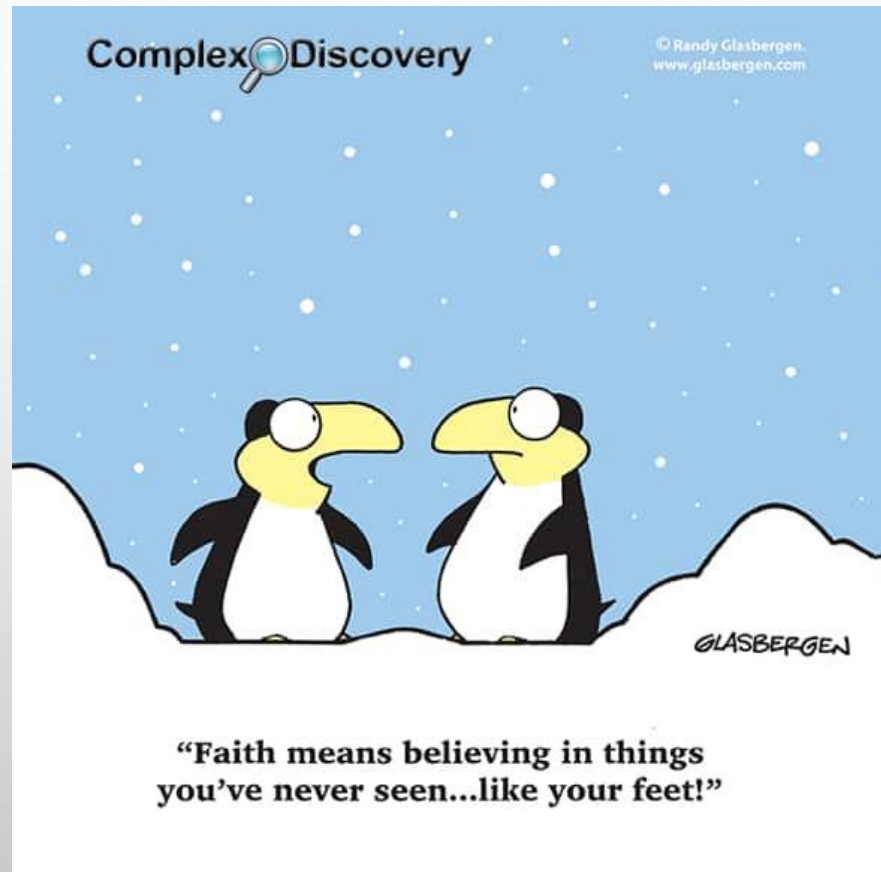




BEFORE WE START

WARNING: IN ANY GIVEN WEEK... I ASSUME THAT EVERYTHING I TOLD YOU IN PREVIOUS WEEKS THAT YOU SHOULD DO, YOU ACTUALLY DID...!



Reminder: sometimes it is not obvious where to find stuff in Fenix...

Gestão de Páginas

The screenshot displays the 'Gestão de Páginas' (Page Management) interface in Fenix. On the left, a tree view shows the site structure. The 'Aulas' (Classes) folder is expanded, and 'Aula1' is selected. Below it, the 'Outros Recursos' (Other Resources) folder is also expanded, showing a sub-folder 'PDFs' containing several documents. On the right, the 'Aula1' page editor is shown. It has tabs for 'Página', 'Ficheiros' (Files), 'Permissões' (Permissions), and 'Link'. The 'Ficheiros' tab is active, showing a list of files. A table lists the files with their IDs, names, and permissions. Three files are highlighted with green boxes, and blue arrows point from the 'PDFs' folder in the left tree to these files in the table.

