Filling in the Gap: Teaching Novice Computer Science Students How to Solve Problems

Randy M. Kaplan
Department of Computer Science and Information Technology

ABSTRACT

It is a well-documented fact that the first programming course a student will take is usually a make or break moment. Various studies include Kinnunen, (2006) and Lahtinen, et al., (2005) have investigated the difficulties that students have, while other studies attempt to provide solutions to the problem (Barg et al. 2000; Vihavainen et al., 2011). Many reasons for this have been documented and explored including that the cognitive load is overwhelming (Youssoof et al., 2006). The student is called upon to (in parallel) learn a new language (a programming language), use critical thinking and problem solving skills and use the new language to solve problems that will be foreign to them. This study looks at applying Problem-Based Learning methodology that promises to address some of the known problems.