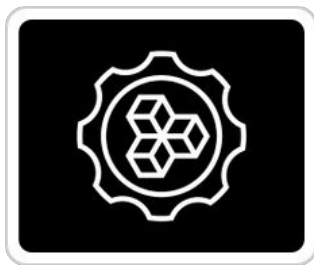


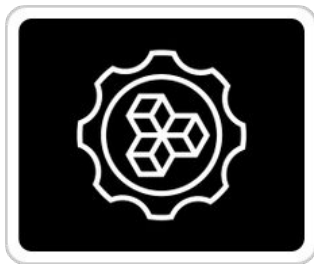
The open Teach-R project workshop: creating fun R courses!



moz://a festival

Marcos Vital
UFAL, Brazil

The open Teach-R project workshop: creating fun R courses!



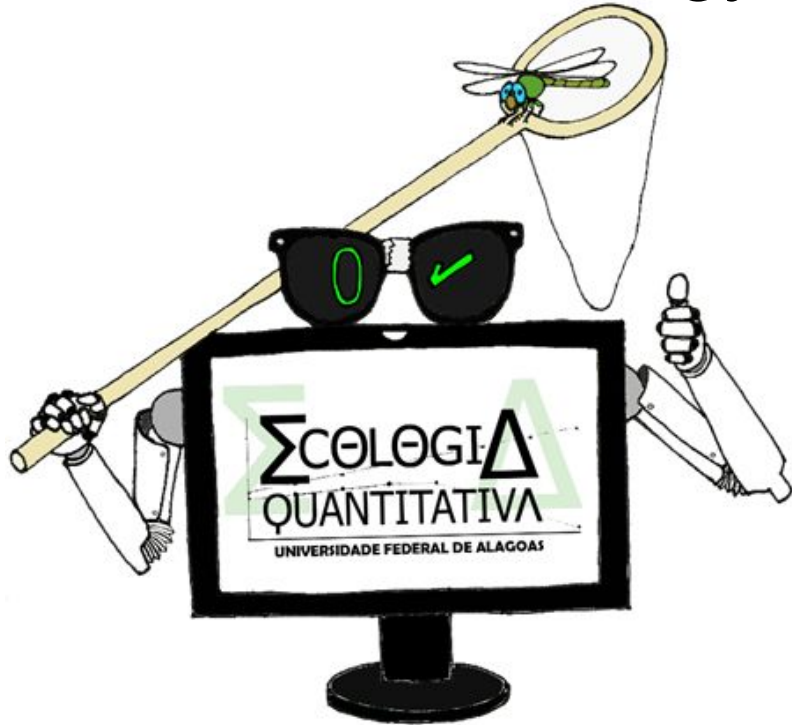
moz://a festival



Marcos Vital
UFAL, Brazil

About us

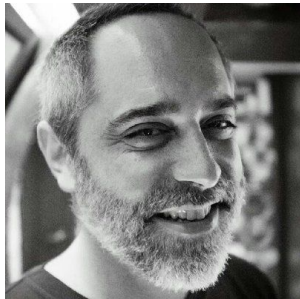
Quantitative ecology lab



Why am I here?!

moz://a

Open Leaders



“Build, gather and organize courseware for anyone willing to offer a R based course for biological sciences students and researchers”

About this session

- A little bit more about R and teaching it ‘blah blah blah’
- Discussion and writing down
- Summarize and next steps

Little bit more on R



The R Project for Statistical Computing

- Open source.
- Good for reproducible analysis.
- Notebooks, blog posting, manuscripts...
- Tons of ready to use functions for statistics!

Little bit more on R



The R Project for Statistical Computing

- Open source.
- Good for reproducible analysis.
- Notebooks, blog posting, manuscripts...
- Tons of ready to use functions for statistics!



