Ferramentas de bioinformática para facilitar a vida do pesquisador

Maria Jara Montibeller

github.com/MariaJaraMontibeller

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MariaJaraMontibeller / README.md

Hi! I'm Jara 👩

- 🧬 I'm currently working with Bioinformatic and Metagenomic
- 🌱 I'm a Data Science Student at the UNIVESP

Now I'm learning...

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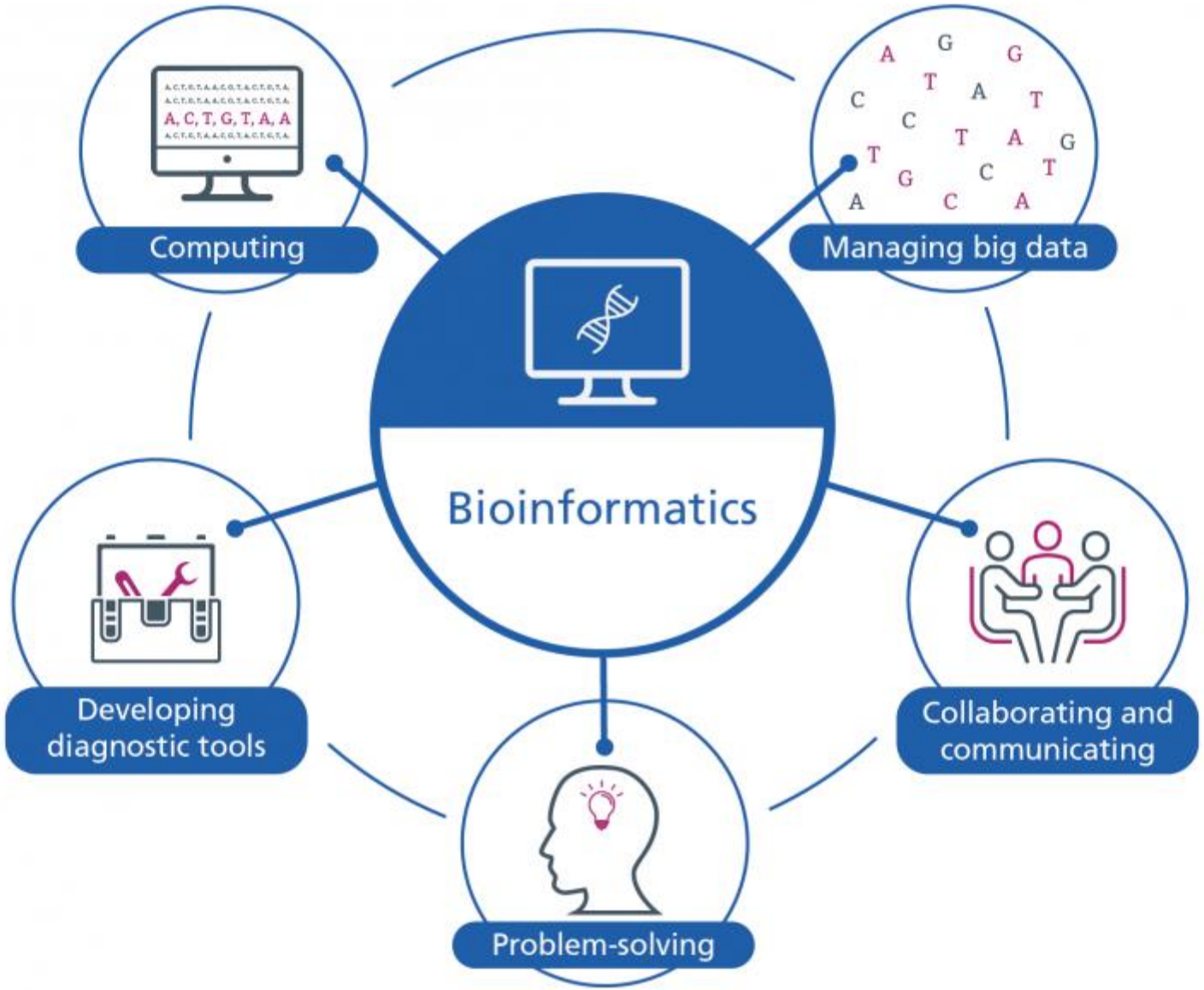


