 faculty development seminars and available instructional resources appear online at aliceprogramming.net.

As with Alice 2, Alice 3 is a user-friendly 3-D graphical programming IDE that takes advantage of millennial students’ multimedia driven attraction to animated games. However, that is where the similarity ends. Alice 3 is a truly object-oriented implementation that includes a more sophisticated IDE, an extensive gallery of 3-D models including SIMS 2 characters with complex behaviors from the video game giant Electronic Arts.

Further, this new version has the powerful ability to port Alice 3 code directly into the NetBeans IDE through a plug-in. The original Alice 3 program can be viewed, executed, and modified as Java code. This allows students to become skilled at reasoning with fundamental programming constructs before having to tackle the detail-oriented syntax issues of a high-level programming language such as Java or C++. The Alice 3 software is being produced by a talented development team at CMU led by research scientist Dennis Cosgrove and is freely available for download.

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Useful websites
- alice.org and alicedownloads.org
- Alice online community
- Additional 3-D models downloaded for free as well as PC and Mac versions of Alice including Alice 3 beta for Windows XP, Vista and 7
- aliceprogramming.net
- Helpful information and resources for teaching with Alice
- Course calendars, lectures, labs, assignments, exams, solutions, and more
- visualization.sju.edu
- The Center for Visualization at Saint Joseph’s University, Philadelphia, PA
- Archive of past newsletters, listing of current grants, and other helpful information for Alice users.

Elizabeth K. Hawthorne
Computer Science Department
Union County College
Craneford, New Jersey 07016 USA
Hawthorne@ucc.edu

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