Open Science



Brazilian undergrads on Biology

- Poor math and statistics prep from high school. :(
- No programming logic background. D:
- Difficulties, fear and even hate towards learning that! :O

Brazilian undergrads on Biology

- Poor math and statistics prep from high school. :(
- No programming logic background. D:
- Difficulties, fear and even hate towards learning that! :O



My two takes on teaching R and biostats

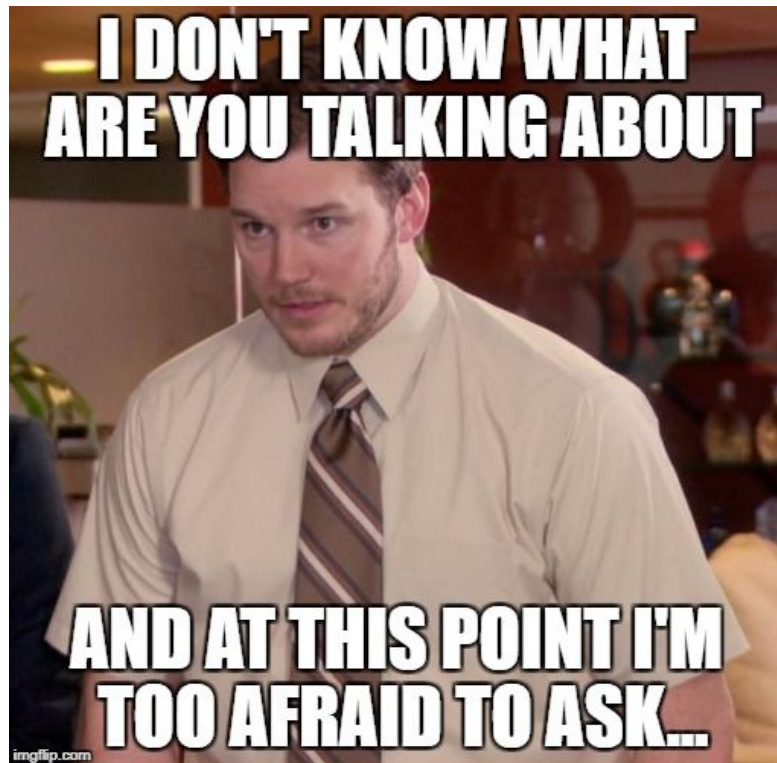
- Avoid technical details at first.
- Jump straight to practical stuff!

Technical details, that's what I'm talking about:

- 2.1.8 Factors
- 2.2 Logical operations
 - 2.2.1 `TRUE` and `T` with `FALSE` and `F`
 - 2.2.2 Testing for equality with real numbers
 - 2.2.3 Equality of floating point numbers using `all.equal`
 - 2.2.4 Summarizing differences between objects using `all.equal`
 - 2.2.5 Evaluation of combinations of `TRUE` and `FALSE`
 - 2.2.6 Logical arithmetic
- 2.3 Generating sequences
 - 2.3.1 Generating repeats
 - 2.3.2 Generating factor levels
- 2.4 Membership: Testing and coercing in R
- 2.5 Missing values, infinity and things that are not numbers
 - 2.5.1 Missing values: `NA`
- 2.6 Vectors and subscripts
 - 2.6.1 Extracting elements of a vector using subscripts
 - 2.6.2 Classes of vector
 - 2.6.3 Naming elements within vectors
 - 2.6.4 Working with logical subscripts

Technical details, that's what I'm talking about:

- 2.1.8 Factors
- 2.2 Logical operations
 - 2.2.1 `TRUE` and `T` with `FALSE` and `F`
 - 2.2.2 Testing for equality with real numbers
 - 2.2.3 Equality of floating point numbers using `all.equal`
 - 2.2.4 Summarizing differences between objects using `all.equal`
 - 2.2.5 Evaluation of combinations of `TRUE` and `FALSE`
 - 2.2.6 Logical arithmetic
- 2.3 Generating sequences
 - 2.3.1 Generating repeats
 - 2.3.2 Generating factor levels
- 2.4 Membership: Testing and coercing in R
- 2.5 Missing values, infinity and things that are not numbers
 - 2.5.1 Missing values: `NA`
- 2.6 Vectors and subscripts
 - 2.6.1 Extracting elements of a vector using subscripts
 - 2.6.2 Classes of vector
 - 2.6.3 Naming elements within vectors
 - 2.6.4 Working with logical subscripts



Going for practical stuff!

