

PORTING THE UCSD p-SYSTEM TO UNIX

by

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A MASTER'S REPORT

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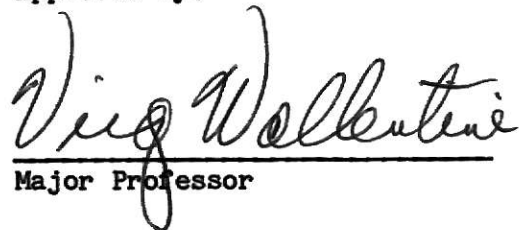
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**THIS BOOK  
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THE PAGE.**

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## ACKNOWLEDGMENTS

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## INTRODUCTION

## 1.1 HISTORY.

The UCSD P-SYSTEM was created by a group of undergraduate and graduate students at the University of California at San Diego (UCSD) under the direction of Kenneth Bowles in late 1974. The computer used by students up until that time was a large and very unfriendly machine running a machine-specific implementation of ALGOL in a batch environment. Access to the machine was therefore limited by the lack of keypunch equipment and the slow turnaround time of the overworked machine.

Dr. Bowles, who was teaching the introductory programming class, wanted to institute changes in the way the programming class was taught. The class would be self-paced to allow for the large number of students and to allow for the different work and study habits of the students. The class would use Pascal instead of ALGOL and microcomputers because of their low cost and ability to allow hands-on interactive experience with the computer. The system was first implemented on PDP 11/10's with floppy disk drives and VT-50 terminals. The students purchased their own floppy disks to hold the system and the programs being worked on by the students.

Even though this was a novel and interesting approach to teaching computing, the university found there was a large commercial interest in a system which could be easily transported to different systems. The system allowed companies to develop a package or program which could run on many systems without changes. The SofTech Microsystems company was formed to support, maintain, license and continue developing UCSD Pascal

and the System that supports it.

## 1.2 MOTIVATION FOR PROJECT.

The purpose of this project was to install the UCSD P-SYSTEM operating system under the UNIX operating system running on Kansas State University's Perkin Elmer minicomputers. One reason for this was to allow the use of an "industrial standard" version of Pascal, UCSD Pascal, by the students of Kansas State University. Another important reason was to provide a method for allowing students owning their own equipment to do work at home and still have it compatible with a language used by the university for instruction. The initial attempt was to bring up the full UCSD P-SYSTEM operating system (the UCSD P-SYSTEM is described in Chapter 2) . A latter project could be the removing of the UCSD Pascal compiler from the P-SYSTEM and installing only that part under the UNIX operating system. A third project could be a code generator which would take the P-CODE produced by the UCSD Pascal compiler and convert the P-CODE into native code to run on the PERKIN-ELMER minicomputers under the UNIX operating system. A fourth project could be to install the System on the bare Perkin-Elmer (Interdata) 16-bit machines owned (but not used because of lack of a good operating system) by the department of Computer Science.

## 1.3 ORGANIZATION OF THE REPORT

Chapter 1 of this report is a brief history of the UCSD P-SYSTEM and the purpose of this project. Chapter 2 concerns the UCSD P-SYSTEM operating system and some of its commands. Chapter 3 of this report is an explanation of the structure of the P-MACHINE used to run the UCSD