

# **Computational Analysis for Bioscientists**

**Data Analysis in R and what they forgot to teach you about computers!**

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# Welcome!

front page stuff

# 1 About this book

Who is this book for

bioscience

undergrads

It is in sections

part 1 what they forgot to teach you

part 2 Getting started with data. give summary

part 3 Data Analysis, improve name, give summary (babs 2)

## **Part I**

# **What they forgot to teach you about computers**

Why this part  
give a summary of contents

## 2 Understanding file systems

A file is a unit of storage on a computer with a name. The sort of information held in a file determines its file type. One of the simplest types of file is a “plain text file”

files of file plain text, markup and markdown

file extensions

the relationship between file extensions and programs

A file system contains files and folders

files systems are hierarchical

folder is a directory `getwd()`, `dir()` in R, `cd`, `pwd` in unix, `os.getcwd()` in Python

using a file explorer, showing file extensions

Paths

Working directory

Relative and absolute paths

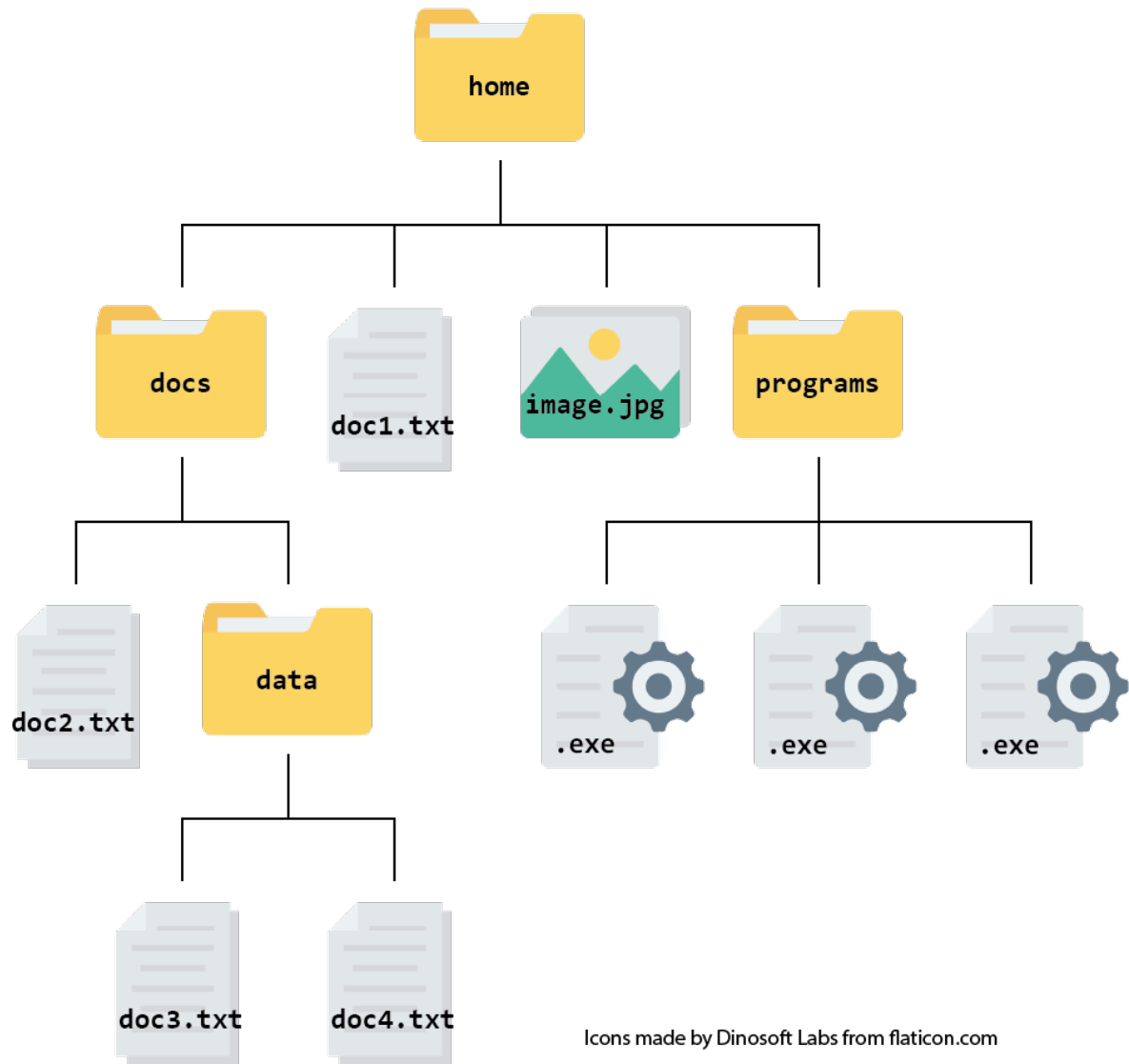


Figure 2.1: A file hierarchy containing 4 levels of folders and files



## **Part II**

# **Getting started with data**

- ideas about data - data types, types of variables, - distributions - the normal distribution
  - summarising, one variable, several variables - role in analysis - plot variables, one, two
  - tidy data
- Working with data in R Studio
  - what is R and Rstudio. Installing them
  - intro to rstudio, data types and data structures, scripts, project oriented workflow
  - using the help
  - Your first plot!
  - importing data, types of file, different methods
  - summarising data, one two,
  - More plots
  - saving plots
  - tidying data

## 3 Ideas about data

- ideas about data - data types, types of variables, - distributions - the normal distribution
  - summarising, one variable, several variables - role in analysis - plot variables, one, two
  - tidy data

## 4 Working with data in RStudio

- Working with data in R Studio
  - what is R and Rstudio. Installing them
  - intro to rstudio, data types and data structures, scripts, project oriented workflow
  - using the help
  - Your first plot!
  - importing data, types of file, different methods
  - summarising data, one two,
  - More plots
  - saving plots
  - tidying data

## 5 Summary

In summary, this book has no content whatsoever.

## References