

INTRODUCTION TO DATA PROCESSING

Popkin / Pike



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Introduction to Data Processing

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To our children
Deborah, Barbara, Arthur, and David

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Introduction to Data Processing

Preface

We have written this introductory data-processing textbook to fill the need for a text that teaches at a truly introductory level. In our classroom experience, we've long felt a need for an introductory text that:

1. beginners can easily understand,
2. starts at the beginning with the least complex material,
3. is careful with the use of technical vocabulary so that words are defined and explained before or as they are used,
4. treats technical topics such as flowcharting in a clear and specific manner, and
5. teaches, and does not serve simply as a reference adjunct to the teacher.

We feel that our book meets all these needs, and more. The language we have used derives from our classroom lectures and discussions and is thus a teaching language.

Whenever possible, we have provided opportunities for instructors to adapt text material to their local situations. We recognize that the hardware and software available for beginning students vary widely. We feel that data-processing instructors can enrich their courses by helping students become familiar with what is available locally and by bringing into class discussions samples of work that have been produced locally. For example, in the chapters dealing with programming languages and especially in the exercises for these chapters, we have challenged students to discover for themselves (or with their instructor's aid) just what is available for their use (whether it be meager or plentiful). We hope in this way to encourage students to learn how to properly request the use of available resources and how best to approach computer center personnel.

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Gary S. Popkin
Arthur H. Pike

Contents

	Preface	xv
Chapter 1	Data Processing: An Introduction	1
	Human Data Processors	2
	Automated Data Processors	6
	The Control Function	7
	Summary	9
	Review Exercises	9
Chapter 2	The System Flowchart	10
	The Flow of Tasks in a Billing System	11
	System Flowcharts for Manual Systems	12
	System Flowcharts for Computer Systems	18
	Summary	21
	Review Exercises	21
Chapter 3	Computers in Systems	23
	Business Systems	23
	Scientific Research Systems	30
	An Airline Reservation System	31
	Government Systems	32
	Summary	33
	Review Exercises	33
Chapter 4	The Role of Computers in Data-processing Systems	35
	Converting Data into Information	36
	Levels of Data Processing	37
	Manual Systems	38
	Mechanical Systems	38
	Electronic Systems	38

	Choosing a System	38
	Computing Machinery in Electronic Data-processing Systems	38
	Placing Proper Emphasis in our Study of Data Processing	39
	Advantages of Computers	41
	Limitations of Computers	44
	Summary	45
	Review Exercises	45
Chapter 5	Decimal and Binary Number Systems	47
	The Decimal System	48
	The Binary System	49
	Conversion	51
	Comparing the Values of Two Binary Numbers	51
	Binary Counting	52
	Binary Addition	52
	Adding with Carries	53
	Converting Decimal Numbers to Binary	54
	Binary Fractions	54
	Complements	56
	Summary	57
	Review Exercises	58
Chapter 6	Octal and Hexadecimal Number Systems	59
	The Octal Number System	60
	Conversion with Fractions	62
	Octal Addition	63
	Octal Subtraction	65
	The Hexadecimal Number System	65
	Decimal-to-hexadecimal Conversion	67
	Binary-to-hexadecimal Conversion	68
	Counting in the Hexadecimal System	69
	Hexadecimal Addition	71
	Hexadecimal Subtraction	73
	Summary	73
	Review Exercises	73
Chapter 7	Coding Data for Computer Handling	75
	The 80-column Card	76
	Card Code Terminology	79
	The 96-column Card	80
	The Letters in Six-bit BCD	81
	The Key punch	81
	Keys in Figure 7.8	83

	Switches in Figure 7.9	85
	Summary	87
	Review Exercises	87
	Appendix to Chapter 7: Keypunch Program Control	88
Chapter 8	Primary Storage	91
	Magnetic Cores	92
	Bit Groupings	95
	Storage Sizes	97
	Fixed and Variable Word Length	97
	Summary	98
	Review Exercises	99
Chapter 9	Codes and Formats	100
	BCD Coding in Six-bit Bytes	101
	Parity	103
	Coding for Eight-bit Bytes	104
	Parity in the Eight-bit Byte	106
	Numeric Fields	107
	Negative Numbers	109
	Summary	111
	Review Exercises	111
Chapter 10	Inputting Data and Instructions	112
	Card Readers	113
	Program Loading	116
	Punched Paper Tape	118
	Magnetic Ink Character Recognition	120
	Optical Character Recognition	123
	Mark Sensing	125
	Key-disk and Key-tape	125
	Point-of-sale Automation	127
	Flexible Disk	128
	Other Input Methods	129
	Summary	129
	Review Exercises	130
Chapter 11	Outputting Processed Information	131
	Printers	131
	Character Printers	132
	Line Printers	133
	Punches	137