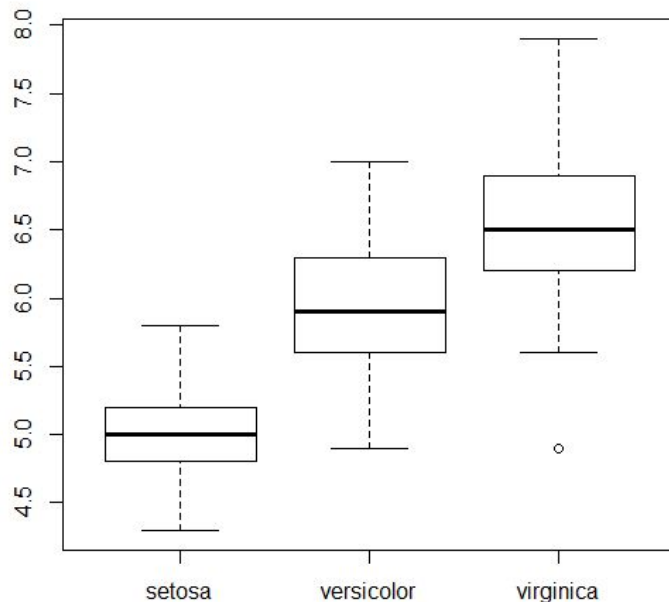
R Sem nome - Editor R

```
#Loading example data:  
data(iris)  
  
#Taking a quick look at it:  
summary(iris)  
  
#Creating a simple boxplot:  
boxplot(Sepal.Length~Species, data=iris)
```

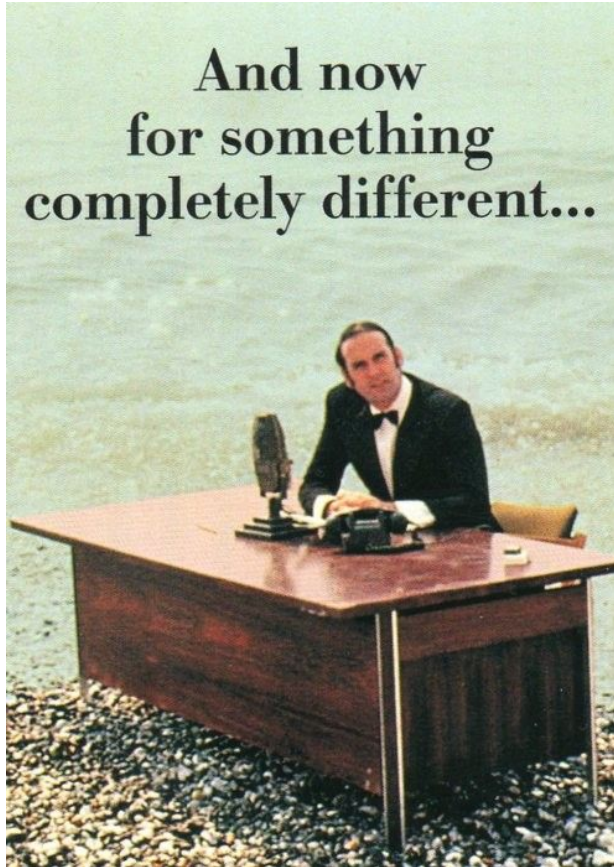
R Console

```
> summary(iris)  
   Sepal.Length   Sepal.Width   Petal.Length  
Min.   :4.300     Min.   :2.000     Min.   :1.0  
1st Qu.:5.100     1st Qu.:2.800     1st Qu.:1.0  
Median :5.800     Median :3.000     Median :4.0  
Mean   :5.843     Mean   :3.057     Mean   :3.0  
3rd Qu.:6.400     3rd Qu.:3.300     3rd Qu.:5.0  
Max.   :7.900     Max.   :4.400     Max.   :6.0  
>
```

R Graphics: Device 2 (ACTIVE)