#	Nome	Permissões
1	Ecological models – their form and function <i>Ecological models their form and function _ Kararehe Kino Issue 17 _ Manaaki Whenua - Landcare Research.pdf</i>	Público
2	Regras da comunicação por e-mail <i>ComPortMail.pdf</i>	Público
3	The Limits to Models in Ecology <i>Memica.pdf</i>	Público
4	A Tutorial for Understanding Ecological Modeling Papers for the Non Modeller <i>ae45-0040.pdf</i>	Público
5	Slides da Aula 1 <i>A1 ME.pptx</i>	Público

READ FOR DISCUSSION

Research

Modelling ecological systems in a changing world

Matthew R. Evans^{*,†}

*Centre for Ecology and Conservation, School of Biosciences, University of Exeter, Cornwall Campus,
Penryn, Cornwall TR10 9EZ, UK*

Gestão de Páginas

- ▼ Modulação Ecológica
 - Modulação Ecológica(Ecologia Marinha)
 - Modulação Ecológica(Ecologia e Gestãc
- ▼ Aulas
 - Aula1
 - Aula2
 - Aula3
- ▼ Outros Recursos
 - ▼ PDFs
 - Ecopath
 - Jorgensen&Fath
 - Developments In Ecological Mode
 - R Cheat Sheets

PDFs

Página **Ficheiros 2** Permissões Link

Adicionar Ficheiro

#	Nome
1	Modelling ecological systems in a changing world <i>Evans2012.pdf</i>
2	Ecological Models and Data in R <i>Bolker2007.pdf</i>

An additional task!

Gestão de Páginas

- ▼ Modelação Ecológica
 - Modelação Ecológica(Ecologia Marinha)
 - Modelação Ecológica(Ecologia e Gestão Ambiental)
 - ▼ Aulas
 - ▼ Aula1
 - PDFs
 - Aula2
 - Aula3
 - ▼ Aula4
 - A task about merge
 - ▼ Outros Recursos
 - ▼ PDFs
 - Ecopath
 - Jorgensen&Fath
 - Developments In Ecological Models
 - R Cheat Sheets

