

ONLINE

December
1968

DIGITAL EQUIPMENT CORPORATION

Kallis, Kat, & Komputer



Advertising's Steve Kallis, gently coaxes a six-month-old tiger in front of a LAB-8 system. Pictures of the computer and the feline, who came

from Boston's Franklin Park Zoo, will be used in a special campaign to promote DEC's signal averaging system.

Software Meets Hardware Boom

Imagine a single piece of perforated paper tape about 150 miles long stretching from Maynard to the top of Mt. Washington in New Hampshire. That's one way of looking at the output of DEC's Programming Department, which each month sends out the equivalent of 150 miles of program tapes to DEC customers the world over. Most of these programs, which are also supplied on DECtape and mag-

netic tape, represent an increasingly significant DEC product: system software.

The Programming Department's growth rate exceeds even that of the company it serves. The department was formed about two and one half years ago when 20 programmers from various product lines were consolidated. Now, it

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300th PDP-9

The PDP-9, sometimes called the largest general purpose computer in the low cost field, has reached a new milestone: the 300th delivery.

Since it was introduced in late summer, 1966, the \$35,000 PDP-9 has proven to be an extremely versatile machine with a wide range of applications in physics, biomedicine, process control, chemical instrumentation, display processing and data communications.

It has proven invaluable in colleges and secondary schools, in a variety of industries and in this nation's space efforts.

Its foreground/background capability enables users to perform two functions simultaneously, and with only minor modification, it is seeing service as a multi-user timesharing machine.

Massachusetts General Hospital has 20 terminals interfaced to a PDP-9 to perform a number of functions.

The PDP-9/L met its first delivery schedule on time recently.

New Promotion Policy Adopted

A formal procedure by which qualified technicians can be reclassified as full-fledged engineers has been adopted by Digital Equipment Corporation.

"Every company talks about its 'promote from within' policy. With this plan, DEC has provided a definite vehicle by which a qualified man can become a professional engineer, even if he doesn't have a degree," said Graydon Thayer, Manager, Professional Development. continued on page 2

Robin Hoods Score High

The avid interest in deer-hunting in this area has witnessed a revival of bow and arrow hunting. At least 15 DEC employees belong to an informal club devoted to this sport, according to Fabrication Shopman Dennis McCaffrey. Dennis had yet to chalk up a deer when we spoke with him, but was very optimistic. "This weekend" was his prediction.

Deer-hunting with bows and arrows presents some complications not encountered by the man who takes to the woods armed with rifle. One obvious handicap faced by the bow and arrow hunter is the relatively short range of his weapon. "You really have to stalk the animal", said Dennis. "I would say that you have to be at least twice as close with a bow and arrow as you do with a rifle".

Testimony from other hunters supports this estimate. Fabrication Cabinet Assembly Group Leader Bob Burg and Carpentry Group Leader George Silva, whose arrows felled deer this season, place the maximum effective range of their weapon at 50 yards. Twenty to

New Promotion Policy Adopted

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sional Personnel. "It demonstrates that Digital bases promotions on ability, not on a piece of paper."

Under the new policy, an Engineering Review Board examines the qualifications of a candidate who is proposed for reclassification to engineer. The requirements for reclassification extend beyond technical knowledge. Creativity; leadership; ability to communicate; an inquiring, growing mind, and maturity rank high when the review board examines a candidate.

For the individual who wishes to progress professionally DEC now provides the three vital ingredients: opportunity, tuition assistance, and a formal engineering review procedure. But they're not served on a platter. It's up to the individual to take advantage of them.

DEC considers the credentials of individuals who pass the engineering review as meeting the same standards as those applied to a degreed engineer.

Managers and technicians have responded enthusiastically to the reclassification procedure because it clarifies matters of vital concern to them. In the past, managers who wanted electronic technicians to be considered for promotion were uncertain of the procedure or the company standards. Technicians with exceptional ability and the initiative to acquire an engineer's knowledge were unsure of the requirements they had to fulfill.

The Board members are Don White, Chairman, Graydon Thayer, Secretary, Allan Kotok, Joe St. Amour, Roger Cudy, Gerry Butler, Dick Best.

thirty yards is a more common range for successful deer-killing arrows, yet, their supervisor, Fabrication Shop Foreman John Trebendis, bagged his deer with a rifle from over 100 yards.

Because the hunters must be this close to their quarry, they employ a num-

ber of devices to smother human odors which deer's sensitive noses can detect. Some smear their clothes with a liquid derived from musk; others fill their hunting suits with apples and onions for a week before the hunt. Many refrain from using after-shave lotion, and hair tonic.



Vice-President Win Hindle places the first telephone call through DEC's new switchboard.



