Developing an Accessible Introduction to Computer Science Course for the SUNY System: A Progress Report for a SUNY IITG Project

Participants:
Sen Zhang, Mathematics, Computer Science and Statistics, SUNY Oneonta
Andrew Perry, Milne Library, SUNY Oneonta
Nancy Cannon, Milne Library, SUNY Oneonta
Alex Jean-Charles, Secondary Education, SUNY Oneonta
Arthur Hoskey, Computer Systems, School of Business, Farmingdale State College
Cynthia V. Marcello, Science, Technology, and Math Division, SUNY Sullivan
Howard Reed, Business and Information Technology Department, SUNY Delhi
James L. Antonakos, Computer Science SUNY Broome Community College

Aim of the project:
To explore and develop a semi-standardized and accessible introduction to computer science course that can potentially be adopted by multiple SUNY campuses

Current Challenges:
- Lack of standardization in terms of curriculum, especially at the level of the introductory (first taken) computer science courses
- No national standard on gatekeeper CS curricula
- No SUNY standard on gatekeeper CS curricula
- SUNY CS transfer pathway is facing the challenge to decide what the first transferable course (at the 100 level) should be
- Many introductory computer science courses are not accessible to the typical incoming SUNY student; most high school graduates have not taken any computer science courses, as computer science is not a high school graduation requirement in NY State

Our Solution:
- We propose a semi-standardized Introduction to CS course for the SUNY system
- As the largest public higher education system in the country, SUNY has an advantage in exploring a systemic approach to semi-standardize this type of course
- Being semi-standardized balances two needs:
  - Need standards to achieve systemness
  - Need room to be diverse and local
- Being accessible may help address many issues at the root level:
  - The learning needs of today’s students without proper K-12 exposure to CS.
  - The need to facilitate transfers from community college to 4-years

What the Proposed Course is NOT:
- NOT an MS office suite course that trains students to use application programs such as word processors and Internet browsers.
- NOT simply a literacy course
- NOT a programming course
- NOT a CS technology course
- NOT a course mainly for CS majors

Surveys and Interviews:
We consulted computer science instructors throughout NY State through surveys and interviews, and narrowed the project to a manageable scope. Sample results:

- The Distribution of Different Names of Computing Programs

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SUNY Oneonta Grant Office
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Some Observations and Thoughts:
- Comparison shows no real standard with regard to basic courses. Some emphasize concepts, others have more to do with programming.
- Most courses are intended for CS majors. Courses for non-majors tend to be very basic and emphasize office applications.
- Credit hours are inconsistent between campuses. Most are 3 credits but some are 4 credits.
- Open SUNY is already creating the opportunity within SUNY for 100% online courses for foundational Computer Science.
- Create more of a standard based on open-access course materials to fill the universal need for a gateway course that is relevant to all students.

Project webpage: http://employees.oneonta.edu/zhangs/iitg2014/