	Display Output	138
	Digital Display Terminals	139
	Graphic Display Terminals	140
	Computer-output Microfilm and Computer-output Microfiche	141
	Other Nonimpact Printing	142
	Plotters	143
	Other Output Methods	145
	Summary	145
	Review Exercises	146
Chapter 12	Disk, Drum, and Tape	147
	Magnetic Tape	149
	Blocking Records	152
	The Tape Transport	152
	File Protection	154
	Direct-access Storage	155
	Magnetic Disk	155
	Magnetic Drum	160
	Summary	160
	Review Exercises	161
Chapter 13	The Idea of Programming	162
	Review of Manual and Mechanical Systems	163
	Manual Systems	163
	Mechanical Systems	163
	Other Examples of Manual and Mechanical Systems	163
	Electronic Systems	164
	Examples of Control at the Three Systems Levels	165
	Manual Systems	165
	Mechanical Systems	166
	Electronic Systems	166
	Human-Machine Relationships in Electronic Systems	167
	The Control Unit	167
	The Need for Programming	169
	Computer Programs	170
	What a Computer Program Does	171
	Summary	171
	Review Exercises	172
Chapter 14	The Program Flowchart	173
	An Easy Math Problem	174
	The Flowchart as a Guide to Coding	182

	Loops	183
	Summary	184
	Review Exercises	185
Chapter 15	Additional Program Flowchart Concepts	186
	Reading Input Data	187
	Exiting from a Read Loop	190
	Totals	192
	Changing Names in Flowcharts	193
	Incorrect Printing of Totals	196
	Additional Totals	199
	Summary	199
	Review Exercises	201
Chapter 16	Applying Program Flowcharts	202
	Some Additional Complications	203
	Additional Standard Symbols	210
	Program Modification	211
	Summary	213
	Review Exercises	214
Chapter 17	Batch Processing	216
	The Need for Information	217
	Processing Data Using Manual Systems	217
	Batch Processing	218
	Batch Processing Using Mechanical Systems	218
	Electronic Systems	221
	Limitations of Batch Processing	225
	Offline Batch- or Sequential-processing Systems	226
	Online Systems	226
	Summary	227
	Review Exercises	227
Chapter 18	Realtime	229
	Online and Offline Data-input Devices	230
	Online Data Processing	230
	Online Realtime Systems	232
	Applications in Banking	233
	Advantages of Realtime Systems	234
	Applications in Medicine	234
	Applications in Education	235
	Direct-access Storage	237

	Summary	239
	Review Exercises	239
Chapter 19	File Organization and Access	241
	Sequential	242
	Indexed-sequential	244
	Direct	246
	Summary of Characteristics	249
	Applications of File Organization Methods	249
	Summary	251
	Review Exercises	252
Chapter 20	File Maintenance	253
	File-maintenance Procedures	255
	An Update Step by Step	258
	Master File Storage	260
	Protection of Files in a File-maintenance System	261
	Tape Labels	263
	External Labels	263
	Internal Labels	264
	Summary	265
	Review Exercises	265
Chapter 21	Documentation	267
	Standardizing Documentation	268
	Types of Documentation	268
	General Information about the System	269
	Systems Specifications	269
	Program Documentation	270
	Operating Instructions	271
	Groups Needing Documentation	271
	The Purpose of Documentation	272
	Benefits of Good Documentation	273
	Preparing Documentation	274
	Determining How Much Documentation Should Be Prepared	274
	Protecting Documentation from Misuse or Loss	275
	Summary	275
	Review Exercises	276
Chapter 22	Operating Systems	277
	Purpose of Operating-system Programs	279
	Functions of Operating Systems	280

	Role of Humans in Operating Systems	280
	Composition of Operating-system Programs	282
	A Priority Operating System	282
	Summary	283
	Review Exercises	284
Chapter 23	Machine-language Programming	286
	The "How" of Computers	287
	The Clock	287
	Machine Cycles	288
	How Instructions Are Handled	288
	The Format of an Instruction	289
	The Anatomy of Machine-Language Instructions	289
	Higher-level Languages	290
	Disadvantages of Machine Language	292
	Summary	292
	Review Exercises	292
Chapter 24	Assembler Languages	295
	Need for Assembler Languages	295
	A Review of Machine Languages	295
	Classifying Programming Languages	296
	Assembler Languages	296
	Imperative Instructions	297
	Data Definitions	297
	Instructions to the Assembler	298
	Calls to Macro-instructions	298
	Calls to Subroutines	299
	Output of Assembly Processing	299
	Advantages and Disadvantages of Assembler Languages	299
	Summary	300
	Review Exercises	301
Chapter 25	FORTRAN	303
	The Development of FORTRAN	304
	The FORTRAN System	304
	FORTRAN Source Statements	305
	Arithmetic Statements	306
	Definitive Statements	306
	Declarative Statements	307
	Input and Output Statements	309
	Branching Instructional Statements	310
	Writing FORTRAN	311

