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Nota di contenuto	Cover; Copyright; Credits; About the Author; About the Reviewers; www.PacktPub.com; Table of Contents; Preface; Chapter 1: The Julia Environment; Introduction; Philosophy; Role in data science and big data; Comparison with other languages; Features; Getting started; Julia sources; Building from source; Installing on CentOS; Mac OS X and Windows; Exploring the source stack; Juno; IJulia; A quick look at some Julia; Julia via the console; Installing some packages; A bit of graphics creating more realistic graphics with Winston; My benchmarks; Package management; Listing, adding, and removing Choosing and exploring packagesStatistics and mathematics; Graphics; Web and networking; Database and specialist packages; How to uninstall Julia; Adding an unregistered package; What makes Julia special; Parallel processing; Multiple dispatch; Homoiconic macros; Interlanguage cooperation; Summary; Chapter 2: Developing in Julia; Integers, bits, bytes, and bools; Integers; Logical and arithmetic operators; Booleans; Arrays; Operations on matrices; Elemental operations; A simple Markov chain - cat and mouse; Char and strings; Characters; Strings; Unicode support; Regular expressions Byte array literalsVersion literals; An example; Real, complex, and rational numbers; Reals; Operators and built-in functions; Special values; BigFloats; Rationals; Complex numbers; Juliasets; Composite types; More about matrices; Vectorized and devectorized code;

Multidimensional arrays; Broadcasting; Sparse matrices; Data arrays and data frames; Dictionaries, sets, and others; Dictionaries; Sets; Other data structures; Summary; Chapter 3: Types and Dispatch; Functions; First-class objects; Passing arguments; Default and optional arguments; Variable argument list; Named parameters; Scope
The Queen's problemJulia's type system; A look at the rational type; A vehicle datatype; Typealias and unions; Enumerations (revisited); Multiple dispatch; Parametric types; Conversion and promotion; Conversion; Promotion; A fixed vector module; Summary; Chapter 4: Interoperability; Interfacing with other programming environments; Calling C and Fortran; Mapping C types; Calling a Fortran routine; Calling curl to retrieve a web page; Python; Some others to watch; The Julia API; Calling API from C; Metaprogramming; Symbols; Macros; Testing; Error handling; The enum macro; Tasks
Parallel operationsDistributed arrays; A simple MapReduce; Executing commands; Running commands; Working with the filesystem; Redirection and pipes; Perl one-liners; Summary; Chapter 5: Working with Data; Basic I/O; Terminal I/O; Disk files; Text processing; Binary files; Structured datasets; CSV and DLM files; HDF5; XML files; DataFrames and RDatasets; The DataFrames package; DataFrames; RDatasets; Subsetting, sorting, and joining data; Statistics; Simple statistics; Samples and estimations; Pandas; Selected topics; Time series; Distributions; Kernel density; Hypothesis testing; GLM; Summary
Chapter 6: Scientific Programming

Sommario/riassunto

This hands-on guide is aimed at practitioners of data science. The book assumes some previous skills with Julia and skills in coding in a scripting language such as Python or R, or a compiled language such as C or Java.