MAY I HAVE YOUR TOLL BILLING NUMBER, SIR? Nick LoRusso, Office Services Manager, listens to Mary Hogan (right) as Mary Ellen Burke

(middle) and Betty Williams operate the new switchboard at the Maynard offices. The switchboard is part of the extensive renovations now underway.

ANNIVERSARIES

10 YEARS

Robert Hughes
George Lord

7 YEARS

Roger Gagne
Nick Mazzaresse
Richard Riley
James Scanlan
Myrtle Whitney
Dorothy Wyskoczka

6 YEARS

Ethel Iannarelli
Allan Titcomb

5 YEARS

Betty J. Butler

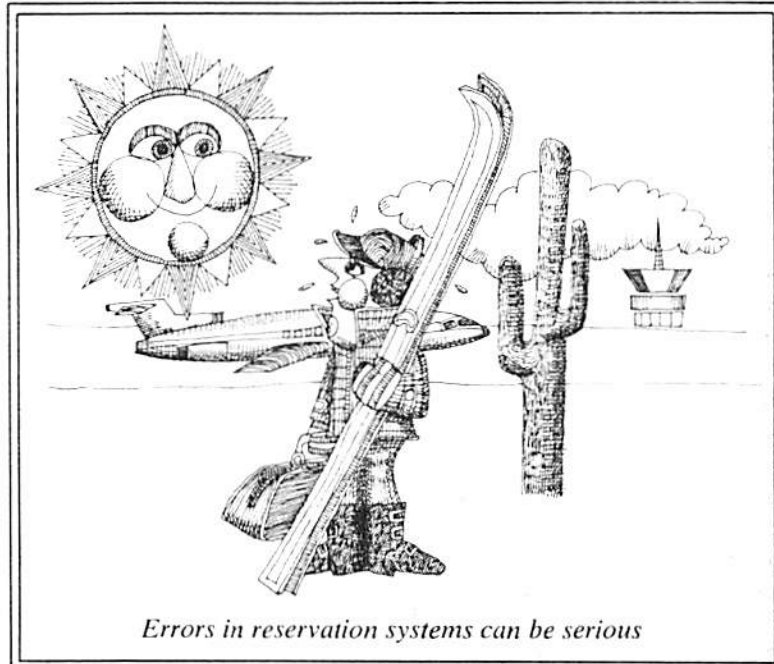
4 YEARS

Alan Blackington
Mark Bush
Robert Ciaraldi
Michael Ford
Lee Fryer
Edward Hogan
Walter Mason
Richard Parks
Gilbert Slaw
Robert Whitton

3 YEARS

Yves Batteur
Rachel Blair
David J. Carter
Beatrice Demers
Ronald Denaro
Lawrence M. Fahey
Norman Gallant
Henry Hebert
Frank A. Moller

Booklet Gains Wide Popularity



This is one of several cartoon-style illustrations used to enliven DEC's new booklet, "Introduction to Data Communications."

An informative booklet outlining the basics of data communications has joined the growing library of DEC-produced literature.

"Introduction to Data Communications" was authored jointly by Donald Murphy, Data Communications Marketing Manager, and Steve Kallis, Advertising Department.

Lively cartoon style illustrations pro-

vide a welcome diversion from the book's technical content.

"This project started a few years ago," states Steve, "when DEC produced a shorter version of the book for people in data communications. But, then we discovered it was being used as a classroom text, so we decided to pretty it up."

"It has become so popular," he added, "that the first batch practically evaporated." □

DEC Assists Univ. of P.R.

Ceremonies for the presentation of DEC equipment to the University of Puerto Rico were held there November 29 with University Chancellor Jose E. Arraras officiating.

DEC President Olsen donated a PDP-8 and a Computer Lab on the behalf of the company. While making the presentation to Arraras and Engineering College Dean Elmer Olivieri, Olsen mentioned that an important factor in DEC's locating its new plant in San German, P.R. was that town's proximity to the University in Mayaguez. Pedro Sola, Head of Science and

Technology Section, Commonwealth Economic Development Administration, noted that "the equipment presented to the University by Mr. Olsen is an example of the fruitful kind of cooperation that has existed in Puerto Rico between private enterprise and government since the beginning of our Operation Bootstrap program.

"It helps immeasurably when the private sector aids in the task of training our young people to meet the challenges of the fast changing, technological 20th century," Sola continued. □

Excellent Response To Employee Referral Program

What started as a low-key appeal to refer friends or acquaintances for jobs at DEC has developed into somewhat of an avalanche.

Since the Employee Referral Program

was launched last July, employees have referred hundreds of applicants to the company.

