
Abstract

The Tomasulo algorithm is a fundamental part of modern computer architecture, but its complexity makes it difficult for students to understand these concepts using traditional teaching methods. This thesis presents a prototype Tomasulo simulator that uses problem-solving oriented levels and intuitive display elements to enhance students' understanding of the subject.

The simulator was tested in the Computer Architecture course at FAU Erlangen. It was introduced to the students after a paper-based exercise designed to familiarize them with key concepts of the Tomasulo algorithm. After 30 minutes of use, the students were asked to provide feedback on both the prototype and the exercise content.

Student feedback indicated that the simulator was effective in helping them understand the key concepts of the Tomasulo algorithm. However, the feedback also highlighted areas for improvement, including the need for a tutorial, improvements to the user interface, and exercise topics that could be improved by incorporating them into the simulator.