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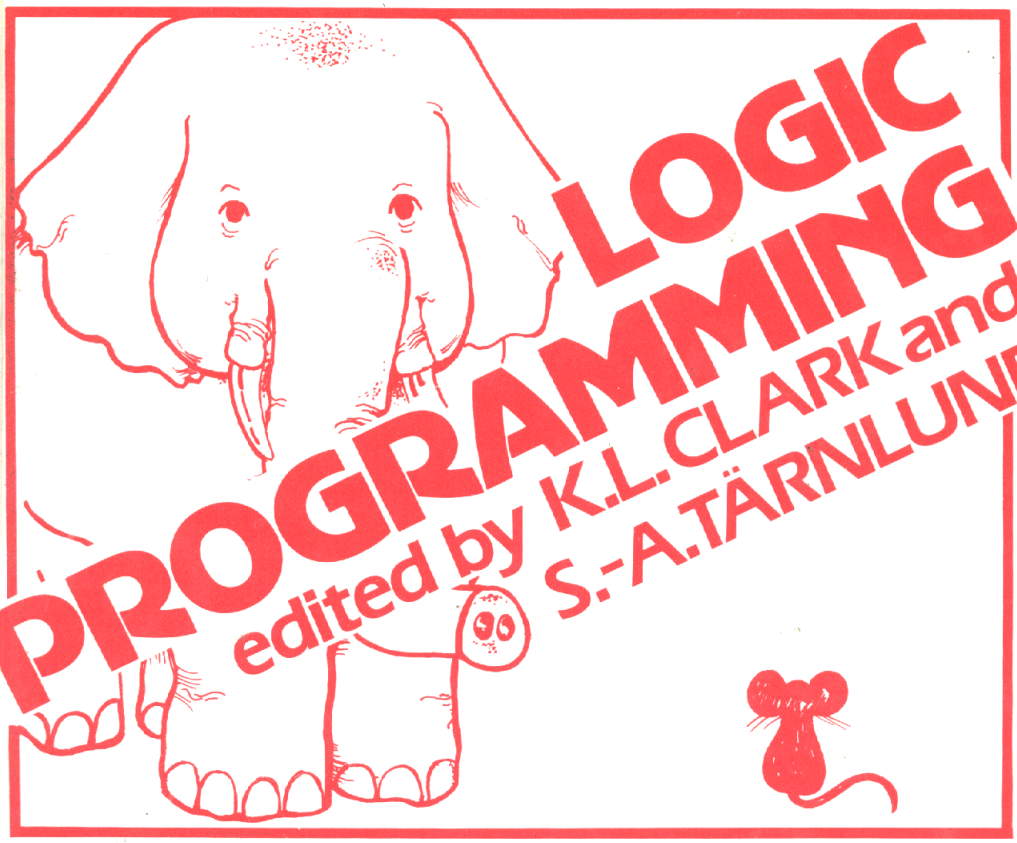