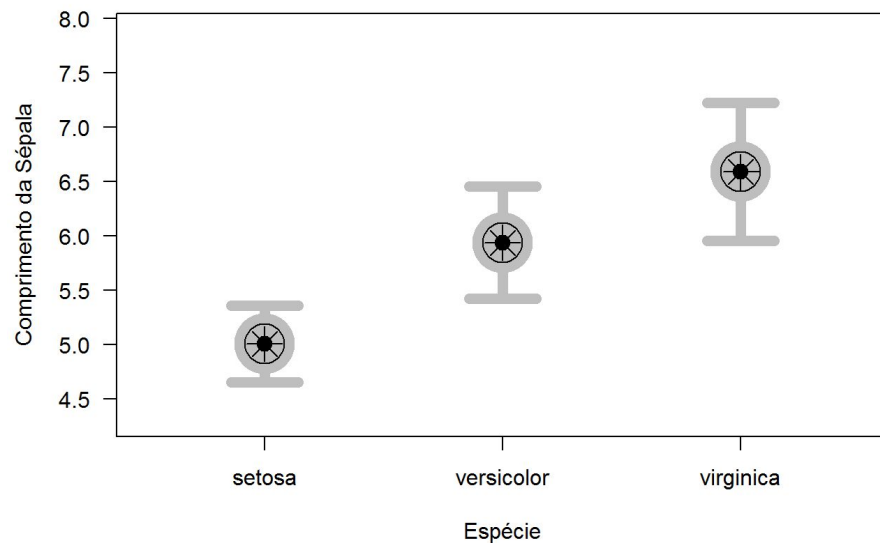
On this session: a third path



**Cool, funny, unexpected examples
and usages!**

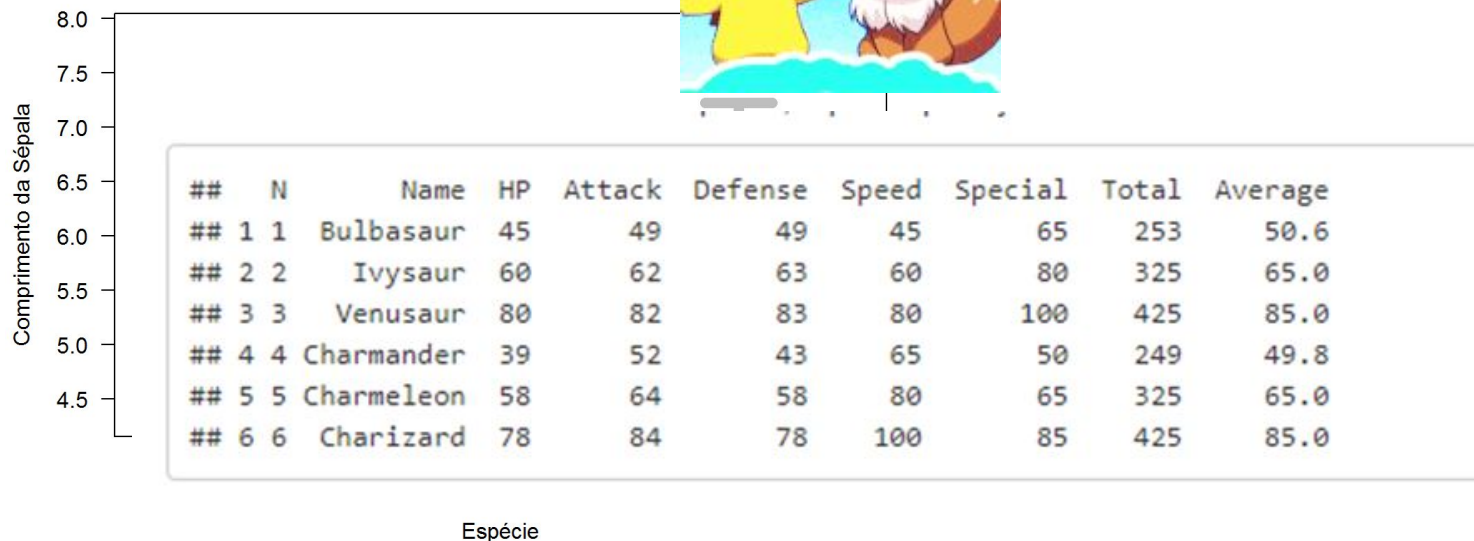
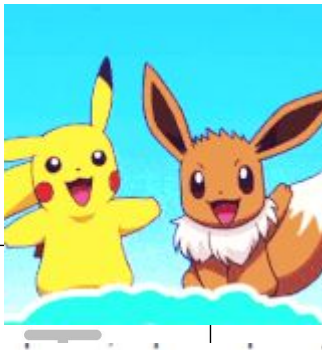
For something completely different...

