

1. Record Nr.	UNINA9910153217503321
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Titolo	R data structures and algorithms : increase speed and performance of your applications with efficient data structures and algorithms // Dr. PKS Prakash, Achyutuni Sri Krishna Rao
Pubbl/distr/stampa	Birmingham, England ; ; Mumbai, [India] : , : Packt Publishing, , 2016 ©2016
ISBN	1-78646-416-0
Edizione	[1st edition]
Descrizione fisica	1 online resource (266 pages)
Disciplina	519.502855133
Soggetti	R (Computer program language) Data structures (Computer science)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Sommario/riassunto	Increase speed and performance of your applications with efficient data structures and algorithms About This Book See how to use data structures such as arrays, stacks, trees, lists, and graphs through real-world examples Find out about important and advanced data structures such as searching and sorting algorithms Understand important concepts such as big-o notation, dynamic programming, and functional data structured Who This Book Is For This book is for R developers who want to use data structures efficiently. Basic knowledge of R is expected. What You Will Learn Understand the rationality behind data structures and algorithms Understand computation evaluation of a program featuring asymptotic and empirical algorithm analysis Get to know the fundamentals of arrays and linked-based data structures Analyze types of sorting algorithms Search algorithms along with hashing Understand linear and tree-based indexing Be able to implement a graph including topological sort, shortest path problem, and Prim's algorithm Understand dynamic programming (Knapsack) and randomized algorithms In Detail In this book, we cover not only classical data structures, but also functional data structures. We begin by answering the fundamental question: why data structures? We then

move on to cover the relationship between data structures and algorithms, followed by an analysis and evaluation of algorithms. We introduce the fundamentals of data structures, such as lists, stacks, queues, and dictionaries, using real-world examples. We also cover topics such as indexing, sorting, and searching in depth. Later on, you will be exposed to advanced topics such as graph data structures, dynamic programming, and randomized algorithms. You will come to appreciate the intricacies of high performance and scalable programming using R. We also cover special R data structures such as vectors, data frames, and atomic vectors. With this easy-to-read book, you will be able to understand the power of linked lists, double linked lists, and circular linked lists. We will also explore the application of binary search and will go in depth into sorting algorithms such as bubble sort, selection sort, insertion sort, and merge sort. Style and approach This easy-to-read book with its fast-paced nature will improve the productivity of an R programmer and improve the performance of R applications. It is packed with real-world examples.
