

1. Record Nr.	UNINA9911020444803321
Autore	Harrop Jon D
Titolo	F# for scientists / / Jon Harrop ; foreword by Don Syme
Pubbl/distr/stampa	Wiley, 2011
ISBN	9786611766887 9781118210819 1118210816 9781281766885 1281766887 9780470385951 0470385952 9780470385944 0470385944
Edizione	[1st edition]
Descrizione fisica	1 online resource (370 p.)
Altri autori (Persone)	SymeDon
Disciplina	005.1/14
Soggetti	F (Computer program language) Functional programming (Computer science) Science - Data processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 325-327) and index.
Nota di contenuto	Introduction. Programming guidelines -- A brief history of F# -- Benefits of F# -- Introducing F# -- Imperative programming -- Functional programming -- Program structure. Nesting -- Factoring -- Modules. Objects -- Functional design patterns -- F# development -- Data structures. Algorithmic complexity -- Arrays -- Lists -- Sets -- Hash tables -- Maps -- Choosing a data structure -- Sequences -- Heterogeneous containers -- Trees -- Numerical Analysis. Number -- Algebra -- Interpolation -- Quadratic solutions -- Mean and variance -- Other forms of arithmetic -- Input and Output. Printing -- Generic printing -- Reading from and writing to files -- Serialization -- Lexing and parsing -- Simple Examples. Functional -- Numerical -- String related -- List related -- Array related -- Higher order functions -- Visualization. Windows forms -- Managed DirectX -- Tesselating

objects into triangles -- Optimization. Timing -- Profiling --
Algorithmic optimizations -- Lower level optimizations -- Libraries.
Loading .NET libraries -- Charting and graphing -- Threads -- Random
numbers -- Regular expressions -- Vectors and matrices --
Downloading from the Web -- Compression -- Handling XML --
Calling native libraries -- Fourier transform -- Metaprogramming --
Databases. Protein data bank -- Web services -- Relational databases
-- Interoperability. Excel interoperability -- MATLAB interoperability --
Mathematica interoperability -- Complete examples. Fast Fourier
transform -- Semicircle law -- Finding nth nearest neighbors --
Logistic map -- Real time particle dynamics -- Appendix A:
Troubleshooting.

Sommario/riassunto

""This work strikes a balance between the pure functional aspects of F# and the object-oriented and imperative features that make it so useful in practice, enable .NET integration, and make large-scale data processing possible.""-Thore Graepel, PhD, Researcher, Microsoft Research Ltd. Over the next five years, F# is expected to become one of the world's most popular functional programming languages for scientists of all disciplines working on the Windows platform. F# is free and, unlike MATLAB® and other software with numerical/scientific origins, is a full-fledged programming language.<
