The Beauty and Joy of Computing

An AP CS: Principles Curriculum

FRABJOUS CS: Framing a Rigorous Approach to Beauty and Joy for Outreach to Underrepresented Students in Computing at Scale
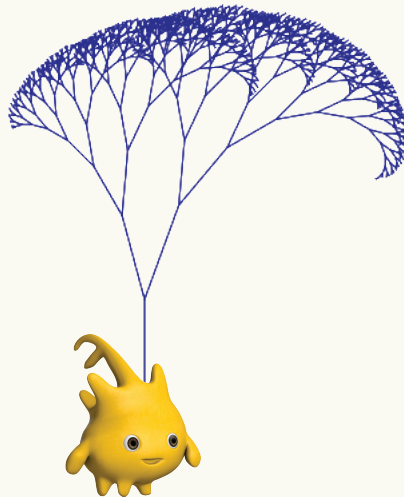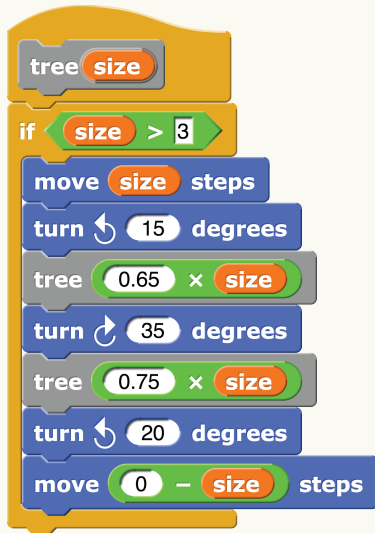
University of Californa, Berkeley
Daniel Garcia, PI
Brian Harvey, Co-PI
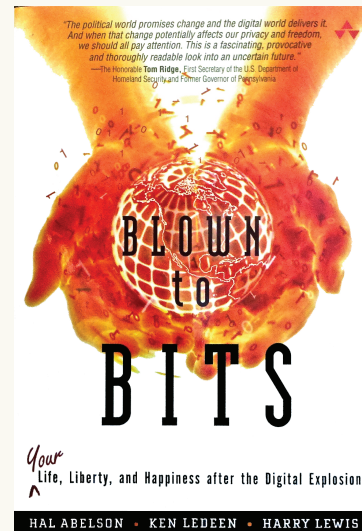
North Carolina State University
Tiffany Barnes, PI

http://bjc.berkeley.edu

- Six-week summer preparation for 100 high school teachers who then teach BJC in their schools: **http://bit.ly/BJC2014**
- Focus on underrepresented students.
- Visual programming language allows technically rigorous course with high student retention.

- Programming in λSnap!


```
tree size
if  size > 3
  move size steps
  turn ↺ 15 degrees
  tree 0.65 × size
  turn ↻ 35 degrees
  tree 0.75 × size
  turn ↺ 20 degrees
  move 0 – size steps
```

Snap! supports recursion, higher order functions, and OOP. Program in the browser; no installation required.
(Inspired by Scratch, from the MIT Media Lab.)

- Social implications and context via

- Topics include abstraction, graphics, applications, programming paradigms, concurrency, algorithms, games, recursion, privacy, copyright, game theory, higher order functions, artificial intelligence, limitations of computing, and the future of computing.

"The political world promises change and the digital world delivers it. And when that change potentially affects our privacy and freedom, we should all pay attention. This is a fascinating, provocative and thoroughly readable look into an uncertain future."
—The Honorable Tom Ridge, First Secretary of the U.S. Department of Homeland Security and Former Governor of Pennsylvania

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