Introducing Fortran 95 contains: - Lots of clear and simple examples highlighting the language features - Details of a variety of Internet based sources which will prove invaluable for those seeking further information and support - Key features of the latest version of Fortran, including ISO Technical Reports TR 15580 and TR 15581 This comprehensive introduction will be essential to the complete beginner who wants to learn the fundamentals of programming using a modern, powerful, expressive and efficient language and who is wanting to upgrade their existing Fortran programming skills by moving from more earlier versions of Fortran. Ian Chubb and John Salloway are the joint owners of comp-fortran-90, both authors have been involved in teaching and supporting Fortran related areas for over 20 years. This work provides a short "getting started" guide to Fortran 95/90. The main target audience consists of newcomers to the field of numerical computation within Earth system sciences (students, researchers or scientific programmers). Furthermore, researchers wanting to benefit from the improved features of the main goal is to give Fortran programmers a quick guide to writing useful programs. It also introduces a gradual discussion of Input/Output facilities relevant for Earth system sciences, from the simplest ones to the more advanced netCDF library (which has become a de facto standard for handling the massive data sets that are common in Earth system sciences). The book contains a large number of practical working programs which come with the book. Compared to other books, this work provides a much more compact view of the language, while also placing language elements in a more applied setting, by providing examples related to numerical computing and more advanced Input/Output facilities for Earth system sciences. Naturally, the coverage of the programming language is relatively shallow, since many details are skipped. However, many of these details can be learned gradually by the practitioner, after getting an overview and now practice with the language through this book.

ROBETH (written in ANSI FORTRAN 77) is a systematized collection of algorithms that allows computation of a broad class of problems based on M- and high-breakdown point estimation, including robust regression, robust testing of linear hypotheses, and robust covariances. This book describes the computational procedures included in ROBETH. Each chapter is devoted to a particular area of numerical analysis within which a particular class of problems is considered. The book provides a comprehensive overview of the state of the art in the field of numerical analysis and it is an ideal textbook for scientists and engineers and an indispensable reference book for anyone who works in scientific computing. The Second Edition is available in an updated version, which includes the latest FORTRAN subroutines and of the numerical algorithms as they are implemented in the corresponding FORTRAN subroutines. The scripts of several examples concerning the use of ROBETH by means of the S-PLUS interface, including some examples of high-level S functions.

This text examines the impact of drug-taking behavior on our society and our daily lives. The use and abuse of a wide range of licit and illicit drugs are discussed from historical, biological, psychological, and sociological perspectives. For readers accustomed to other programming languages may also benefit from this work, by discovering how some programming techniques they are familiar with map to Fortran 95. The main goal is to enable readers to quickly start using Fortran 95 for numerical computing. The application of modern Fortran in the Earth system sciences. Naturally, the coverage of the programming language is relatively shallow, since many details are skipped. However, many of these details can be learned gradually by the practitioner, after getting an overview and now practice with the language through this book.
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The introduction of the Fortran 90 standard is the first significant change in the Fortran language in over 20 years. This book is designed for anyone wanting to learn Fortran for the first time or a programmer who needs to upgrade from Fortran 77 to Fortran 90. Employing a practical, problem-based approach, this book provides a comprehensive introduction to the language. More experienced programmers will find it a useful update to the new standard and will benefit from the emphasis on science and engineering applications.

This is the greatly revised and greatly expanded Second Edition of the hugely popular Numerical Recipes: The Art of Scientific Computing. The product of a unique collaboration among four leading scientists in academic research and industry Numerical Recipes is a complete text and reference book on scientific computing. In a self-contained manner it proceeds from mathematical and theoretical considerations to actual practical computer routines. With over 100 new routines bringing the total to well over 300, plus upgraded versions of the original routines, this new edition remains the most practical, comprehensive handbook of scientific computing available today. Highlights of the new material include: A new chapter on integral equations and inverse methods - Multigrid and other methods for solving partial differential equations - Improved random number routines - Wavelet transforms - The statistical bootstrap method - A new chapter on "rare-numerical" algorithms including compression coding and arbitrary precision arithmetic. The book contains the informal easy-to-read style that made the first edition so popular, while introducing some more advanced topics. It is an ideal textbook for scientists and engineers and an indispensable reference for anyone who works in scientific computing. The Second Edition is available in FORTRAN, the traditional language for numerical calculations and in the increasingly popular C language.

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Supercomputing is an important science and technology that enables the scientist or engineer to simulate numerically very complex physical phenomena related to large-scale scientific, industrial and military applications. It has made considerable progress since the first NATO Workshop on High-Speed Computation in 1983 (Vol. 7 of the same series). This book is a collection of papers presented at the NATO Advanced Research Workshop held in Trondheim, Norway, in June 1989. It presents key research issues related to: - hardware systems, architecture and performance; - compilers and programming tools; - user environments and visualization; - algorithms and applications. Contributions include critical evaluations of the state-of-the-art and many original research results.

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Fortran is the Pioneer Computer Language Originally Designed To Suit Numerical, Scientific And Engineering Computations. In spite Of The Birth Of Several Computer Languages, Fortran Is Still Used As A Primary Tool For Programming Numerical Computations. In this book All The Features Of Fortran 77 Have been Elaborately Explained With The Support Of Examples And Illustrations. Programs have been Designed And Developed In A Systematic Way For All The Classical Problems. All The Topics Of Numerical Methods Have Been Presented In A Simple Style And Algorithms Developed. Complete Fortran 77 Programs And More Than One Sets Of Sample Data Have Been Given For Each Method. The Content Of The Book Have been Carefully Tailored For A Course Material Of A One Semester Course For The Computer Science, Mathematics and Physics Students.