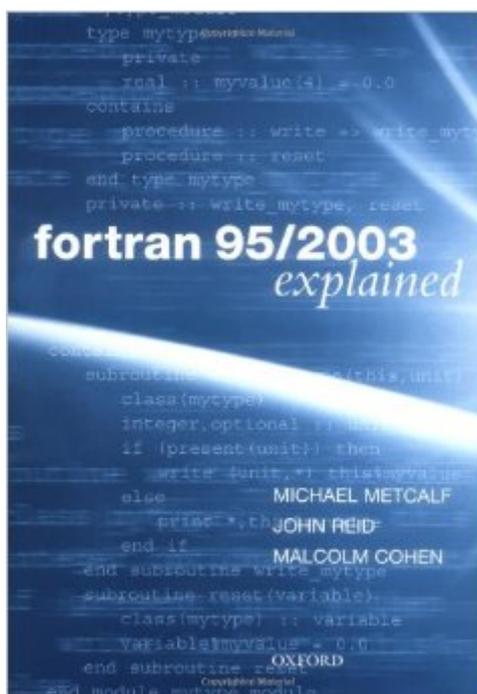# Fortran 95/2003 Explained (Numerical Mathematics And Scientific Computation)

Synopsis

Fortran remains one of the principal languages used in scientific, numerical and engineering programming and a series of revisions to the standard versions of the language have progressively enhanced its power. The latest standard-Fortran 2003-greatly extends the power of the language, by introducing object-oriented concepts, interoperability with C, better integration with operating systems and many other enhancements. This text details all these new features. Fortran 95/2003 Explained, significantly expands on the second edition of Fortran 90/95 Explained (also publised by Oxford University Press): the opening chapters contain a complete description of the Fortran 95 language and are followed by descriptions of three formally approved extensions; six completely new chapters describe in detail the features that are new in Fortran 2003, but the distinction between the various language levels is kept clear throughout. Authored by the leading experts in the development of the language, this is the only complete and authoritative description of the two languages (Fortran 95 and Fortran 2003). Containing numerous examples, exercises and solutions, and an extensive index, it is highly suitable as both a student textbook and practitioner reference.

Book Information

Series: Numerical Mathematics and Scientific Computation

Paperback: 440 pages

Publisher: Oxford University Press; 3rd edition (August 26, 2004)

Language: English

ISBN-10: 0198526938

ISBN-13: 978-0198526933

Product Dimensions: 9.4 x 1 x 6.5 inches

Shipping Weight: 1.6 pounds

Average Customer Review: 4.2 out of 5 starsÂ Â See all reviewsÂ (11 customer reviews)

Best Sellers Rank: #1,459,501 in Books (See Top 100 in Books)   #45 inÂ Books > Computers & Technology > Programming > Languages & Tools > Fortran   #2848 inÂ Books > Politics & Social Sciences > Philosophy > Religious   #4789 inÂ Books > Textbooks > Computer Science > Programming Languages

Customer Reviews

Fortran 95 and especially Fortran 2003 are more modern and larger languages than the Fortran 77 many programmers have used. Some of the features in Fortran 95 not in Fortran 77 are free source form, array operations (similar to Matlab), user-defined types, and modules. Some new features in

Fortran 2003 are support for object oriented programming with (single) inheritance, procedure (function) pointers, IEEE arithmetic, interoperability with C, and command line arguments.The first ten chapters of the book cover the Fortran 95 subset of Fortran 2003, and the following chapters cover the new features of Fortran 2003.The three co-authors are Fortran experts and have served on theFortran standards committee. Their writing is clear and concise,packing a great deal of information into 416 pages. Earlier editions have been the most referenced books by serious Fortran programmers.The book plays a role for Fortran a similar to Stroustrup's "The C++ Programming Language" for C++. It is not a textbook for a novice programmer -- the reader should already know the basics of procedural programming. More pedagogical books on Fortran 90/95 for are those by Meissner, Chapman, andEllis/Phillips/Lahey. A good book for transitioning Fortran 77programmers is one by Redwine.As of January 2011, there are still no complete Fortran 2003 compilers, but the free g95 and gfortran compilers supports all of Fortran 95, and gfortran implements many of the features of Fortran 2003, including the object-oriented ones.

