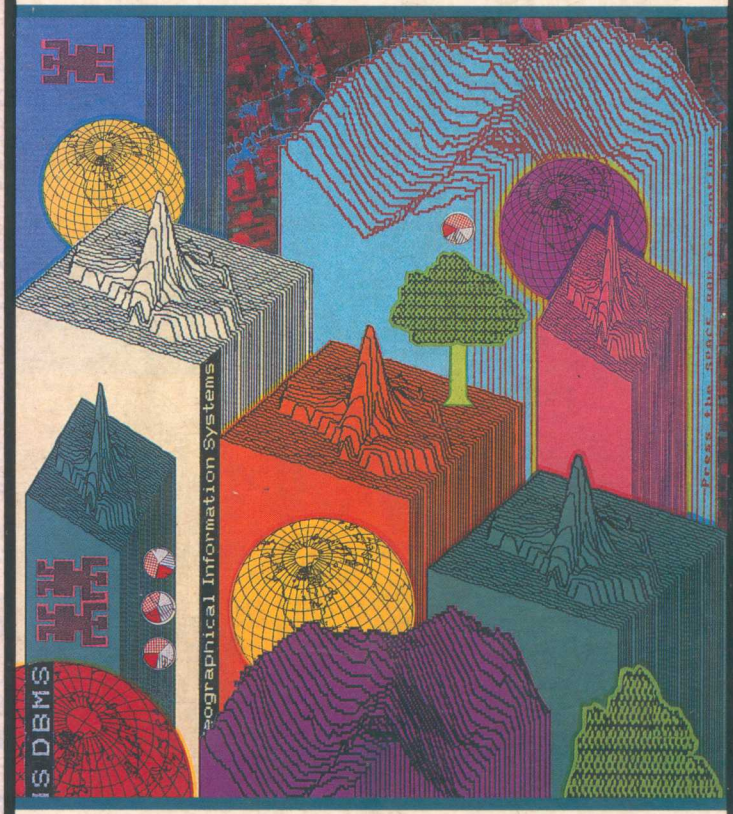
COMPUTERS IN GEOGRAPHY



DAVID J. MAGUIRE

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Preface

This book is concerned with the applications of computers in geography. It is not a computer manual; indeed it is not a computer book as such. It is a geography book which considers how geographers from all branches of the discipline can enhance their work by using computers. Little knowledge of computers and quantitative techniques is assumed at the outset. The necessary key concepts and techniques are introduced at the appropriate place within the text.

This book follows a logical progression. It begins with an introductory chapter that overviews the subject of computers in geography. The following chapters consider how computers can be used in each of the major stages on the road to geographical explanation. Thus there are chapters on data collection, storage, management, analysis and presentation. Each chapter has suggestions for further reading and there is a comprehensive bibliography at the end of the book. Technical phrases used in the text are explained in a glossary also at the end of the book. Examples are used throughout to demonstrate how best to apply information technology to specific problems in both human and physical geography. The examples are illustrated by over 100 photographs, line drawings and tables.

The general discussion is relevant to mainframe computers, minicomputers and microcomputers alike. Special emphasis is, however, given to microcomputers, reflecting the enormous contribution they have made to geographical computing in the 1980s. Many of the examples are based around Acorn and IBM hardware and software products which are in widespread use in educational establishments in several

countries, notably in Britain and North America. Whilst these examples have been designed to illustrate general principles, inevitably it has been necessary to present some specific hardware and software details. It should be borne in mind when reading the examples that many other combinations of hardware and software can be used to achieve similar results.

This book is aimed primarily at first- and second-year undergraduates, though much of the material will be relevant to other students and lecturers. Undergraduates will find that it offers an overview of current and potential future applications of computers in geography. It also presents details of the impact of information technology on science and society. Lecturers should be able to use it to find ways of using computers to enhance their teaching, research and administration. Those lecturers concerned with departmental resource allocation should, in addition, find the reviews of hardware and software and the discussion about the role of computers of value.

Two frequent criticisms of books that discuss computers are that they are often out of date before they are published and that they contain too much crystal-ball gazing. To try to avoid the first criticism I have liaised closely with the publishers to minimize delays. To try to avoid the second I have restricted discussion of the latest or shortly-to-arrive hardware and software, which some cynical computer users refer to as 'vapourware', because they often never arrive or live up to their advanced publicity. I have aimed slightly on the conservative side and have chosen to discuss only those aspects of computing in geography that have been proven at the time of writing.

Last, but by no means least, I would like to thank and dedicate this book to Heather, Amy and Walt, without whom this book would not have been possible or worthwhile. One of them read, commented on and corrected everything; the others slept through most of the process.

David J. Maguire
Whitecroft, Oadby
February 1988

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