Android-based Simulator to Support Tomasulo Algorithm Teaching and Learning

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 170
Number 2

Year of Publication: 2017

Authors:
Dimitris Kehagias, V. Douskas-Bertlviser

10.5120/ijca2017914703

Abstract

Tomasulo's algorithm is a dynamic instruction scheduling algorithm that allows out-of-order execution, to minimize “Read-After-Write” (RAW) hazards and by register renaming to reduce “Write-After-Read” (WAR) and “Write-After-Write” (WAW) hazards. This paper describes an Android based simulator that shows how dynamic scheduling is obtained using Tomasulo's Algorithm. The simulator is configurable, while the simulation can be operated in a step by step mode and with animation in order to help students comprehend the concepts of dynamic scheduling anytime, anywhere.

References


Index Terms

Computer Science  Algorithms

Keywords

Tomasulo’s algorithm, Simulator, Computer architecture, Interactive animation.