Lecture Notes in Computer Science

Edited by G. Goos and J. Hartmanis

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Program Construction

International Summer School

Edited by F. L. Bauer and M. Broy

Springer-Verlag
Berlin Heidelberg New York 1979

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AMS Subject Classifications (1970): 68-02, 68A05
CR Subject Classifications (1974): 4.12, 4.20, 4.22, 4.30, 4.31, 4.32, 4.34
5.24

ISBN 3-540-09251-X Springer-Verlag Berlin Heidelberg New York
ISBN 0-387-09251-X Springer-Verlag New York Heidelberg Berlin

Library of Congress Cataloging in Publication Data. Main entry under title: Program construction, International Summer School. (Lecture notes in computer science ; 69) "Sponsored by the NATO Scientific Affairs Division." Bibliography: p. Includes index. 1. Electronic digital computers--Programming--Addresses, essays, lectures. I. Bauer, Friedrich Ludwig, 1924- II. Broy, M., 1949- III. North Atlantic Treaty Organization. Division of Scientific Affairs. IV. Series. QA76.6.P75117 001.6'42 79-13704

Printed in Germany

Printing and binding: Beltz Offsetdruck, Hemsbach/Bergstr.
2141/3140-54321

PREFACE

In a series of Summer Schools at Marktoberdorf, problems of programming methods and techniques have been dealt with. This fifth undertaking has the general theme of Program Construction. Constructing reliable software at calculable risks is the main concern of Software Engineering. Verification methods have drastically influenced the scene. Only correct programs can be verified, however. Analytic verification techniques have been developed recently into a method of joint construction of program and proof. This more synthetic approach in full consequence leads to general methods for Program Development by Successive Transformations. Both techniques have relative merits in particular situations; a general comparison seems to be difficult, although the transformation approach may be more promising. Moreover, each one method may be viewed as a border case of the other one.

More important than this technical competition is the general observation made at this Summer School as well as at the previous ones: Any reasonable effort in programing needs human thinking more than anything else. The Thinking Programmer knows about the Interplay between Invention and Formal Techniques. Mastering complexity is his aim, and while he needs powerful tools to achieve this, his best assets are the wisdom of knowing his limits.

F. L. Bauer

The International Summer School took place from July 26 to August 6, 1978, in Marktoberdorf. This Summer School was organized under the auspices of the Technical University Munich, and was sponsored by the NATO Scientific Affairs Division under the 1978 Advanced Study Institutes Programme. Partial support for this conference was provided by the European Research Office, the National Science Foundation and the Bund der Freunde der Technischen Universität München.

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