everything was invented in the US and nothing happened elsewhere. It is true that this book has an almost exclusively American perspective on the history of workstations, the only major exception being a discussion of early work at the UK National Physical Laboratory in the chapter on networking. On the other hand it must be admitted that the self-congratulatory American attitude is much more justified in the workstation field than in other computing fields. While American laboratories and ARPA were inventing the future of interactive computing, most Europeans tinkered with mathematical or internal aspects of computers. Some European contributions might have been mentioned, though, such as the work in Switzerland on, e.g., the five-button "rat" (Nievergelt) and the Lilith workstation for Modula programming (Wirth).

Besides the original papers from the conference, the book also contains reprints of the following important early papers:

- Vannevar Bush: **As We May Think**, 1945

- J.C.R. Licklider: **Man–Computer Symbiosis**, 1960

- Alan Kay and Adele Goldberg: **Personal Dynamic Media**, 1977

These reprinted papers make the book an even more valuable resource, as they can be quite hard to get otherwise. I know, since I originally had to pester librarians at three different universities and research centers to get my copies: Now the ACM Press has done the work for you.

As a final comment we note that this book is billed as the "first" volume in the ACM Press History Series. Actually, that honor ought to belong to the *History of Programming Languages* edited by Richard L. Wexelblat, which was published by Academic Press in 1981 as part of the ACM monograph series. This is by the way an excellent volume which

covers several languages connected with interactive systems such as Lisp, JOSS, Basic, and Simula.

To conclude, this book is highly readable and well illustrated. The chapters cover most of the important historical developments with the possible exception of the more commercial events in the workstation business. It is recommended to anybody wanting to get an idea of where all our current computational goodies have come from.

READINGS IN HUMAN–COMPUTER INTERACTION: A MULTIDISCIPLINARY APPROACH

Ronald M. Baecker & William A.S. Buxton (Eds.) Morgan Kaufmann Publishers, Inc., 1987.

Reviewed by: Maxine S. Cohen Department of Computer Science State University of New York (SUNY) at Binghamton Binghamton, NY 13901

This book is an extensive collection of papers on the Human Computer Interface. This review will not attempt to discuss each paper in the text, suffice it to say the classical human factors issues are raised and key references and researchers in the field are included. This book will be useful to programmers, systems designers and psychologists. The book stresses, emphasizes and demonstrates the need for effective interface design to be a multidisciplinary process.

The book grew out of a need for the authors/editors to find an appropriate text for teaching Human Computer Interaction (HCI). As they and other researchers have discovered, many good papers appear in conference proceedings, technical reports and other less accessible sources, difficult to obtain by many of the practitioners or students in the field. This book can serve as a source book and is best used as such. There is no

central bibliography, but there are bibliographies with the selected articles and there are additional readings referred to at the end of the authors/editors' written chapter summaries.

The text emphasizes the development and refinement of the human computer interface drawing from diverse fields such as graphic and industrial design, cognition and group processing, system design and interactive technologies. It also includes other issues such as the social consequences of computing and what office automation does to the worker.

The volume length is approximately 730 pages. It includes an author index with over 1400 entries and a relatively detailed subject index. Fifty nine papers are included with a critical "notes and review" section by the authors/editors before each of the fourteen chapters.

Organization of the book is as follows: there are three major parts. Part I deals with the context of human computer interaction, this includes articles on the historical and intellectual perspective, the socio/political environment and the physical environment. Part II deals with the user and the usage of interactive computer systems. The various channels of interaction – visual, haptic and audio are discussed along with cognition, modeling and human information processing. Part III covers the design and implementation of interactive computer systems. This includes design principles and methodologies, interaction styles and techniques including direct manipulation, programming techniques and tools, and enhancing system usability. Interspersed at various locations in the text are four case studies: "The Design of a Voice Messaging System," "The Psychology of Computer Programming," "Text Editors and Word Processors," and "The Star, the Lisa and the Macintosh."

At the end is a chapter devoted to research frontiers and unsolved problems. The authors/editors have also included a short guide to further reading which spells out the classical HCI societies and organizations, the national conferences and the journals and some classical book references not noted elsewhere. There is also a reader evaluation and feedback form.

