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Teaching Introductory Programming to Computer Science Freshmen

Teresita C Limoanco^{1*}

¹ College of Computer Studies, De La Salle University-Manila 2401 Taft Avenue, Metro Manila 1004 *Corresponding Author: tessie.limoanco@delasalle.ph

Abstract: Compro1 (Introduction to Computer Programming in C Language) and Compro2 (Advanced C Programming) are two crucial subjects that every freshman at the College of Computer Studies (CCS) needs to take. These subjects cover logic formulation and programming skills, which are foundational to all subsequent programming subjects in the BSCS program of the College. When students are presented with a programming problem, it is important that they are able to identify the requirements and formulate the expected computations or processes to solve it. This requires developing a solution and testing this under different scenarios. Most students are able to formulate a solution to a problem, but they often encounter difficulties in expressing this solution as a correct program in a particular programming language. It is a pedagogical challenge for the lecturer to help students to not only comprehend programming principles, but more importantly, to write syntactically and logically correct programs. This paper reports my teaching exploration on these two subjects, specifically the activities I have introduced to help students learn how to program. It presents the teaching approach I used in these subjects in AY2010-11, describing the innovations with learning activities and their eventual implementation in AY2013-14. These efforts are made with the hope and goal of helping students to be competent in creating syntactically and logically correct programs.

Key Words: computer programming; teaching methods; classroom activities