Farewell, Kiewit

by Joshua Stabiner '03

Whether a student will ever use a computing machine or not, his life is likely to be affected by such machines, and hence, he should know something about their capabilities and limitations. In this sense, contact with electronic brains is as essential as learning to use the library.

-Kemeny & Kurtz, 1962

In 1962, mathematicians John Kemeny and Thomas Kurtz used the preceding words to express the necessity for the construction of a computational center for Dartmouth College. In 1966, the construction of the Kiewit computation center was completed through generous donations from Peter '22 and Evelyn Kiewit. The $650,000 structure was dedicated on December 2 during one of the many computation conventions at Dartmouth. "The building includes six administrative offices, six graduate student offices, a seminar room, conference room, reference library, student assistants work room, public teletype area, a lounge, and a card equipment room. The basement houses the communications equipment, air conditioning equipment, and provides 5,700 square feet of area for future expansion." (Courtesy of Kiewit Computation Center).

When Kemeny and Kurtz were trying to persuade the college to build the center, they did not have to base their arguments on possible future situations. Dartmouth had been one of the top computational research institutions in the United States. Dartmouth's strong history in the field was most likely the major influence behind the development of the computation center. Dartmouth computer history dates back to 1887 when Thayer graduate Harry Bates, calss of 1879, designed a machine that combined electrical signals with holes punched in cards. These "punchcards" would be used to write the very first computer programs. Bates went on to incorporate the Tabulating Machine Company which, in 1924, changed its name to "IBM."

It wasn't until 1940 when Dartmouth made it's next large footprint in the computational timeline. The prototype for the very first electronic computer (located in New York) was connected to a teletype console in McNutt hall. This demonstration, lead by Bell Labs mathematician George Stibitz, was the "first remote access to a digital computer using standard phone lines." Not only was this the predecessor to modern modem technology, Stibitz's computer is the first to ever do arithmetic in a binary

fashion, making it the ancestor to most modern day electronic computers.

Between 1940 and 1956 knowledge of computers had increased dramatically. In 1956 Dartmouth mathematician John McCarthy coined the phrase "Artificial Intelligence" sparking a huge reaction from the computer science community. Dartmouth holds a summer conference for AI discussion which has laid the foundation for AI research.

It wasn't long before the Dartmouth computer "virus" caught on around the nation. In 1963, Kemeny and Kurtz developed a new programing language Beginners All-purpose Symbolic Instruction Code (BASIC). This prototype BASIC compiler earned the college a $500,000 grant in 1964 which was used to further develop the language as well as program the Dartmouth Time-Sharing System (DTSS). Later that same year DTSS had been completed and began servicing three teletypes. Soon this number was increased to eleven. Later that same year, the DTSS would service seven secondary schools acting as the predecessor to the Dartmouth Educational Network which would eventually serve Forty-Two colleges and twenty secondary schools in addition to several research institutions across the country. In 1966, General Electric changed the name from DTSS to Mark I and used it to build the largest commercial time sharing system.

By this time the need for a computation center was evident and Kiewit was soon completed. The strong computational history of Dartmouth did not end with the construction of Kiewit, rather it expanded to include a larger, faster campus wide network and the rising popularity of personal computers. The DTSS/Mark I systems were expanded and are still in use today, and Dartmouth has begun new research projects such as the expansion of the wireless network and the use of Internet applications.

No matter what happens in the future, Dartmouth will always claim a large piece of computer science history to be its own. The 1966 completion of Kiewit marked the official college recognition of the necessity for computers. "The newest status symbol in this isolated university town, best known for the success or at least the roughness of its football team, is the possession of a personal computer console — something on which to work in the evenings and something on which the children can do their homework." (*Nature*, London, 10/8/66). ∎

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