Overall, it is an eclectic piece of work that ties together the multidisciplinary nature of the field effectively. It is not a tome one would read cover to cover. It does serve several purposes. It offers the person new to the HCI field an overview and introduction to the broad areas that encompass the field and a guide to key references including a thorough well researched exposure to the field's current status. For the active researcher in the field it reiterates familiar research and work and challenges the reader to understand the multidisciplinary nature of HCI. Many of the papers and book excerpts have been presented and published before but a compilation of research in one volume, comprehensive and extensive is needed and critical as the field continues to grow and mature.

This text can also serve another purpose. Someone teaching a human factors or HCI course, can use this book as an appropriate text. This book can be used in one of two ways. This book could be chosen as a starting point with additional readings selected from the references to mirror the primary focus of the course. A second approach is to use this book supplemented with a more general human factors book. Used this way, this book will give the specifics while the general book would give the broad overview to the field. Either way there is ample material in the text for discussion.

In conclusion, this reviewer felt this book is a significant volume in the history of human computer interaction. The classical names

and researchers are included. Obviously, some articles are more readable and better written than others. The authors/editors supplemental material rounds out and ties together nicely the set of papers and presents additional readings. Most anyone in the field will find this text useful, unless they have already collected a substantial amount of HCI research material. It is true that many of the articles have already been published but it does pull information from many sources and includes all facets of the HCI world. This reviewers'primary concern is that new research is occurring everyday and this book will need supplements or updates to keep it current for a state of the art researcher.

New Journals & Books

HCI ABSTRACTS

In cooperation with the Scottish HCI Centre of Glasgow, Scotland, an affiliate of the Turing Institute, Ergosyst Associates announces the launch of a new, quarterly journal that comes after nearly two years of planning by the Ergosyst/ Report Store Staff. The first issue will appear in March, 1989.

Each issue will contain about 1,000 abstracts selected from the HCI Centre's Database by **HCI Abstracts** Editor Terry Mayes. Coverage will include high-quality, English-language literature reporting on work in all fields with relevance to HCI. Authors are encouraged to submit documents for abstracting to: The Scottish HCI Centre, George House, 36 North Hanover Street, Glasgow G1 2AD, Scotland, U.K., Attention: Dr. J. T. Mayes.

Rates: US $250 per year ($275 if mailing address is outside N. America). Send orders to: HCI Abstracts, Ergosyst Associates, Inc., 910 Massachusetts St., Suite 303, Lawrence, Kansas 66044, Attention: Susan Bailey (913) 842-7334.

HYPERMEDIA

A new international journal edited by Patricia Baird, Dept. of Information Science, University of Strathclyde, Glasgow, U.K., covering the following key themes: the conceptual basis for hypertext systems; cognitive aspects; design strategies; knowledge representation; link dynamics; authoring; navigation and browsing; testing and evaluation; user interfaces; tools for hypermedia; hypertext and expert systems; applications in education and training; information management; publishing, etc.

Published three times a year for £45/US$85 to: Taylor Graham, 500 Chesham House, 150 Regent Street, London, W1R 5FA, U.K.

INTERACTING WITH COMPUTERS: THE INTERDISCIPLINARY JOURNAL OF HUMAN–COMPUTER INTERACTION

Published by Butterworths on behalf of the British Computer Society Human–Computer Interaction Specialist Group, **Interacting with Computers**, under the General Editorship of Dr. Dan Diaper (Liverpool Polytechnic, U.K.), will act as a forum for cross-disciplinary divisions in both industry and research by presenting fully refereed papers on HCI topics including modeling users and users' requirements, user interfaces, the design process, systems and dialogue design, organizational and social issues, empirical evaluations, training and education, intelligent systems, and emerging technologies.

Interacting with Computers is published three times a year, beginning March 1989, at a subscription price of £92.00 UK sent to Jenny Hayes, Butterworth Scientific Ltd., P.O. Box 63, Guildford, Surrey GU2 5BH, UK.