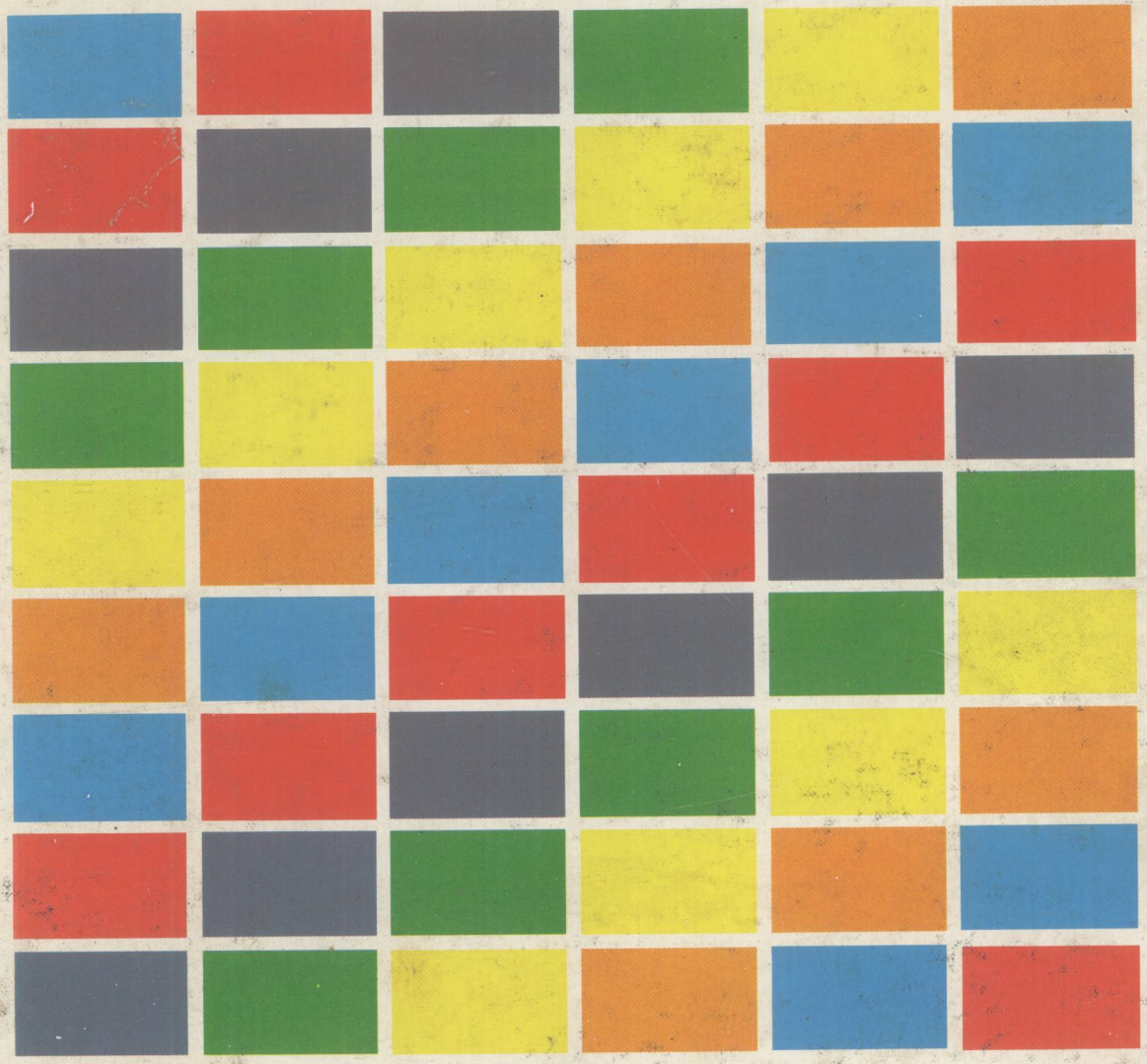
Richard C. Perkinson

Data Analysis
The Key to Data Base Design



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Data Analysis: The Key to Data Base Design

Richard C. Perkinson

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Wellesley, Massachusetts

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Acknowledgments

I wish to thank several people at QED Information Sciences, Inc., without whom this book would never have come to such a successful fruition.

First, let me thank Peters P. Jones, my colleague at QED, who reviewed every word of this text. The "how to" list found in Appendix E is almost entirely his creation. It synthesizes beautifully all the steps in data analysis. I know the readers of this text will appreciate that contribution when they do their first data analysis. I would like to acknowledge another colleague, Parker Shannon, who did the original planning on which the banking case study in Appendix F is based.

Second, I wish to acknowledge the many contributions and hard work of QED's art department, in particular, Donna St. Martin and Sybil Norwood, whose artistic and timely contributions are greatly appreciated by this author.

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PREFACE

The inability of most data base designers to articulate to their user community the steps necessary to design a data base successfully, or even, in a basic sense, to group data together, is the reason for this book. This inability to articulate is for the most part unintentional on the part of the designers. The designers themselves have never really been asked to describe how they do it. They offer excuses, saying the task is "intuitively obvious," or that their techniques are "based on my eleven years experience," or some other such remark and never really analyze for anyone how they do what they do.

Implementation of the data base designs have gotten bogged down in the syntax and technology of the data base management system (DBMS) chosen. Lost in the shuffle are the user and the application—the raison d'être for the whole thing. Unnecessary constraints are applied to the design by the data base administrator (DBA) or designer based solely on the methodology of the DBMS, not the restrictions of the data.

This book is an effort to relieve some of this user discomfort with data base. Through the technique of *data analysis*, users will be able to understand data and communicate to the designer their needs more accurately. For the designer, data analysis provides a simple means to a desired end. It allows reliable prognostication of the performance and reliability of a design while it is still in the paper and pencil stage. The products of the handbook can easily be mapped to any commercially available

DBMS. The entire technique is a five-step process from initial data analysis to final physical data base design.

In addition to espousing data analysis and data base design techniques, this text will cover what the role of data is in an organization; when and how to use data dictionaries; and why and how to use data administration and the data base administration function.

In short, this book is an attempt to bridge the gap between structured analysis and design and management disciplines, such as business systems planning (BSP) or long-range systems planning (LRSP), by providing a simple method of going from one to the other in either direction by following a few simple rules.

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