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ANALYSIS OF NISC ARCHITECTURE USING DATA STRUCTURE APPLICATION

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Abstract

It has been observed that the complexities with embedded systems have increased manifold and the design community has been searching a suitable method that can handle such complexities the paper presents the design of target architecture for benchmark application in a C based design flow. The work starts from the standard C Application program implementation and generates customized designs using the NISC (no instruction set computer) toolset. Further, it demonstrates and analyzes the compilation and simulation results of several benchmarks on a number of different available NISC architectures in terms of code size, register, compilation time, etc. The compiled standard C implementation is made to run though benchmarks on a set of generic NISC architectures, which produces a set of results related with (i) insertion sort (ii) bubble sort, etc. based on these outputs, a comparative analysis has been presented to explore different options to select the best set of architecture.

Keywords : ASIP, NISC, HLS, RTL, CISC and RISC