
A Machine to Implement a Generalized FORTH Environment

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ABSTRACT

A microcoded design of a machine to implement a 32-bit FORTH has been simulated. The addressing is segmented so that storage allocation and deallocation is quite general. Garbage collection and compactification of memory are supported. The design of the instruction set is in the spirit of the RISC (Reduced Instruction Set) machines, allowing stack operations and indexed access directly into the stack to produce a frame or register-like environment.

The aim of the project is to produce a fast machine, which while supporting the traditional FORTH environment, will allow more traditional parameter passage and access; it will also support integrated packages of languages and applications.

A slightly higher level implementation of a similar FORTH kernel has been implemented by another group on a VAX and that implementation is available.

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