Lisp machines and the analysis of their high-level language computer architecture

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***Abstract*—The high-level capabilities that Lisp affords programmers makes it very useful in certain applications, but also causes it to run slow on most computers, which were designed for different types of executions. To account for the incompatibility between Lisp and the hardware it runs on, computers called Lisp Machines have been designed specifically to run Lisp programs by designing processor hardware to accommodate the language features Lisp possesses. Achieving greater efficiency in running Lisp was accomplished using various methods, both in the hardware and in how data would be represented in the software. Hardware changes mostly consisted of changes to the circuitry in the processor itself as well as the number and purpose of processors in the machine. Software changes mostly corresponded to the representation of lists, the main data structure in Lisp. Lisp machines were largely deprecated in the 1990s, giving way to traditional computers which were fast enough to run Lisp with reasonable speed, but remain a popular subject for study and discussion amongst those who are familiar with Lisp.**

Keywords*—*Lisp, Lisp Machine, computer engineering, vintage computing, computer organization.

I. Introduction

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II. Conclusion

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Appendix A
Proof of the First Zonklar Equation

Some text for the appendix.

Acknowledgment

The authors would like to thank...

References

[1] H. Kopka and P. W. Daly, *A Guide to LaTeX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

John Doe Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.