

JULY/AUGUST 1972

INSTRUMENTATION (p. 17). “The application of [computer system instrumentation and performance measurement] techniques ... is essential to the understanding of computer system behavior. It is a necessary step towards establishing computer system design as a science. Acceptance of this notion will lead to future systems that include hardware and/or software elements which directly facilitate system instrumentation.”

MINICOMPUTER (p. 58). “Honeywell Inc. has introduced a family of functional minicomputer systems known as System 700. The eight-member System 700 family is designed to expand a user’s data processing system into a communications-oriented information processing network.”

“The 716 central processor, with a cycle time of 775 nanoseconds for a 16-bit word, operates at more than twice the speed of the Model 316. Main memory of the 716, which is program and peripheral compatible with Series 16 central processors, ranges from 8,192 words to 32,768 words.”

“Minimum systems begin at about \$1,000 per month on a rental contract or can be purchased for about \$30,000, depending on the system and optional equipment selected.”

MICROPROCESSOR (p. 60). “Intel Corporation has introduced a second computer on a chip, an 8-bit central processor designed to handle large volumes of data. Type 8008 CPU combines with Intel RAMs, ROMs and shift registers to create MCS-8 computer systems capable of directly addressing and retrieving as many as 16,000 8-bit bytes stored in the memory devices.

“The CPU is a P-channel silicon-gate MOS circuit containing an 8-bit parallel adder, six 8-bit data registers, an 8-bit accumulator, two 8-bit temporary registers, four flag bits and eight 14-bit address registers

PREP SCHOOL (p. 62). “Using an IBM System/3 Model 6, the Creighton Preparatory School in Omaha, Nebraska, founded in 1878 and conducted by the Jesuits, is training young men in college oriented educational programs. The new ideas include some innovative administrative shortcuts as well as classroom instruction in computer usage at the high school level.”

“Father Robert Worman, who teaches the two computer classes to 27 students, stated that “The keyboard input and the RPG Language of the System/3 are ideal for teaching at the high school level. Young men at this age have a facile memory and pick up the computer language just like another spoken language.”

TOXICOLOGY (p. 63). “Representatives of the Toxicology Information Program of the National Library of Medicine, National Institute of Health, U.S. Department of Health, Education and Welfare, and Informatics, Inc. have per-

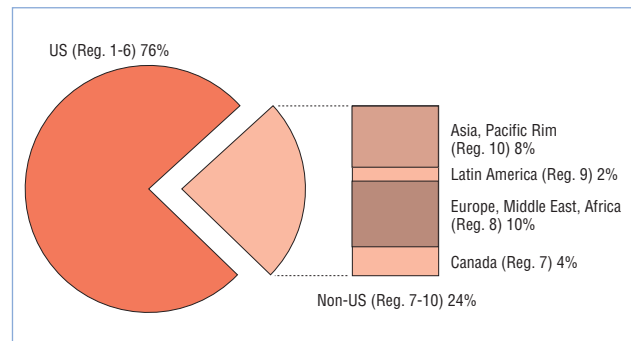
formed on-line demonstrations of TOXICON, a service sponsored by the Toxicology Information Program and operated by Informatics.

“Utilizing a Cathode Ray Tube (CRT) terminal, commands were issued via a keyboard to a computer in Washington D.C. to search files of citations and abstracts of published toxicology and pharmacology studies of drugs, pesticides, and environmental pollutants and to provide information in the specific areas. The response from the computer took a matter of seconds.

“According to Dr. Walter F. Bauer, president of Informatics, TOXICON is an important example of how on-line communications systems available to the public and tied to computerized data collections of governmental agencies can operate to the public’s benefit.”

JULY 1988

THE COMPUTER SOCIETY (p. 4). “While our transnational tradition has long been recognized, new trends are emerging that make it more evident. Principal among these is that the annual rate of growth of non-US society members has begun to exceed the US membership growth rate. As shown in the accompanying chart, approximately one quarter of all the society’s members (all grades) are residents of IEEE Regions 7-10. The biggest international segments are Region 8 (Europe, Middle East, and Africa) and Region 10 (Asia and the Pacific Rim).”



HARDWARE VERIFICATION (p. 18). “Industry, abandoning its initial skepticism, is becoming more and more interested in formal verification, since it can guarantee correct designs and shave costly development time. Some major European manufacturers plan to include in their private CAD systems some of the formal verification tools currently under development.

“If formal verification keeps in touch with the latest developments in VLSI, so computer-aided design does not lag behind design, both fields will benefit and contribute significantly to the advancement of computer science.”

OPEN SOFTWARE (p. 62). “Seven leading computer companies have established an international foundation to provide a completely open software environment designed to

IEEE

distributed systems

ONLINE

Expert-authored articles and resources

IEEE Distributed Systems

Online brings you peer-reviewed features, tutorials, and expert-moderated pages covering a growing spectrum of important topics, including

- **Grid Computing**
- **Mobile and Wireless**
- **Distributed Agents**
- **Security**
- **Middleware**
- **and more!**

IEEE Distributed Systems

Online supplements the coverage in *IEEE Internet Computing* and *IEEE Pervasive Computing*. Each monthly issue includes magazine content and issue addenda such as interviews and tutorial examples.

<http://dsonline.computer.org>

To receive regular updates, email
dsonline@computer.org

32 & 16 Years Ago

facilitate customer use of computers and software from many vendors.

“The Open Software Foundation will develop a software environment, including application interfaces, advanced system extensions, and a new operating system using the specifications for X/Open and Portable Operating System Interface for Computer Environments (Posix) as the starting point. The Posix standard, developed by the Computer Society’s Technical Committee on Operating Systems and closely related to the Unix system, specifies how software should be written to run on computers from different vendors.”

SEMICONDUCTOR MANUFACTURING (p. 71). “Sematech has designated five university Centers of Excellence to support the semiconductor manufacturing research consortium’s objective of restoring US leadership in semiconductor manufacturing technology.”

“The centers were selected by a team of 36 leading technical experts in the semiconductor industry. The experts based their review of proposals and selection of centers on the quality of the research program offered, its relevance to Sematech’s needs, and the nature of the program resources that would be made available at each center.”

RISC MICROPROCESSORS (p. 86). “Motorola has announced the 88000 family, a new product line of reduced-instruction-set-computer microprocessors. The family includes the 88100 RISC Microprocessor and 88200 Cache/Memory Management Unit.

“According to the company, the 88000 series architecture couples pipelined floating-point and integer units on a single chip. It also incorporates a technique called scoreboarding, which reportedly allows the processor to perform as many as 11 operations concurrently.

“The 88100 integrates an integer and two floating-point units. It supports six special function units. The 88100 contains 165,000 transistors.

32-BIT ARCHITECTURE (p. 87). “Intel has announced a 32-bit microcomputer architecture that integrates reduced-instruction-set-computer design techniques. According to the company, the core 80960 32-bit architecture has parallelism and modular features for increased performance levels and development of market-specific, embedded control processors.”

“On-chip functions of the 80960KB include 32×32 -bit registers, a floating-point unit, a 512-byte instruction cache, a stack frame cache, and a 32-bit multiplexed burst bus. The chip also has an interrupt controller with 256 interrupt vectors and 32 levels of interrupt priority.”

Editor: Neville Holmes; neville.holmes@utas.edu.au.