By mid-November, DEC had hired over 170 referrals, a phenomenal record by any yardstick.

Whether you have referred anyone or not, don't hesitate to do so. DEC's continuing growth creates new openings almost as fast as existing ones are filled. We still need referrals - and lots of them.



"There's a lot of opportunity to advance because it's a young, growing company."

Frances Gaviglia DECUS



"It's hard to describe exactly why I like it here. It's just a nice atmosphere."

Jeanne Donovan Programming



"Mainly because the people are so nice--everyone is very friendly."

Ann Davis Program Library



"It's a relaxed atmosphere; people leave you alone to do your job."

Beverly Estabrook LINC-8 Mktg.



"People are very helpful to new employees."

Jeanne Donovan Purchasing



REFER
A
FRIEND

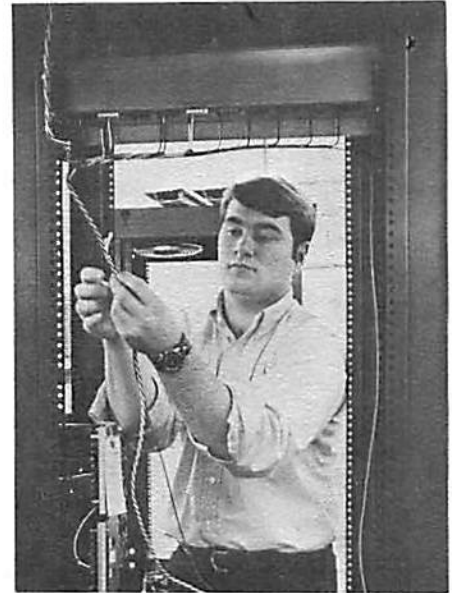




"Good opportunity for learning and advancement."

Gary Moon Computer Production

REFER A FRIEND



"I came here as a trainee, and everyone was really patient with me as I learned."

Richard Duval Computer Production



"All the people are very friendly"

Elizabeth Barr Program Library



"Benefit programs such as insurance, holidays, etc."

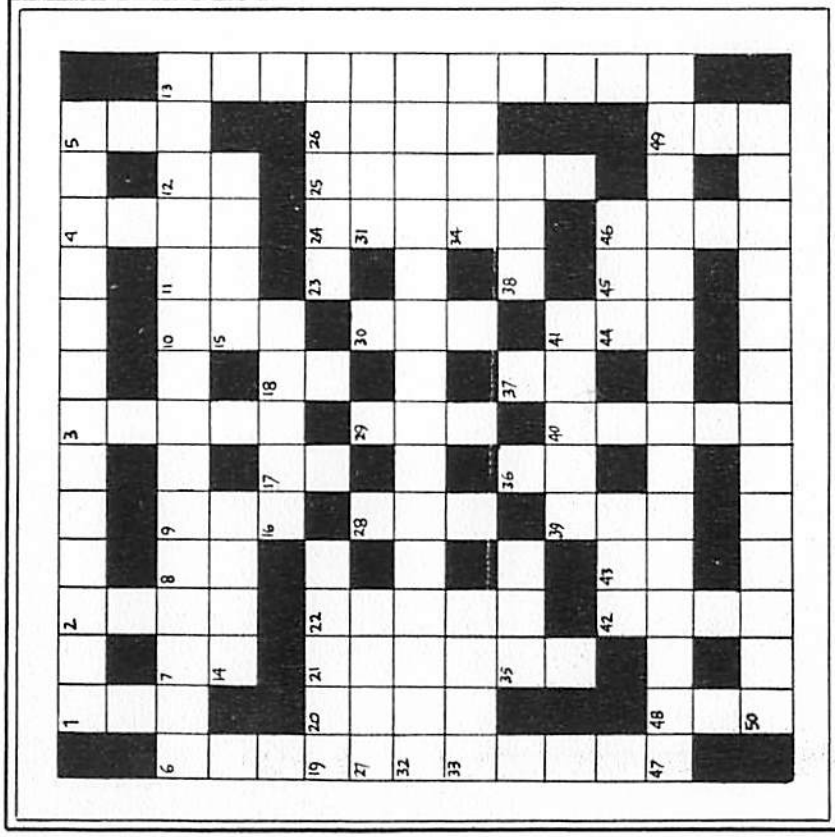
Richard Beland Computer Production

"Computers are exciting to me, and I like helping to build them."

Gerald Fournier Computer Production



Mental Tussle Attracts Applicants



This crossword puzzle appeared as part of a DEC recruiting advertisement in a recent issue of Communications of the ACM, a technical magazine. Although, the ad was directed at programmers, many of the clues are based on general knowledge and vocabulary.

