

The Evolution of RISC Technology at IBM

by John Cocke and V. Markstein

Question 1: What were the advantages (if any) and disadvantages (if any) of each of the changes from the 801 to the improved 801? Did each of these changes make the newer processor more or less RISC-like than its predecessor?

Question 2: What were the advantages (if any) and disadvantages (if any) of each of the changes from the improved 801 to the RS/6000? Did each of these changes make the newer processor more or less RISC-like than its predecessor?

Question 3: Software technology had a large impact on the 801 project. Describe both the role of software simulation of the 801 and the 801's compiler in the 801 project.

Question 4: What might Cocke and Markstein's experience with using the 801 PL.8 compiler to generate code for the IBM/370 imply about compiling for today's x86 processors (recall that both IBM/370 and x86 are CISC instruction sets).

Note: You can now get a copy of P&H: Computer Architecture: A quantitative Approach, 3rd Ed. On my ftp site at <ftp://172.16.16.66/public/E-books/>