	FORTTRAN Compiler Programs	312
	Summary	312
	Review Exercises	312
Chapter 26	COBOL	315
	Brief Review of FORTRAN	315
	Solving Business Problems	316
	What "COBOL" Means	317
	The Four Divisions of a COBOL Program	317
	Identification Division	317
	Environment Division	318
	Data Division	319
	Procedure Division	322
	The COBOL Compiler	322
	Summary	323
	Review Exercises	324
Chapter 27	Time Sharing and BASIC	325
	Time-sharing Service Companies	326
	The Costs of Time Sharing	326
	The Concept of Time Sharing	327
	Time-sharing Terminals	327
	Time-sharing Computer Languages	328
	Multiple Users in a Time-sharing Network	329
	What Terminal Users Receive	329
	Preparing a Terminal for Use	330
	BASIC	331
	BASIC at a Terminal	332
	The Numbering System in BASIC	332
	Summary	333
	Review Exercises	333
Chapter 28	Data Communications	335
	Electric Methods of Communicating Data	336
	Teleprocessing	337
	Parts of a Teleprocessing Network	338
	Terminal	338
	Interconnecting Device	339
	Communications Line	339
	Another Interconnecting Device	339
	Another Terminal	339

Terminals for Data Communications	340
Printing Terminals	342
Punched-card Transmission Terminals	343
Cathode-ray Terminals	343
Computer Connected to Computer	343
Audio Terminals	344
Other Types of Terminals	345
Communications Channels for Teleprocessing	346
Simplex Channel	346
Half-duplex Channel	346
Full-duplex Channel	346
Speeding Up Data Transmission	347
Summary	347
Review Exercises	348

Chapter 29

Multiprogramming and Multiprocessing	349
The Sources of Idle or Wasted Computer Time	350
The Control Unit	351
The Results of Multiprogramming	352
Multiprocessing	354
Advantages of Multiprogramming and Multiprocessing	356
Multiprogramming Applied to Time Sharing	356
Summary	357
Review Exercises	357

Chapter 30

Minicomputers and Microprocessors	359
Brief History of Minicomputers	360
What Minicomputers Have Become	360
Concept of Minicomputers	361
What Minicomputers Can Do	362
Minicomputers in Weather Forecasting	363
Centralized Versus Decentralized Computing	364
Advantages of Minicomputers	364
Fast Response Time	364
Low Costs	365
Ease of Expansion	365
Dependability	365
Limitations of Minicomputers	365
Minicomputers Versus Maxicomputers	366
And Now Microcomputers	367
Summary	368
Review Exercises	368

Chapter 31	History of Data Processing and Career Opportunities	370
	New Developments in Data-processing Equipment	377
	Career Opportunities in Data Processing	377
	Entry-level Positions	378
	Additional Entry-level Positions	383
	Summary	385
	Review Exercises	385
Chapter 32	Security and Privacy in Computer Installations	387
	Security of a Computer Installation	388
	Privacy and Computerized Record-keeping Systems	389
	Are Computers Invading Our Privacy?	392
	Computers and Personal Privacy	392
	Safeguarding Personal Privacy	394
	Ethics for Computer Professionals	394
	Summary	395
	Review Exercises	395
	Glossary	397
	Bibliography	412
	Index	413

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Data Processing: An Introduction

“Herbert Simon views the computer as the fourth great breakthrough in history to aid man in his thinking process and decision-making ability. The first was the invention of writing, which aided man’s memory in performing mental tasks. The remaining two events prior to the computer were the emergence of the Arabic number system with its zero and positional notation, and the invention of analytic geometry

and calculus, which permitted the solution of complex problems in scientific theory. Now the electronic digital computer combines the advantages and attributes of all these breakthroughs and makes them available for decision making and for management of organizations.” (Robert G. Murdick and Joel E. Ross, Information Systems for Modern Management, Prentice-Hall, Englewood Cliffs, N.J., 1971, p. 238.)

Here are the key points you should learn from this chapter:

- 1. How humans process data.**
- 2. The tools and capabilities people need to process data.**
- 3. The role of the computer in data processing.**
- 4. The role of the programmer.**

Key words to recognize and learn:

billing
billing clerk
output
storage
input
arithmetic
logic

control
document
computer system
data-processing
system
input device

output device
memory
central processing
unit (CPU)
program
programmer

The role played by electronic computers in modern society and in our everyday lives is now so vast that every educated person should have some understanding of them. This book is written for students who want