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Program Composition -- 9.2 Simple Functions -- 9.3 Simple Procedures -- 9.4 Parsing Methods -- 9.5 Array Parameters -- 9.6 Scope Rules of Methods -- 9.7 Array Functions -- 9.8 Abstraction -- 9.9 Advantages of Methods -- 9.10 Java Pitfalls -- 9.11 Programming Exercises -- 10 Recursion -- 10.1 Recursive Methods -- 10.2 Mutual Recursion -- 10.3 Programming Exercises -- 11 Classes -- 11.1 The Class Concept -- 11.2 Data Structures -- 11.3 Class Hierarchies -- 11.4 The Traveling Salesperson -- 11.5 Final Remarks -- 11.6 Java Pitfalls -- 11.7 Programming Exercises -- Appendix A Java Text Program -- A.1 Installing the Text Program -- A.2 The Basic Class -- A.3 The Output Class -- A.4 The Input Class -- A.5 The Random Class -- Appendix B Sample Class Schedule -- References.

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## Sommario/riassunto

This is a book about computer programming for everyone: artist, poet, student, doctor, accountant, or engineer. It assumes you know very little or nothing about how computers work. This book will show you how to write understandable computer programs in Java, a programming language widely used on the Internet. Why should we be interested in learning computer programming? Even though most readers will not wish to become professional programmers, programming is fun and useful. You will enjoy learning a new skill and becoming good at it. And, in today's world it is important for professionals in any field to appreciate what computers can (and cannot) do well. To reach this level of understanding, you must go beyond the routine skills of a computer user and learn the art of programming in some depth. While emphasizing general principles of programming this book:

- \* Uses examples from the humanities only, requiring no math or engineering knowledge
- \* Explains all programming concepts by means of complete programs
- \* Concentrates on exercises solved by writing complete programs
- \* Takes the reader from text input/output to object-oriented programming in the equivalent of a one semester class.
- \* Gives the reader a solid background for follow-on courses on the graphics and networking facilities of Java.

This book is a sound and complete introduction to programming and not just another Java reference book for those who already know how to program. Although the book uses Java, the same methods can be used for systematic programming in other languages, such as C, Fortran, and Pascal. The book makes a splendid text for a one semester course on beginning programming and for such a course there are teaching aids available at the author's website. Professor Per Brinch Hansen, is one of the leading pioneers in computer programming, and his insight and experience make learning proper computer programming in Java fun and easy for everyone.

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