Try your skill!

solution on next page

ACROSS

1. At Digital, programmers are _____, and we treat them as such.
 6. The Programming Department at Digital has — (3 words — 3, 3, 9) — so our programmers have immediate access to the equipment they need.
 14. Usually valuable material taken from the ground (pl.).
 15. One position for a switch.
 16. Your move to Digital would qualify as one of these; also a "happening."
 19. Path of an earth satellite.
 23. You might do this on weekends on one of Massachusetts' many well-stocked lakes.
 27. A multi-colored star of New England's fall foliage show.
 31. A method of man-to-machine communication which has not yet been developed.
 32. How Digital is often described by business reporters (4, 4, 7).
 33. Something we think Digital has on the competition.
 34. One of New England's most beautiful animals.
 35. He is (Latin).
 38. Synonym (abbrev.).
 39. What you do with a programmed switch once you've used it.
 42. Respectful title.
 44. Slang for a match when searching a tape file.
 47. Besides your own work at Digital you'll be involved in — (3, 4, 2, 6) — since we're too small and growing too fast to squeeze everyone into a narrow specialty.
 50. The nature of programming work at Digital; also, an adjective which could be used to describe our Programmers.
- DOWN
1. A type of stand.
 2. Your nose knows this.
 3. A familiar programming instruction.
 4. Before (prefix).

5. New international currency issued through the International Monetary Fund (abbrev.).
6. Something absorbing which you'll experience in your work at Digital.
7. Conjunctive word.
8. Two or more people, including you.
9. Three of the four major points on the compass (abbrev.).
10. Cooking utensil.
11. The way you should go at Digital.
12. Half a printer's measure. (Digital computers are used in printing.)
13. What you work in at Digital — not large teams (5, 6).
17. Type of meter you'll find on most tape recorders (abbrev.).
18. A word we like to avoid at Digital.
20. A grass with a jointed, hollow stem.
21. One way to ship 14 across — but not computers.
22. One option on a decision block in a flow chart (2, 3).
24. One who makes a lot of unpleasant noise.
25. The Far East.
26. What you bowl on.
28. Kind of tape input to computer (abbrev.).
29. Consumed.
30. Cathode ray tube (abbrev.).
36. That is.
37. Person who designs our computers — with the help of programmers (abbrev.).
39. Once taught to the tune of a hickory stick.
40. Fan or participant, there's a lot of this around Boston.
41. Poetic version of although.
42. What you do with servos when you've run out of tape.
43. Input/Output.
45. Neuter pronoun.
46. This and _____.
48. Verb describing possession.
49. Man's nickname. Also, something to be used sparingly.

How 'PDP' Originated

Did you ever wonder about the origin of "PDP"?

Ever since the introduction of the PDP-1, DEC has adhered to the "PDP" designation for all company-designed computers. Our systems have been so well received that in some circles we are better known as the "PDP Company."

This designation stands for Programmed Data Processor. It was selected to overcome a popular notion prevalent 10 years ago that all computers had to be huge, hopelessly complex and extremely expensive.

The PDP-1 was priced at approximately \$120,000 while other computers in those days cost in excess of \$1 million.

By calling our product a Programmed Data Processor instead of a "computer", it was hoped that we could avoid scaring customers away.

Recently, reminiscing about the PDP-1, President Ken Olsen stated "We really had no competition then. Nobody could touch us, yet it was hard to get people to believe that we really were selling a computer for only \$120,000."

Dallas Office Opens

The growth of DEC's markets in the South has resulted in the opening of a sales and service office in Dallas, Texas.

The Southern region, which was served by just two offices a year ago, (Houston, Texas and Huntsville, Alabama) now has five. The others are located in Cocoa, Florida and Atlanta, Georgia.

DEC's domestic sales and services activities are now handled through 26 field offices in 19 states.

LOCAL Use of 1st T-S-8

"Project LOCAL (Laboratory Program for Computer-Assisted Learning) plans to use its systems to foster better student understanding of mathematics and science," said Robert N. Haven, project director. The students already use several single-user DEC computers; even sixth graders have become proficient with them.

Schools taking part in the project are located in Westwood, Lexington, Natick, Wellesley and Needham. They received the single-user com-

puters in September.

The first system was delivered to Project LOCAL, a group of five Boston area schools united to explore the use of computers as an aid in teaching mathematics and science.

