Databases and systems to manage data are so common that they are rarely a topic of conversation or contemplation; they are simply a part of the underlying infrastructure of business, government, other institutions, and more broadly, our everyday lives. From using a bank machine, calling a friend on a cell phone, or booking travel to checking a stock quote, conducting a Google search, or buying a book from Amazon, most people in the developed (and increasingly the developing) world encounter databases countless times a day. Prior to computers, of course, there were technologies for information storage and tools to aid retrieval. But the advent and growing memory and processing capabilities of digital computers, coupled with many important developments in software, have rapidly accelerated possibilities for the collection of data, models for structuring data, and modes of accessing data. In the era of the World Wide Web, databases have truly become ubiquitous—opening countless possibilities, as well as further extending security and privacy concerns (that initially grew alongside the US government’s use of vast computer databases in the 1960s).

Although a small number of historical studies address some aspects of database history, including historian Martin Campbell-Kelly’s insightful examination of the emergence of the database management systems (DBMS) segment of the software industry,1 far more research is needed. This special issue of the Annals on the history of DBMSs does much to expand our understanding of this pervasive technology.

Historian Thomas Haigh, in this issue’s opening article, begins by examining the prehistory of DBMSs in administrative data processing in the 1950s, covering such topics as user group Share’s 9PAC and Surge. He then offers analysis on System Development Corporation’s conception of the database, discusses several pioneering products, and provides an overview of the critical work of Codasyl’s Data Base Task Force.

Next, Tim Bergin collaborates with Haigh on an article exploring the early history of DBMSs in the 1970s. Among the key early DBMS packages analyzed are IBM’s Information Management System (IMS) and Data Language/1 (DL/1), Cincom’s Total, Cullinane’s Integrated Database Management System (IDMS), and Software AG’s Adabas.

The issue is rounded out by a series of interesting and important pioneer accounts by early figures in database and DBMS fields: Charles Bachman, Robert Brueck, Judith Kruntorad, William McGee, John Norris Maguire, Thomas Nies, Robert Patrick, and Orrin Stevens Jr. The list is a virtual who’s who in the early development of these path-breaking software technologies.

Codirectors of the Software Industry Special Interest Group at the Computer History Museum (CHM; http://www.computerhistory.org), Burton Grad and Luanne Johnson have been putting together workshops on software history, bringing together leading pioneers and professional historians, for more than a decade. These important events have yielded fresh insights and, equally important, scores of new data (session transcripts, oral histories conducted by professional historians, etc.) for future historical analysis. This special issue is an outgrowth of one of their pioneer workshops on DBMSs and is guest edited by Grad and former Annals EIC Tim Bergin.

While this issue represents a major leap forward in advancing understanding and resources for the history of databases and DBMS, these articles will hopefully spur continuing historical analysis. Fortunately, databases and DBMSs are now among the better-documented topics in software history, in terms of publicly available archival material. In addition to the resources created by the CHM’s Software Industry SIG (http://www.computerhistory.org/groups/sisig/) and other important resources at CHM, there is an excellent career oral history with Charles Bachman (conducted by Thomas Haigh) on the ACM History Committee site (http://history.acm.org/) as well as substantial archival resources (including The Charles W. Bachman Papers, Gordon Everest Monographs of Database Development, and the ACM Records) and oral histories at the Charles Babbage Institute (http://www.cbi.umn.edu).

Reference

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