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Data Administration

Selected Topics of Data Control

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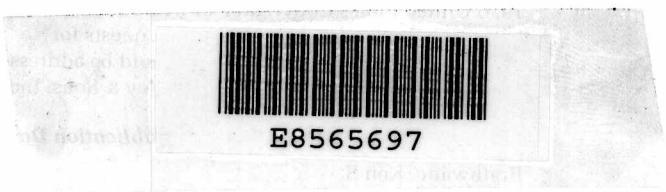

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DATA ADMINISTRATION

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This book is dedicated to my parents,

GRANVILLE AND URSALINE BRATHWAITE,

and all my relatives
whose support made this possible

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Preface

The work reported in this book was developed from notes I used in a course at the University of Alberta and research conducted at Alberta Government Telephones since 1979. It is intended to serve as a technical guide for workers at all levels in data administration and data management.

The main objective of this book is to provide selected readings on some topics in data administration and data management that are essential for the proper understanding of the data administration function. I not only strove to provide the readers with information on the traditional topics on database systems such as database design; database security, integrity, and privacy; and data dictionaries—but to go beyond that to discuss the practical implementation of some features that are frequently mentioned only briefly in other topical books.

As the title suggests, the book provides information on selected topics I consider to be particularly relevant in a database environment. The topics, although interrelated, are all dealt with independently. Thus each chapter in the book is intended to stand alone and any continuity between chapters is purely incidental. Therefore, the reader who is interested primarily in database security would not have to read the chapter on data administration in order to understand the issues of data security.

Chapter 1 is a synopsis of all the topics covered in the book. It introduces the database environment and the issues that evolve as a result of that environment. Chapter 2 introduces the concepts of data administration and database administration showing that database administration is a subset of data administration and that although different, the two functions are used interchangeably by several researchers. Chapter 3 outlines a database design methodology that has been developed, tested, and implemented by a major public utility.

The chapter on database security, integrity, and privacy is a direct result of years of research and practical application in a large database environment.

The protection mechanisms discussed in Chapter 5 are again the results of extensive research in that area and the implementation of some of these mechanisms in another large corporation.

Chapters 6 and 7 discuss data administration functions and services that are now being tested in a very progressive database environment.

Finally, the data dictionary outlined in Chapter 9 and Appendix A was implemented in a large public utility about three years ago and has served its users well.

KEN S. BRATHWAITE

Edmonton, Alberta
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K.S.B.

Contents

PART ONE. DATA ADMINISTRATION CONCEPTS AND DATA CONTROL

1. The Database Environment 3

1.1. A Database Environment, 3
1.1.1. IMS Structures and Organization, 4
1.2. Features of the Database Environment, 6
1.2.1. Database Design Methodologies, 7
1.2.2. Database Security, Privacy, and Integrity, 7
1.2.3. The Data Administration Function in the Database Environment, 9
1.2.4. Resolution of Conflicts in Data Ownership and Sharing, 10
1.2.5. Techniques for Auditing Data Bases and On-Line Systems, 11
1.2.6. Data Dictionaries and Data Dictionary Standards, 12
References, 12

2. Concepts of Data Administration and Database Administration, 14

2.1. Approach to Coverage of Topics, 15
2.2. Functions of Data Administration, 15
2.3. Activities of Data Administration, 16
2.4. Positioning of Data Administration Function, 16
2.5. Reporting Level of Data Administration Function, 17
2.6. Summary of Data Administration Function and Activities, 17
2.7. Functions of Database Administration, 18
2.8. Scope of DBA Functions, 19
2.9. Activities of Database Administration, 19
2.9.1. DBA Activities during Feasibility, 21
2.9.2. DBA Activities during Definition, 21
2.9.3. DBA Activities during Design, 21
2.9.4. DBA Activities during Implementation, 22
2.9.5. DBA Activities during Conversion, 23
2.9.6. DBA Activities during Operation, 23
2.9.7. DBA Activities during Maintenance, 23
2.9.8. DBA Activities during Performance Reviews, 23
2.10. Summary, 23
References, 24

3. Database Design Methodology 25

3.1. Review of Existing Methodologies, 26
3.2. Detailed Discussion of Database Design, 26
3.2.1. Inputs to Design Process, 28
3.2.2. The Entity-Relationship (E-R) Approach Methodology, 29
3.2.3. The Data Analysis Phase, 30
3.2.4. Conducting the Data Analysis Phase, 32
3.2.5. The Entity Model, 32
3.2.6. Approaches to Entity Model, 33
3.2.7. Stages of Integration of Entity Models, 34

3.2.8. Entity Modeling Case Study, 34
3.2.9. Application of Revisions to Entity Model, 35
3.3. Deriving Entity Models from Traditional or Flat Files, 37
3.3.1. Superimposition of Entity Models, 38
3.3.2. Clustering of Entity Classes, 38
3.3.3. Application View and Logical Schema Design, 40
3.3.4. Logical Schema—Case Study, 41
3.3.5. Translation of the Logical Schema into Physical Data Bases, 42
3.4. Summary, 43
References, 43

4. Database Security, Privacy, and Integrity 45

4.1. Conducting a Threat Analysis, 47
4.1.1. Threat Analysis—Case Study, 48
4.1.2. Analysis of Results, 49
4.1.3. Conducting a Risk Assessment, 51
4.1.4. Achieving Database Privacy, 57
4.1.5. Access Management, 57
4.1.6. Privacy Transformations, 58
4.1.7. Cryptographic Controls and Data Transformation, 58
4.1.8. Database Integrity, 59
References, 59

