Android-based Simulator to Support Tomasulo Algorithm Teaching and Learning

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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.