

Architecture of a Preliminary Course on Computational Thinking

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Abstract : An introductory programming course is a major challenge faced in Computing Education. Many of the introductory programming courses fail because student concentrate mainly on writing programs using a programming language rather than involving in problem solving. Computational thinking is a general approach to solve problems. This paper proposes a new preliminary course that aims to develop computational thinking skills in students, which may help them to become good programmers. The proposed course is designed based on the four basic components of computational thinking - abstract thinking, logical thinking, modeling thinking and constructive thinking. In this course, students are engaged in hands-on problem solving activities using a new problem solving model proposed in this paper.

Keywords : computational thinking, computing education, abstraction, constructive thinking, modelling thinking

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