5. Advanced Features of Database Security, Privacy, and Integrity 60

5.1. Top-Level Management Involvement in Database Security, Privacy, and Integrity, 61
5.2. Administrative Controls, 63
5.3. Auditing and Monitoring the Data Base, 64
5.4. Types of Protection Mechanism, 66
5.4.1. The Access Matrix as a Protection Mechanism, 67

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5.4.2. Rules Governing Accessing Decisions, 70
5.4.3. Protection Levels of Access Matrix, 71
5.4.4. The Access Matrix Monitor, 72
5.4.5. Administrative Controls in Access Matrix Environment, 73
5.4.6. The Software Version of the Access Matrix Monitor, 74
5.4.7. Design of the Monitor, 74
5.4.8. Functions of the Monitor, 75
5.4.9. Design of Subject and Object Directories, 75
5.4.10. Objects and Subjects of the Access Matrix, 75
5.4.11. Processing Details of Access Matrix Model, 76
5.4.12. Processing Alternatives of Access Matrix Model, 77
5.5. The Risk Assessment as an Aid to Selecting a Protection Mechanism, 77
5.6. Resource Access Control Facility (RACF) as a Protection Mechanism, 79
5.6.1. RACF Concepts, 79
5.7. Summary, 81
References, 81

6. The Data Administration Function—Future Trends in DA and DBA 82

6.1. Objectives of Database Administration, 82
6.2. The Changing Role of Data Administration, 84
6.3. The Changing Nature of the Database Environment, 85
6.4. Data Administration Internal Changes, 88
6.5. Data Administration External Changes, 90
6.6. Summary, 92
References, 92

7. Resolution of Conflicts in a Database Environment 94

7.1. Data Ownership in a Corporate Environment, 94
7.2. Data as a Corporate Resource, 95

7.3. Top-Level Management Control of its Data Resource, 97
7.4. Data Ownership in a Corporate Environment, 98
7.5. Combating the Sociological Fall-Out from Database Development and Data Integration, 100
7.6. Concepts of Data Sharing Models, 102
7.7. Creation of a User Group to Arbitrate and Mediate in Data Sharing Conflicts, 104
7.8. The Role of Internal Auditors in a Data Sharing Environment, 105
References, 106

8. Techniques for Auditing Data Bases and On-Line Systems **107**

8.1. Auditing the Database Environment, 107
8.2. Types of On-Line Systems, 110
8.2.1. Unauthorized Access, 111
8.2.2. Loss of Audit Trail, 112
8.2.3. Transmission Errors and Controls, 113
8.2.4. Data File Controls, 113
8.2.5. Output Controls, 114
8.2.6. Evaluation of Controls, 115
8.3. Changes in Approach to Testing, 115
8.3.1. Transaction Tagging, 115
8.4. Summary, 117
References, 117

9. Concepts of Data Dictionaries **119**

9.1. Data Dictionary as a Glossary of Definitions, 119
9.2. Data Dictionary as a System Development and Maintenance Tool, 120
9.3. Data Dictionary as a Superior Documentation Medium, 120
9.4. Case Histories of Data Dictionary Usage, 120
9.4.1. Data Dictionary Use at Company A, 121

9.4.2. Example of Management Uses of the Data Dictionary, 122
9.4.3. Company A's Approach to Using the Data Dictionary, 122
9.4.4. Company A's Use of the Data Dictionary for Business Planning, 122
9.4.5. Data Dictionary Use at Company B, 123
9.4.6. Company B's Use of the Extensibility Feature of the Data Dictionary, 123
9.5. The Concept of Metadata, 124
9.6. Contents of a Typical Data Dictionary, 127
9.6.1. Dictionary Contents, 127
9.7. Developing a Data Dictionary System—Case Study, 128
9.8. Application of Data Dictionary, 131
9.9. Retrieval From the Data Dictionary, 133
9.10. Summary, 134
References, 134

PART TWO. CASE HISTORIES

10. Report on a Study of Database Security, Privacy, and Integrity **139**

10.1. Need for Risk Assessment, 140
10.2. Purpose of a Risk Assessment, 141
10.3. Administrative Controls, 142
10.4. Threat Monitoring and Auditing, 144
10.5. The Use of Logs as a Protection Mechanism, 144
10.6. Access to Source Libraries, 145
10.7. Password Protection, 145
10.8. Analysis of Survey Responses, 145
10.9. Inadequate Threat Monitoring, 146
10.10. Unauthorized Access to Passwords, 147
10.11. Inadequate Authentication, 147
10.12. Unauthorized Access to Source Libraries, 148
10.13. Inadequate Control Over Use of Utilities, 148

10.14. Inability to Identify Terminals, 149
10.15. Cost/Benefit Analysis, 150
10.16. Inadequate Administrative Controls, 150
10.17. Access to Residues, 150
10.18. Interface Between Secure and Insecure Programs, 151
10.19. Inadequate Completeness Test, 151
10.20. Summary of Security Features in a Secure Environment, 152
10.21. Summary of Protection Mechanisms in a Secure Environment, 153
10.22. Recommended Internal Protection Mechanisms, 154
References, 155

Appendix A. Attribute Definition Contents **156**

Appendix B. Entity Class Definition Contents **163**

Appendix C. Logical Group Definition Contents **173**

Appendix D. IMS Database Definition Contents **189**

Appendix E. Logical Schema Definition Contents **202**

Index **217**

PART ONE

Data Administration Concepts and Data Control

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