

# Contents of Volume 25, 1986

## Number One

|                                                                                                                            |     |
|----------------------------------------------------------------------------------------------------------------------------|-----|
| The IBM 3090 system: An overview<br><i>S. G. Tucker</i>                                                                    | 4   |
| IBM 3090 performance: A balanced system approach<br><i>Y. Singh, G. M. King, and J. W. Anderson</i>                        | 20  |
| Engineering and scientific processing on the IBM 3090<br><i>D. H. Gibson, D. W. Rain, and H. F. Walsh</i>                  | 36  |
| The IBM System/370 vector architecture<br><i>W. Buchholz</i>                                                               | 51  |
| Vector system performance of the IBM 3090<br><i>R. S. Clark and T. L. Wilson</i>                                           | 63  |
| The System Usability Process for Network Management Products<br><i>K. D. Gottschalk</i>                                    | 83  |
| Network management software usability test design and implementation<br><i>L. C. Percival and S. K. Johnson</i>            | 92  |
| Improving availability of software subsystems through on-line error detection<br><i>L. Koved and G. Waldbaum</i>           | 105 |
| Workstations and mainframe computers working together<br><i>J. K. Kravitz, D. Lieber, F. H. Robbins, and J. M. Palermo</i> | 116 |

## Number Two

|                                                                                                                                                                                                                                        |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Introduction to IBM's knowledge-systems products<br><i>A. J. Symonds</i>                                                                                                                                                               | 134 |
| Knowledge-based systems in the commercial environment<br><i>E. D. Hodil, C. W. Butler, and G. L. Richardson</i>                                                                                                                        | 147 |
| YES/MVS and the automation of operations for large computer complexes<br><i>K. R. Milliken, A. V. Cruise, R. L. Ennis, A. J. Finkel, J. L. Hellerstein, D. J. Loeb, D. A. Klein, M. J. Masullo, H. M. Van Woerkom, and N. B. Waite</i> | 159 |
| The genesis of a knowledge-based expert system<br><i>J. A. Voelker and G. B. Ratica</i>                                                                                                                                                | 181 |

|                                                            |     |
|------------------------------------------------------------|-----|
| Prolog for applications programming<br><i>W. G. Wilson</i> | 190 |
|------------------------------------------------------------|-----|

|                                                                                                                                                      |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| The numeric representation of knowledge and logic—Two artificial intelligence applications in medical education<br><i>W. D. Hagamen and M. Gardy</i> | 207 |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

|                                                                                                                                                                      |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| The Portable Inference Engine: Fitting significant expertise into small systems<br><i>N. A. Burns, T. J. Ashford, C. T. Iwaskiw, R. P. Starbird, and R. L. Flagg</i> | 236 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

|                                                                                 |     |
|---------------------------------------------------------------------------------|-----|
| Computer processing of dates outside the twentieth century<br><i>B. G. Ohms</i> | 244 |
|---------------------------------------------------------------------------------|-----|

## Numbers Three and Four

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| Systems architecture in transition—An overview<br><i>H. Lorin</i> | 256 |
|-------------------------------------------------------------------|-----|

|                                                                                                  |     |
|--------------------------------------------------------------------------------------------------|-----|
| Impact of memory systems on computer architecture and system organization<br><i>R. E. Matick</i> | 274 |
|--------------------------------------------------------------------------------------------------|-----|

|                                                                                   |     |
|-----------------------------------------------------------------------------------|-----|
| Computing as a tool for human augmentation<br><i>W. J. Doherty and W. G. Pope</i> | 306 |
|-----------------------------------------------------------------------------------|-----|

|                                                                                          |     |
|------------------------------------------------------------------------------------------|-----|
| IBM small-system architecture and design—Past, present, and future<br><i>G. G. Henry</i> | 321 |
|------------------------------------------------------------------------------------------|-----|

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| Software engineering: An emerging discipline<br><i>R. Goldberg</i> | 334 |
|--------------------------------------------------------------------|-----|

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| Tools for building advanced user interfaces<br><i>J. L. Bennett</i> | 354 |
|---------------------------------------------------------------------|-----|

|                                                            |     |
|------------------------------------------------------------|-----|
| Open Systems Interconnection<br><i>J. R. Aschenbrenner</i> | 369 |
|------------------------------------------------------------|-----|

|                                                                          |     |
|--------------------------------------------------------------------------|-----|
| An advanced voice/data telephone switching system<br><i>J. M. Kasson</i> | 380 |
|--------------------------------------------------------------------------|-----|

|                                                                                                                    |     |
|--------------------------------------------------------------------------------------------------------------------|-----|
| The evolution of printers and displays<br><i>A. F. Mayadas, R. C. Durbeck, W. D. Hinsberg, and J. M. McCrossin</i> | 399 |
|--------------------------------------------------------------------------------------------------------------------|-----|