Abstract

Simulators are commonly used in any computer architecture course as primary tools for supporting the teaching and learning activity. We have developed two educational simulator tools to support teaching and learning of the MESI cache coherence protocol and dynamic scheduling using Tomasulo's Algorithm.

We have used these simulators during the spring semester of the academic year 2016 – 2017, in the context of the “Advanced Computer Architecture” course offered by the Informatics department of the Technological Educational Institute (T.E.I.) of Athens.

In this paper we briefly present these simulators and evaluate their impact on the learning process. The results are presented both qualitatively and quantitatively and are strongly indicate that the use of the two simulators can effectively support the learning process and enhance learning.
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Index Terms

Computer Science
System Architecture

Keywords
Tomasulo's algorithm, MESI protocol, Simulator, Computer architecture, Interactive animation.