I have some 20 years experience in coding in Fortran 77, but finally needed to catch up with Fortran 95 and 2003. I have also bought "Fortran 90/95 for Scientists and Engineers" by Stephen Chapman and found that a much better book for beginners in Fortran 95. "Fortran 95/2003 Explained" reads, as other reviewers have noted, like a language reference. There is basically no build-up in this book and I also have the feeling that in earlier Chapters it is expected that you already know what comes in later Chapters. The examples in the book are rarely explanatory to me, they leave me often without a clear understanding of what purpose is served.For those who want to learn Fortran 95 (even for those who are already fluent in Fortran 77) I would recommend to buy the book by Stephen Chapman instead. If you want a reference manual, "Fortran 95/2003 Explained" will likely serve you well.

The review by V. Rau descibes the book very well. I am not sure that I can add much. There is a wealth of information. However, it reads like a specification for program language yet to be written. The information is all there but be prepared to figure out for yourself how to use the specifications that they list. Fortran is the language of choice for number crunching problems. I was at a loss most of the time to try to figure out how the newer specifications that they list could apply to the number crunching.

This book is the best on the subject of Fortran 95/2003, but there's not a lot of competition. It has a

specific target audience: practicing computer professionals. Don't pick it up if you are not already familiar with object-oriented programming, derived data types, pointers, etc. This is not the book from which to learn those concepts.It's a pity that there does not exist a book to bridge the gap between Fortran 77 (which the majority of the Fortran code base uses) and Fortran 95/2003. If you are a Fortran 77 programmer looking to learn Fortran 95/2003, this probably isn't the book for you. If you are a proficient C++ or Java programmer looking to pick up Fortran (there can't be very many of you) then you will find this book very helpful.

A quite thorough manual for Fortran 95 and its extensions to Fortran 2003. The approach seems to be aimed toward experienced programers who have some knowledge of Fortran 95 already. It does not guide you from Fortran 77 to Fortran 95, a considerable deficit for those who are approaching by that route. The writing is not very clear, and the examples are complex. Rationale is pretty much ignored, and there is no systematic tutorial approach. All the features appear to be accurately covered, however.

Amongst all the new computer books these days, it is rare to find one on Fortran. This text will have much familiar to programmers of earlier versions. The authors go on about Fortran 95 and its 2003 sibling. Yet it is still recognisably much like F77.The presentation is advanced. The level of difficulty of the syntax explanations is considerably above an elementary text. An important section advises on how to interoperate with C. Variables in one might map into variables in the other, using an ISO Binding scheme.But perhaps the most important aspect of F2003 is that it allows object oriented coding. Using type extensions and polymorphism. However, after going through the text, it still seems not as easy as C++ or Java.

Great book if you already know something about the language.It has clear explation about many topics, good examples and it is a great reference if you need to remember something fast.If you are a begginer, I would suggest you to start with a more basic book, like Ellis/ Philips/ Lahey.

Very difficult to read. Assumes no previous knowledge of Fortran, yet does not quite show the reader how to actually write a functional program until late in the book. Chapman's book(s) are much better.

Fortran 95/2003 Explained (Numerical Mathematics and Scientific Computation) Modern Fortran

Explained (Numerical Mathematics and Scientific Computation) 4th (Fourth) Edition Numerical Computing With Modern Fortran (Applied Mathematics) Fortran 77: With Numerical Methods for Engineers and Scientists/Book and Disk Fortran 77 and Numerical Methods for Engineers Numerical Recipes in FORTRAN Numerical Methods with Fortran IV Case Studies Fortran 77 Programming: With an Introduction to the Fortran 90 Standard (International Computer Science Series) Macbeth (No Fear Shakespeare) 2003 Edition by Shakespeare, William published by SparkNotes (2003) Paperback A Concise Introduction to Image Processing using C++ (Chapman & Hall/CRC Numerical Analysis and Scientific Computing Series) Scientific Software Development in Fortran Numerical Methods of Statistics (Cambridge Series in Statistical and Probabilistic Mathematics) Using OpenMP: Portable Shared Memory Parallel Programming (Scientific and Engineering Computation) Using MPI - 2nd Edition: Portable Parallel Programming with the Message Passing Interface (Scientific and Engineering Computation) Using Advanced MPI: Modern Features of the Message-Passing Interface (Scientific and Engineering Computation) Using MPI-2: Advanced Features of the Message Passing Interface (Scientific and Engineering Computation) axiom(TM): The Scientific Computation System Large Eddy Simulation for Compressible Flows (Scientific Computation) HITTESDORF CORBA/IIOP CLEARLY EXPLAINED (Clearly Explained) Diversity and the Tropical Rain Forest: A Scientific American Library Book (Scientific American Library Series)