**TIE
PLOTS**



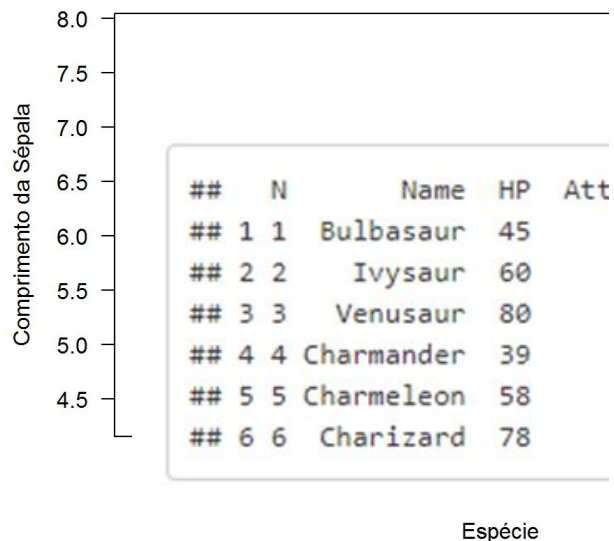
For something completely different...

TIE
PLOTS



For something completely different...

TIE PLOTS



always take
look live when
end game
your there alone gone
dark and the life
hill hard man kill
yeah time fear
run someone

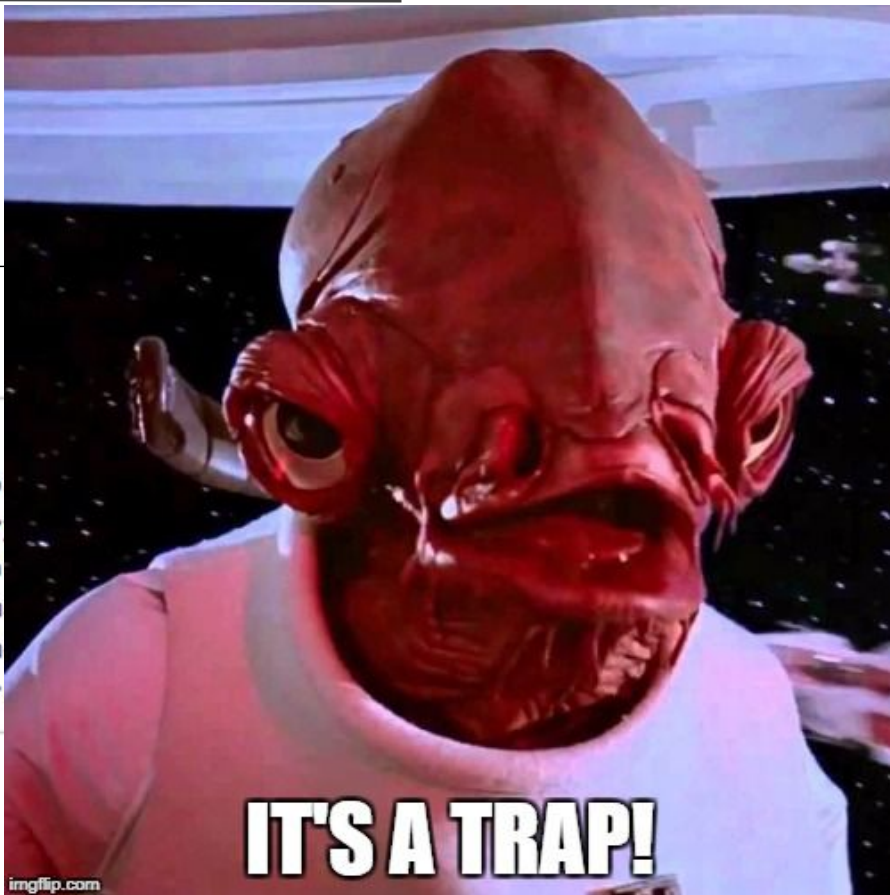
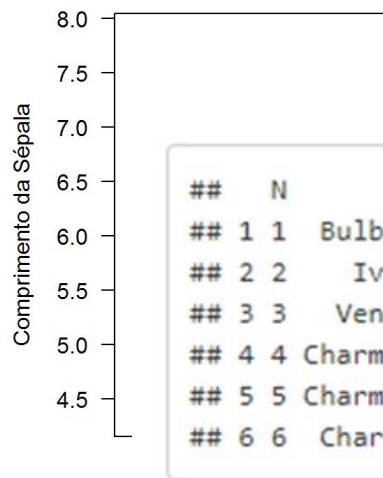
Iron Maiden