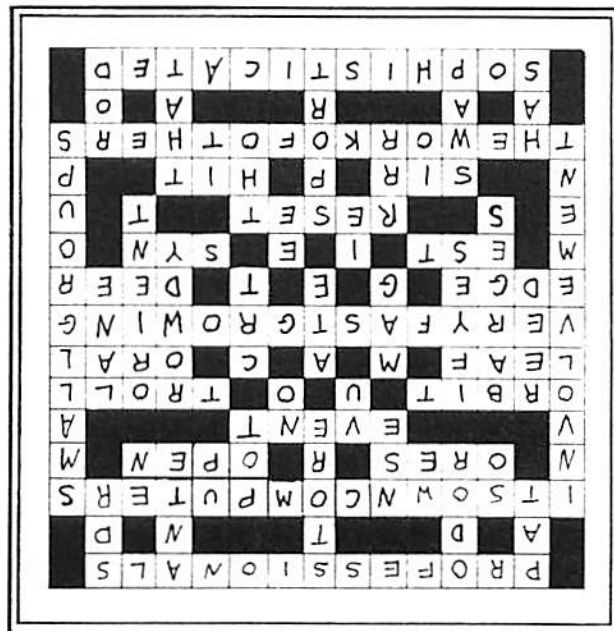
The system, the first of two destined for Project LOCAL, is DEC's smallest and is equipped with just three terminals; most systems will have 8 or 16 terminals.



CLASSROOM COMPUTER - Edward Hall (standing), Headmaster at St. Mark's School in Southboro, studies the work of one of his students on a PDP-8/1. The student, Ed Taft, is one of the school's most avid users

of the DEC computer which St. Mark's recently bought for classroom instructions. Seated at left is Richard Rader, mathematics and physics professor at the school.

crossword puzzle solution



Software Meets Hardware's Boom

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numbers approximately 150. All of the computers located at the Maynard Main St. entrance "belong" to this department.

These four factors caused the rapid increase in programming personnel:

- When the Company entered the computer market, it sold exclusively to highly sophisticated customers, such as scientific researchers. DEC's pioneering of low-cost, small computers, however, later attracted customers who looked to DEC for software support.

- As DEC moved into medium to large computer sales, software became so complex that even customers with their own software staffs required programming assistance.

- DEC had to provide programming services to maintain its status as a leader in the computer industry.

- Programming's significant contributions to the company substantiated the value of augmenting the department. An example is its revolutionary time-sharing work, which placed DEC two years ahead of most of the computer industry in this field. When DEC delivered the first PDP-6 in 1964, it boasted the first timesharing system developed by a computer manufacturer.

When asked to give some specific examples of why he is proud of the department's work, Manager Larry Portner pointed out, "Our software systems for the PDP-9 are particularly significant because of the tremendous flexibility available on a comparatively small scale computer. The user might monitor a physics experiment in real-time with a foreground program, and during periods when that program isn't active, the system monitor will execute low-priority background programs.

"DEC recently installed a PDP-10 at a service bureau on the west coast which rents terminal time. Written into the contract were unusually



Programming Dept.'s Founding Fathers are shown working on a PDP-6 nearly four years ago. Left to right are Larry Portner, Joan Fries, and Bill Segal.

stringent software tests. The system passed testing only six weeks after delivery. Both our PDP-9 and PDP-10 systems offer a degree of device independence unique in the industry.

Our new time-sharing system for the PDP-8/1, called TSS/8, will allow up to eight users to share the computer system. This system is widely being used in colleges and high schools."

A complete description of Programming's accomplishments could fill this writing several times over. At any one time, this department is liable to be engaged in as many as 50 major projects. DEC programming also implements special applications such as the new automated clinical laboratory system for hospitals, which uses the LINC-8. Tying in with newly developed clinical test machines, this new system will speed up the handling of patients' records in our busy hospitals. The PDP-8 disk-operating system ranks as one of Programming's major accomplishments. This entailed converting the computer's input system from a reliance on paper tape and manual operation of console switches to one which accepts information from a teletypewriter.

The DEC user's group, DECUS, is assisted by another department section which organizes DECUS meet-

ings and publishes the periodical DECUScope. The Software Writing Group writes programmer's reference manuals, library write-ups and brochures.

The department's varied programming responsibilities fall into four types: Diagnostic Programming, used to quickly find "bugs" in the hardware both on the production lines and in field, is very familiar to DEC's hardware engineers. These programs help the engineer in testing to locate flaws in hardware.

- Systems Programming is developed to accompany DEC hardware when it is sold. This software enables the customer to program his computer for his specific needs.

- Applications Programming includes software designed to accomplish a specific task.

- Internal Development Programming, such as the automated drafting system, is used by DEC departments.

The emphasis on programming and its importance has grown dramatically and no one expects this trend to relax in the foreseeable future. As long as DEC engineers develop new hardware, the company will need Larry Portner's men to program it.