PERSPECTIVE

an interpretive review of significant developments

Dartmouth's Time-Sharing System Captures College, Creates Confidence

John G. Kemeny, computer genius, Ivy League college president, mathematician, philosopher, and football nut, sat down at the teletypewriter console in his office. Dartmouth College was in the last stages of its capital fund drive. The trustees were coming the next week. Kemeny needed some projections: How well was the drive going? What would Dartmouth's financial position be in five years?

Kemeny punched away at the teletype writer and, moments later, he had the answers to his questions. "I just don't see how an American executive can get by without a computer," Kemeny told a recent visitor in describing how he uses the Dartmouth Time-Sharing System.

It is perhaps easy to understand Kemeny's use and enthusiasm for the system, since it was all his idea. But what is not quite so easy to understand is that nine out of 10 of Dartmouth's 3,000-plus undergraduates use the Dartmouth Time-Sharing System (DTSS). Furthermore, Kemeny has a sneaking suspicion that at least some of the one in 10 students

Thomas E. Kurtz

who do not show up in the user statistical tables learn to use the time-sharing system on the sly. Kemeny claims that Dartmouth students far and away have more experience with computers than students from any other college anywhere. And this in spite of the fact that Dartmouth is primarily a liberal arts college and not a technical institution.

"From the start in 1963, Tom Kurtz and I thought that instead of training computer scientists, computers would make a fine learning tool for students at a liberal arts college," says Kemeny. "Instead of worrying about 100 students who would get computer jobs, we worried about thousands who would be able to use computers." Dr. Kemeny founded the DTSS along with Dr. Thomas E. Kurtz, who is professor of mathematics and director of Dartmouth's Kiewit Computation Center. In addition Kemeny and Kurtz are the co-authors of BASIC.

Slow beginning

It all started in 1959 when Dartmouth obtained a Bendix LGP-30 computer with just 4K of memory and a cycle time in the millisecond range. Kemeny and Kurtz quickly discovered that Dartmouth undergraduates could be extremely adept at programming. "In that way, that little computer had a great impact on us," recalls Kemeny.

Once the decision was made to build a time-sharing system, the whole project moved quickly. The hardware — a GE-235, a GE Datanet-30 communications computer, and a disc file — arrived in early 1964. Undergraduate programmers were writing programs for the equipment even before it was installed. In the fall of 1964, the system was available for general use by Dartmouth undergraduates and a terminal was installed for high school student use at nearby Hanover High.

"We trained more than 85% of our freshman class that year," says Kemeny. "The time-sharing system was an absolute instant success with the students."