sweat
your dark you
the rictus
play battle beat goin dead
see sword spadewhat
dinsteel know way
forev shield gonna
ace deaf stalem bone
feel just lose get
move grin make
overkill

Motorhead

For something completely different...

TIE PLOTS



sweat
your dark you
the rictus
play battl beat goin dead
spade what
see sword know way
dinsteel shield gonna
forev deaf stale bone
ace back late cut
feel just lose get
move grin make
overkill
Motorhead

What I would like for you to do now:

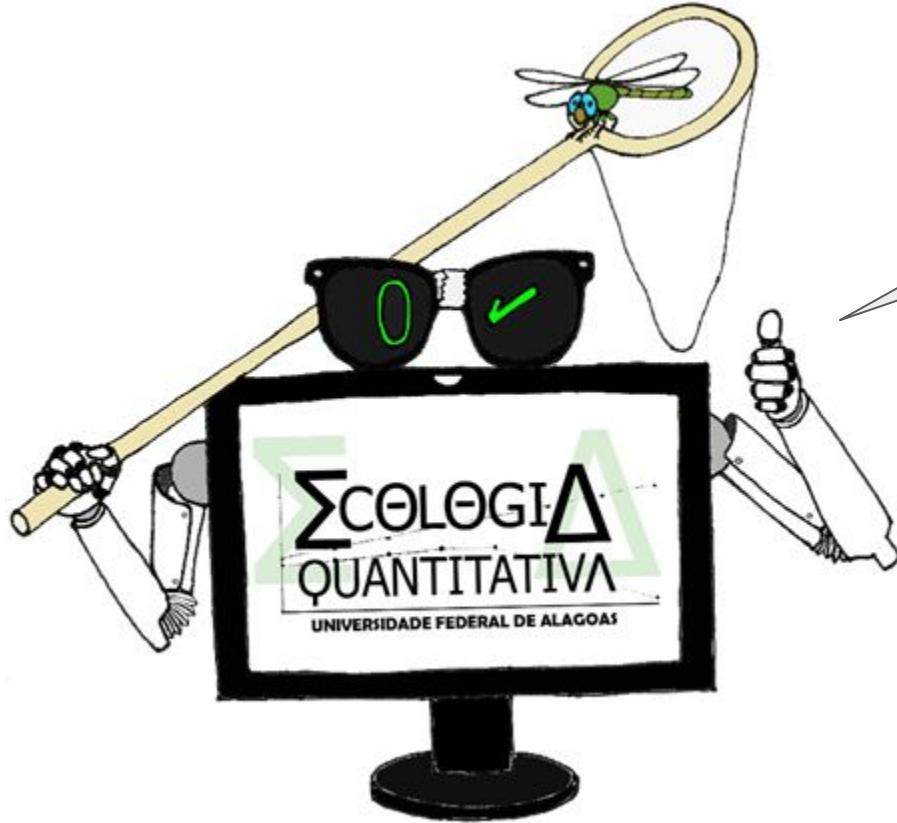
Three groups:

- What are the major barriers for learning or teaching R?
- What are the most important stuff to learn or teach about it?
- What kind of cool and unexpected examples we should use?

So, what's next?

- Teach-R project repo here:
github.com/marcosvital/teach-R-project
- New repo for fun stuff here:
github.com/marcosvital/teach-r-fun
- Report about this session coming soon!
- Write me: **[marcosvital at gmail.com](mailto:marcosvital@gmail.com)**
- Or tweet me: **[@marcosvcvital](https://twitter.com/marcosvcvital)**

I love you all! :3



Thank you!