+ Criar

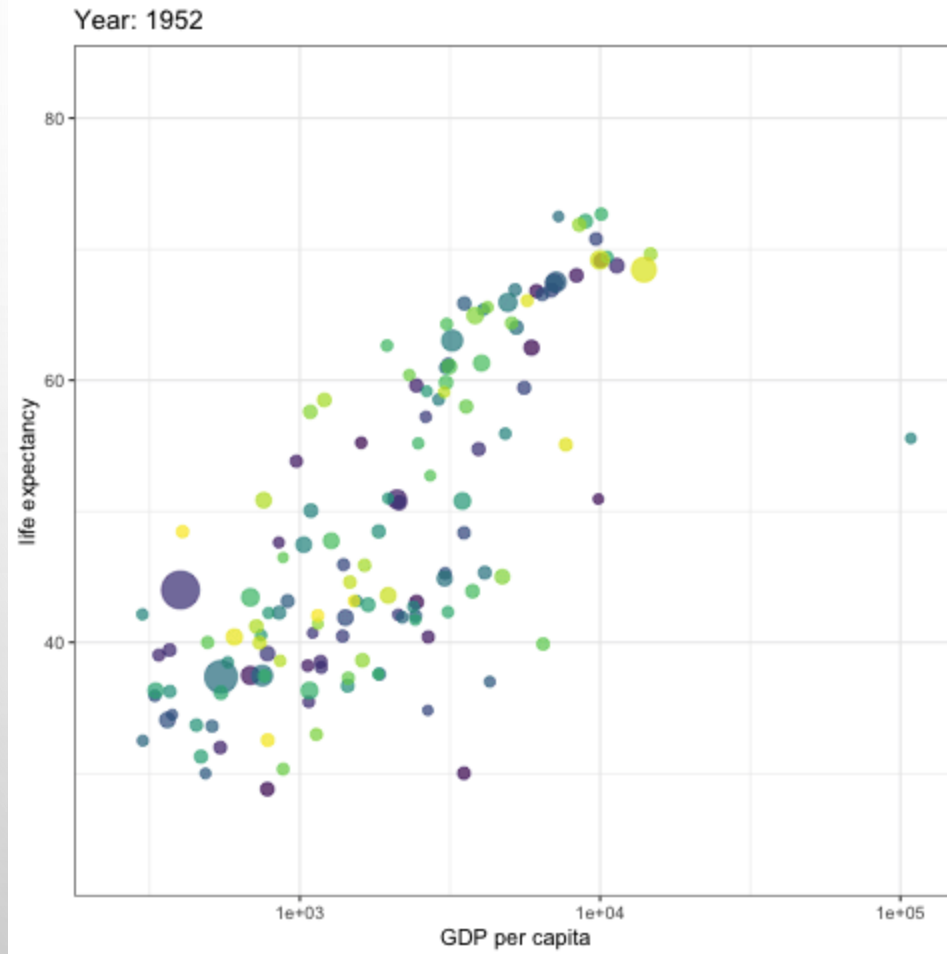
A task about merge

Página **Ficheiros 7** Permissões Link

Adicionar Ficheiro

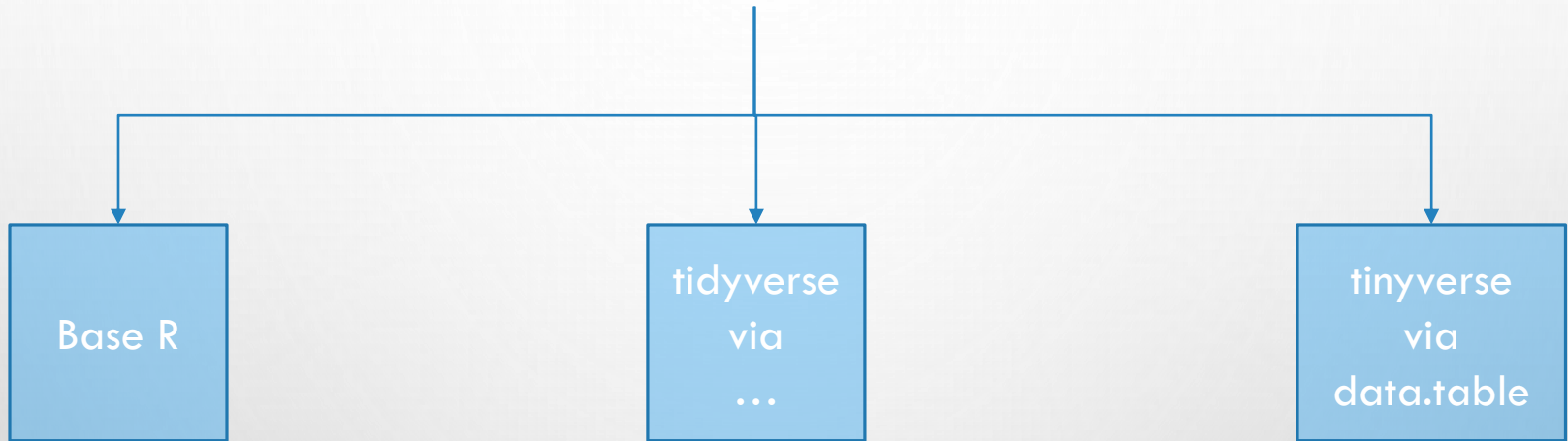
#	Nome	Permissões
1	Data4merge.xlsx	Público
2	peixes.bt	Público
3	medidasA.bt	Público
4	Read me to understand the task TaskAboutMerging.pptx	Público
5	medidasI.txt	Público
6	medidasM.bt	Público
7	medidasMA.bt	Público

ggplot2 becomes...animated: gganimate



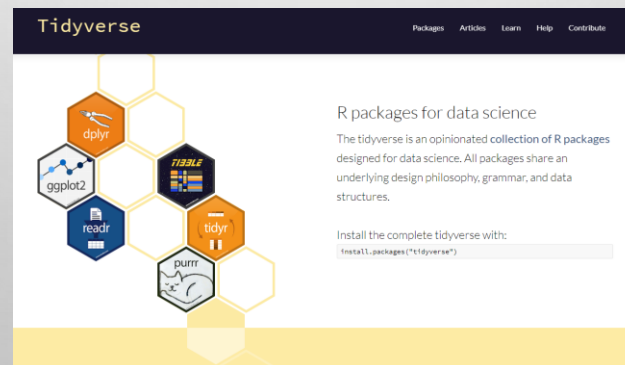
DATA IMPORT AND WRANGLING

Several possible options



<https://www.tidyverse.org/>

<http://www.tinyverse.org>



DATA IMPORT

The screenshot displays the RStudio interface with the following components:

- Source Editor:** Contains R code:

```
1 obj2<-c(2,5,-0.2,89,12,-3,-5.4)
2 summary(obj2)
3
```
- Environment Pane:** Shows a context menu for 'Import Dataset' with options: From Text (base)..., From Text (readr)..., From Excel..., From SPSS..., From SAS..., and From Stata... The Environment pane itself is empty, displaying 'Environment is empty'.
- Console/Terminal:** Shows the R version and copyright information, followed by a list of help topics:

```
R version 3.6.0 (2019-04-26) -- "Planting of a Tree"
Copyright (C) 2019 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> |
```
- Files Pane:** Shows a file explorer view of the 'Home' directory with a table of files and folders.