LOGIC PROGRAMMING

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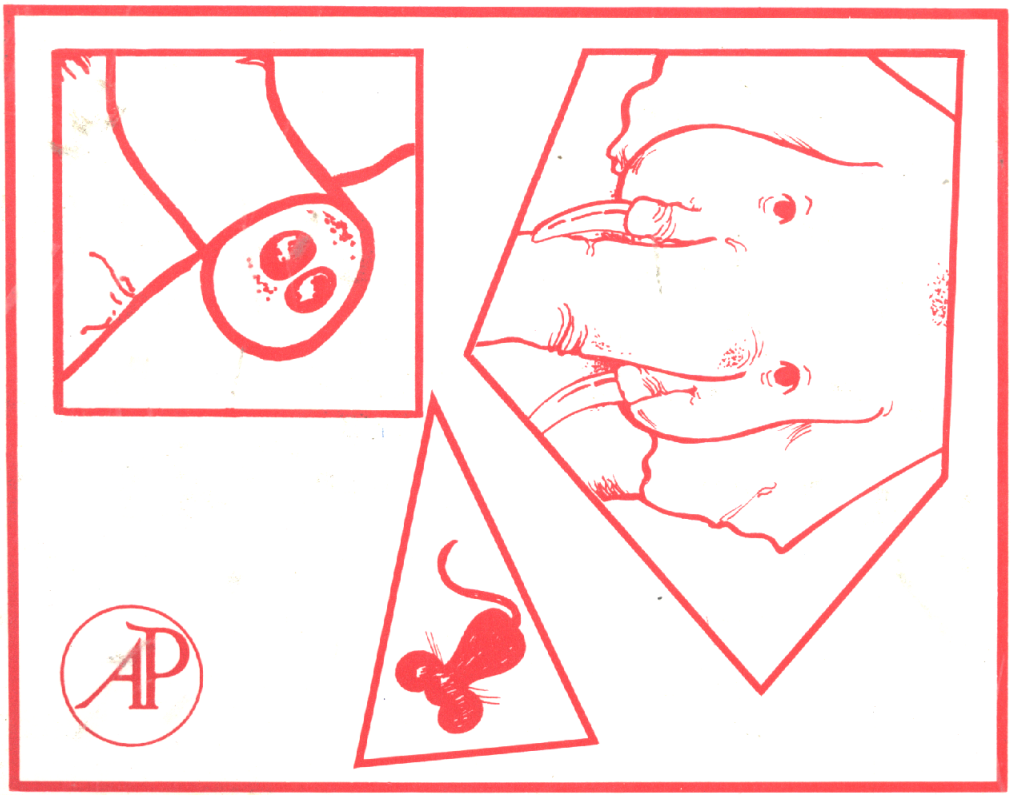

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A.P.I.C. Studies in Data Processing
No. 16

LOGIC PROGRAMMING

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ACADEMIC PRESS, INC.
(Harcourt Brace Jovanovich, Publishers)
London Orlando San Diego New York
Toronto Montreal Sydney Tokyo

ACADEMIC PRESS INC. (LONDON) LTD
24/28 Oval Road
London NW1

United States Edition published by
ACADEMIC PRESS, INC.
Orlando, Florida 32887

British Library Cataloguing in Publication Data
Logic Programming.—(A.P.I.C. studies in data processing; No. 16)
1. Electronic digital computers—Programming
2. Logic, Symbolic and mathematical
I. Clark, K. L. II. Tärnlund, S.-A.
III. Series
001.64'2'015113 QA76.6

ISBN 0-12-175520-7

LCCCN 82-71009

PRINTED IN THE UNITED STATES OF AMERICA

85 86 87 88 9 8 7 6 5

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PREFACE

This collection of papers is intended to give an introduction to the relatively new research area of logic programming. The key premise of logic programming is that computation is controlled inference. This view of computation is proving exceedingly fruitful, as we believe the papers in this volume demonstrate. It leads naturally to the idea that we should design computers as inference machines, an idea that the Japanese have taken as the basis for the design of their fifth generation machines.

The stimulus to produce the book was the first International Workshop on Logic Programming held in Debrecen, Hungary in the summer of 1980. The forty or so presentations, from many different countries, demonstrated the extent of current research. Thereafter, the demand for the informally produced proceedings of the workshop (Tärnlund, 1980), which composed draft papers and abstracts, convinced us that the time was ripe for the publication of a collection of papers that would serve as an introduction to current research in logic programming. We invited everyone who gave a presentation at Debrecen, and others whom we knew were active in logic programming, to submit a paper for possible inclusion in the collection. Of the twenty papers that we selected, thirteen had their origins in the Debrecen workshop. The rest were either specially written for the book or are revised or rewritten versions of papers that have only been privately circulated. One paper, that by Colmerauer on Natural Language, is a specially rewritten English version of a paper that was previously published in French.

We should like to thank the referees: K. Bowen, M. Bruynooghe, A. Colmerauer, M.H. van Emden, H. Gallaire, R.A. Kowalski, L.M. Pereira, J.A. Robinson, P. Roussel, S. Sickel, P.Szeredi for helping us to select the papers included in the book. In all we considered about 40 papers, each of which was refereed by at least two people. Of course, final responsibility for the selection rests with us, the editors.

We should also like to thank M. Brunell and B. Hansson whose assistance in the production of the camera ready copy is much appreciated.

Finally, very special thanks are due to Anneli Holmsten. She did all the formatting. She also patiently tolerated many revisions of the text and changes in the format that involved much extra work.

The book was produced using the text formatters Vided and Videdp developed in Sweden by J. Palme.

January 1982
The Editors

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