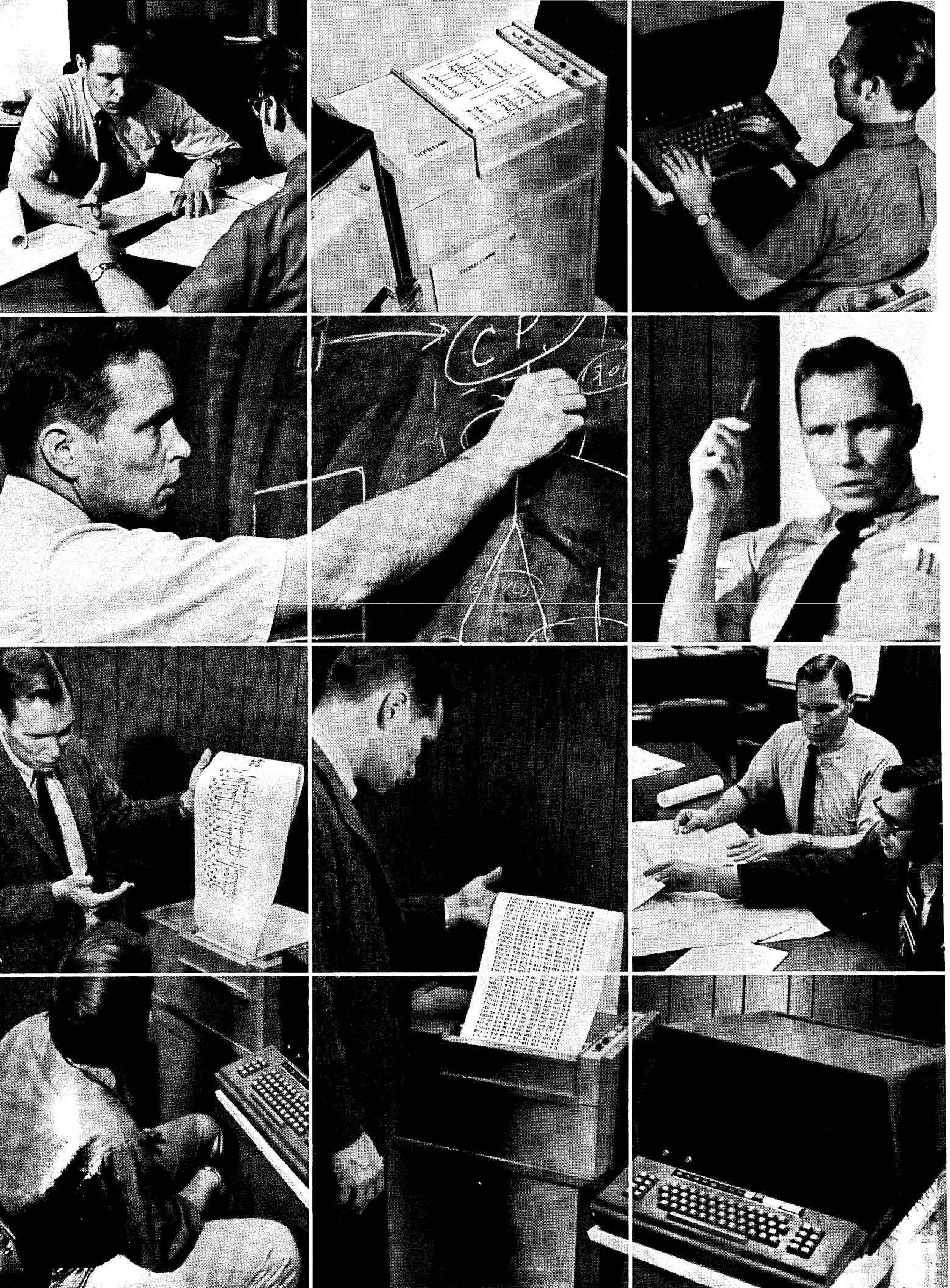
However, the system was not exactly an instant success with the Dartmouth faculty. Kemeny recalls that one "distinguished humanist" at Dartmouth delivered a lecture attacking the "machine age" when the computer system was installed. Other faculty members resisted the computer installation, but even the staunchest holdouts among the faculty finally had to learn how to use the DTSS in self-defense, Kemeny says. Now, the computer installation — housed in the large and modern Kiewit Computation Center — is used

J. G. Kemeny

heavily by the faculty.

The center's hardware is now configured around a Honeywell 635 (formerly a GE 635), and the equipment has handled more that 19,000 jobs in a single day. More than 100 undergraduate courses at Dartmouth make significant use of computing and the Computation Center. Students at Dartmouth's graduate business school, the Amos Tuck School, make the most extensive use of computers.

Kemeny, who before he became president of Dartmouth taught both mathematics and philosophy, likes to tell one interesting anecdote about the system. He is an intense football fan, and in 1965 when Dartmouth won the Lambert trophy — for being voted the best football team in the East — Kemeny commemorated the achievement by writing a football program on the DTSS. The game, which has since been further sophisticated, has been a great favorite of students and alumni, and stories abound about famous visitors to Dartmouth who are lost for hours in the Computation Center playing football. But there is an



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