Name	Size	Modified
.RData	80.4 KB	Apr 5, 2019, 5:18 PM
.Rhistory	13.2 KB	May 16, 2019, 2:56 PM
aula1.html	630 KB	Sep 20, 2019, 11:30 AM
aula1.Rmd	1.3 KB	Sep 20, 2019, 11:30 AM
Aula3TP4.html	840.3 KB	Oct 10, 2018, 9:36 AM
Aula3TP4.Rmd	2.3 KB	Oct 10, 2018, 9:36 AM
Aula3TP4TP12.html	780.6 KB	Oct 12, 2018, 11:20 AM
Aula3TP4TP12.Rmd	2.1 KB	Oct 12, 2018, 11:20 AM
cars.txt	600 B	Feb 17, 2019, 10:44 AM
ChatLog_K_CARMHHA HA Workshop_June 18_20_ALL DAY_2019_06_19_17_42.rtf	1.1 KB	Jun 19, 2019, 5:42 PM
class3.html	629.3 KB	Sep 24, 2019, 3:01 PM
class3.Rmd	1.1 KB	Sep 24, 2019, 3:01 PM
Custom Office Templates		
EcolNumT2.pdf	2.7 MB	Sep 19, 2018, 12:01 PM
FN4ila2TP.html	640.4 KB	Sep 23, 2019, 4:48 PM

Tidyverse

Packages Articles Learn Help Contribute

R packages for data science

The tidyverse is an opinionated collection of R packages designed for data science. All packages share an underlying design philosophy, grammar, and data structures.

Install the complete tidyverse with:

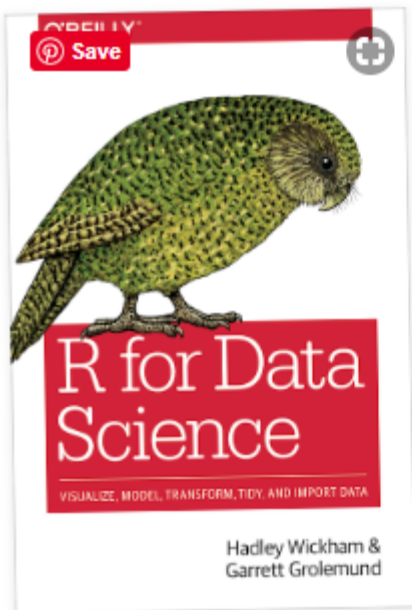
```
install.packages("tidyverse")
```

Learn the tidyverse

See how the tidyverse makes data science faster, easier and more fun with "R for Data Science". Read it online, buy the book or try another resource from the

Building Tidy Tools Workshop

Learn the tidyverse



R for data science

The best place to start learning the tidyverse is [R for Data Science](#) (R4DS for short), an O'Reilly book written by Hadley Wickham and Garrett Golemund. It's designed to take you from knowing nothing about R or the tidyverse to having all the basic tools of data science at your fingertips. [You can read it online for free](#) or buy a physical copy.

We highly recommend pairing R4DS with the [RStudio cheatsheets](#). These cheatsheets have been carefully designed to pack a lot of information into a small amount of space. You can keep them handy at your desk and quickly jog your memory when you get stuck. Most of the cheatsheets have been translated into multiple languages.

<http://www.tinyverse.org>

Lightweight is the right weight

Dependencies matter. Every dependency you add to your project is an invitation to break your project.

You send that invitation to the direct dependency author, and every downstream author. Add dependencies with care. Evaluate the trade-offs between depending on another package/library and using existing functionality.

When you choose to depend on other projects, consider whether you will use the dependency in standard and common ways. You may want to look for an alternative if you would test the boundaries of its' functionality.

Though the title is dramatic, [Code dependencies are the devil](#) provides a great overview of why dependencies should be added with care. It contains a set of questions to help you evaluate whether to add a project as a dependency.

