Introductory R: A Beginner's Guide To Data Visualisation, Statistical Analysis And Programming In R

Introductory **R**

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Fully revised and expanded version
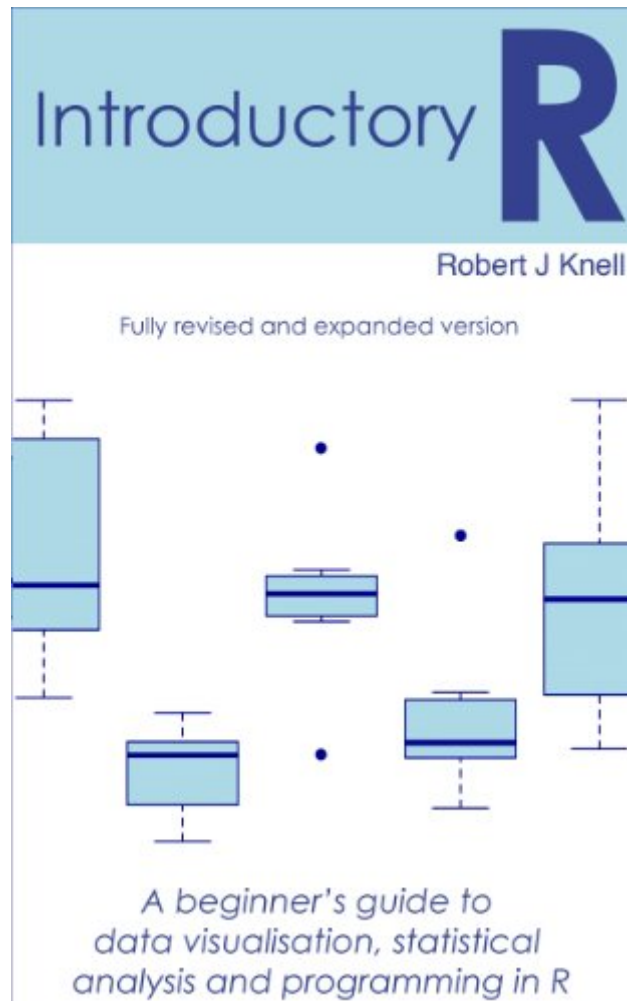
A beginner's guide to data visualisation, statistical analysis and programming in R

Synopsis

R is now the most widely used statistical software in academic science and it is rapidly expanding into other fields such as finance. R is almost limitlessly flexible and powerful, hence its appeal, but can be very difficult for the novice user. There are no easy pull-down menus, error messages are often cryptic and simple tasks like importing your data or exporting a graph can be difficult and frustrating. Introductory R is written for the novice user who knows a little about statistics but who hasn't yet got to grips with the ways of R. This new edition is completely revised and greatly expanded with new chapters on the basics of descriptive statistics and statistical testing, considerably more information on statistics and six new chapters on programming in R. Topics covered include1) A walkthrough of the basics of R's command line interface 2) Data structures including vectors, matrices and data frames3) R functions and how to use them4) Expanding your analysis and plotting capacities with add-in R packages5) A set of simple rules to follow to make sure you import your data properly6) An introduction to the script editor and advice on workflow7) A detailed introduction to drawing publication-standard graphs in R 8) How to understand the help files and how to deal with some of the most common errors that you might encounter.9) Basic descriptive statistics10) The theory behind statistical testing and how to interpret the output of statistical tests11) Thorough coverage of the basics of data analysis in R with chapters on using chi-squared tests, t-tests, correlation analysis, regression, ANOVA and general linear models12) What the assumptions behind the analyses mean and how to test them using diagnostic plots13) Explanations of the summary tables produced for statistical analyses such as regression and ANOVA14) Writing functions in R15) Using table operations to manipulate matrices and data frames16) Using conditional statements and loops in R programmes.17) Writing longer R programmes.The techniques of statistical analysis in R are illustrated by a series of chapters where experimental and survey data are analysed. There is a strong emphasis on using real data from real scientific research, with all the problems and uncertainty that implies, rather than well-behaved made-up data that give ideal and easy to analyse results.

Book Information

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Customer Reviews

Hello,First, there is much information available online about R, but much of the R literature is quite advanced. In addition, PhD statisticians, which write much of the R documentation, have a tendency to use very specific vocabulary words to describe a method. For the later reasons, the learning curve for the powerful open source R can be quite gradual when considering learning on the Y axis and Time on the X axis.This Introductory course provides an opportunity to understand a massive amount of R for computing statistics. It is written for beginners but actually provides very useful R tools. The book provides knowledge to quickly become proficient in R, which can be challenging. If you google R, you will find there is much information on the Internet about the process of importing data as an example. It appears that many struggle with the latter task. This task and more are explained in this introductory book in a logical step-wise process.Personally, I believe R, which is free and powerful, should be a part of every engineering and scientific statistical course. Why? As a chemical engineer, I have used statistics to optimize processes. Since validated statistical software was not distributed, I did my work in Microsoft Excel, which I was familiar with and I was rushed, but wish I would have known about well developed and introductory R documentation. This Introductory book would have been quite helpful.Also, I appreciate that Dr. Knell also suggests books for more complicated topics. I think most people, myself included, forget that our professors kindly lead our learning. As such, we did not have to review textbooks, etc. Although the Internet is useful in this process, one can still stumble upon a difficult read. Since Dr.

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