[Dirk Eddelbuettel](#) wrote about [dependency woes](#) he experienced. He also includes examples of others' experiences.

[Scott Chamberlain](#) published a very nice blog post on [limiting dependencies in R package development](#). Be sure to read the references as well.

[Dirk Eddelbuettel](#) took a great short introduction into [getting started in R](#) by [Saghir Bashir](#) and modified it to create a [tinyverse edition](#) that has a careful focus on dependency use.

[Russ Cox](#) offers a thoughtful essay entitled [Our Software Dependency Problem](#) detailing the (current) lack of best practices and tools to take full advantage of the (enormous) benefits available from responsible code reuse via carefully chosen dependencies.

[HTTPS://CRAN.R-
PROJECT.ORG/WEB/PACKAGES/DATA.TABLE
/VIGNETTES/DATATABLE-INTRO.HTML](https://cran.r-project.org/web/packages/data.table/vignettes/datatable-intro.html)

Introduction to data.table

2019-03-28

This vignette introduces the `data.table` syntax, its general form, how to *subset rows*, *select and compute* on columns, and perform aggregations *by group*. Familiarity with `data.frame` data structure from base R is useful, but not essential to follow this vignette.

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

MODELAÇÃO ECOLÓGICA

Class 4 / Aula 4

25 10 2019

Default: Theoretical exam 50% and practical exam 50%

ASSESSMENT PROPOSAL

- MINI PRACTICAL WORK WITH OWN DATA – 10% (GROUPS OF 3)
- PRACTICAL WORK MECOCO – 20 % (GROUPS OF 1) (ASIDE: WITH THE POTENCIAL TO WRITE A JOINT PAPER, NOT FOR THE ASSESSMENT, BUT CERTAINLY A PLUS)
- PRACTICAL MODELLING WORK (OWN DATA OR DATA FROM OTHERS) – 40 % (GROUPS OF 4, 4 PAGES, ORAL PRESENTATION 10 MINS)
- WORK ON A MODEL OF YOUR CHOICE, THEORETICAL VEINED, USING AN EXAMPLE PAPER (OF STUDENTS CHOICE, BUT SUBJECT TO PREVIOUS AGREEMENT FROM TEACHER) – 20 % (GROUPS OF 4, 4 PAGES + ORAL PRESENTATION 10 MINS)
- DIA DA MODELAÇÃO ECOLÓGICA / ECOLOGICAL MODELLING DAY II – 10% ??

WE (YES...) CONTINUE ON THE HANDS-ON TUTORIAL

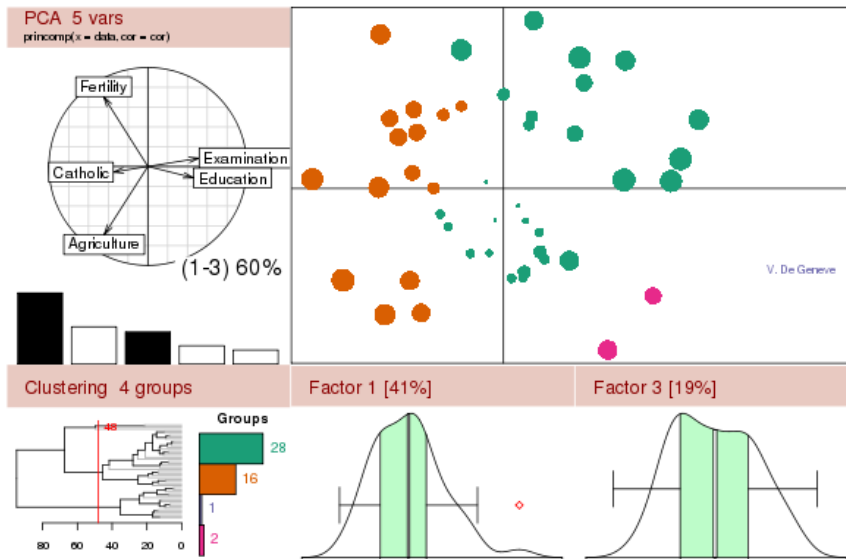
A hands-on tutorial on R and R Studio

Modelação Ecológica 2019/2020

Tiago A. Marques

September 18, 2019

The R Project for Statistical Computing



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But this is the last day on it – from now on, I assume you master R and handling data in R