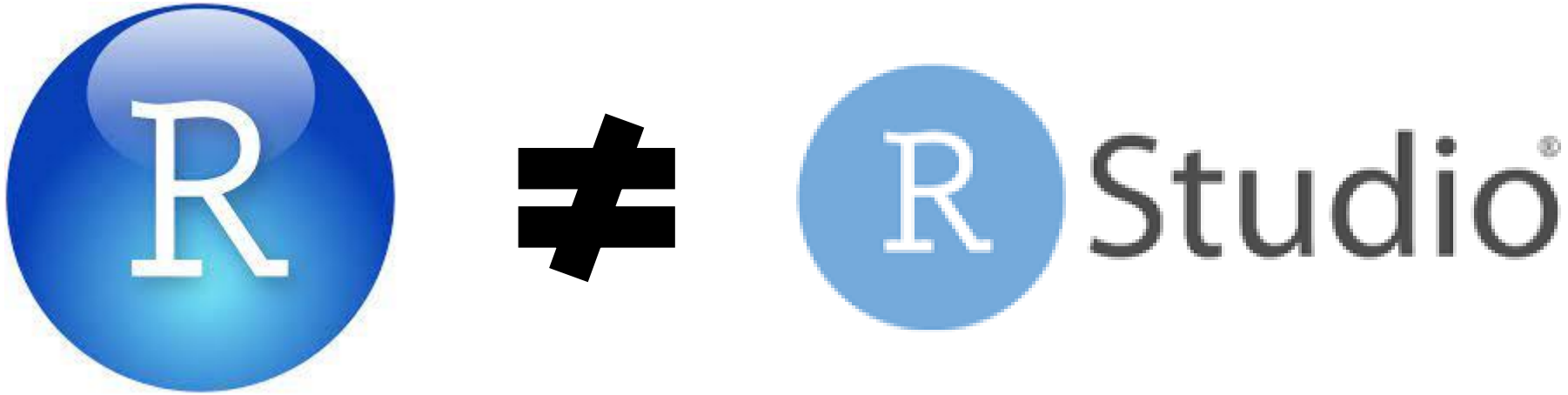
https://www.genomicseducation.hee.nhs.uk/education/core-concepts/what-is-bioinformatics/

Minha trilha de estudos para Data Science

Cursos, podcasts, canais do YouTube & tudo mais que usei na missão do primeiro emprego na área.

Letícia Gerola · Follow

Published in Joguei os Dados · 7 min read · Jul 30, 2020


R
≠
R Studio

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function | Addins | Project: (None)

Untitled2*

Source on Save | Run | Source

```
1  # Cabeçalho
2  head(iris)
3
4  #Média do Comprimento da Pétala
5  Media<- mean(iris$Petal.Length)
6  Media
7
8  #Mediana
9  median(iris$Pe
10
11 #Variância
12 var(iris$Petal.Length)
13
14 #Histograma do Comprimento da Pétala
15 hist(iris$Petal.Length, main = "Compri              a", xlab = "Petal.Length")
16
```

Editor de Código

16:1 (Top Level) R Script

Console Markers

```
> # Cabeçalho
> head(iris)
  Sepal.Length Sepal.Width Petal.Length Petal.Width Species
1          5.1         3.5          1.4         0.2  setosa
2          4.9         3.0          1.4         0.2  setosa
3          4.7         3.2
4          4.6         3.1
5          5.0         3.6
6          5.4         3.9
> #Média do Comprimento da
> Media<- mean(iris$Petal.
> Media
[1] 3.758
> #Mediana
> median(iris$Petal.Length)
[1] 4.35
> #Variância
```

Console

Environment History Connections

Import Dataset | List

Global Environment

Values

Media	3.758

Histórico

Files Plots Packages Help Viewer

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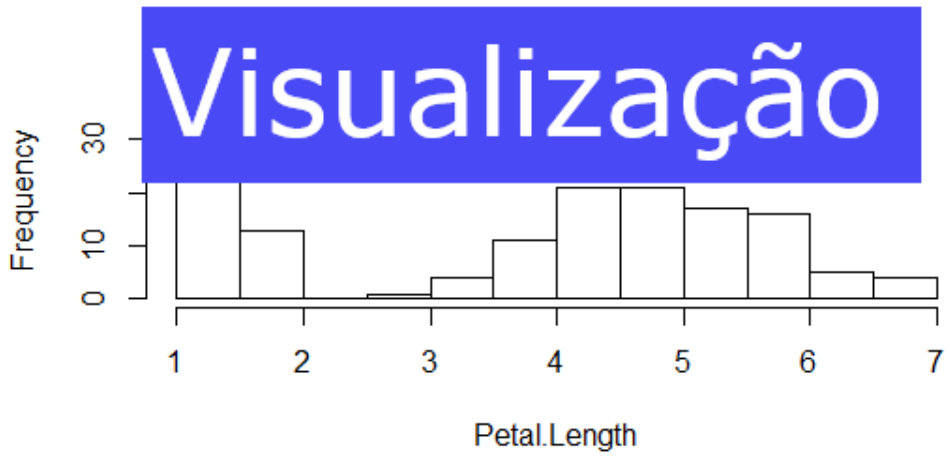


https://www.est.ufmg.br/~cristianocs/Pacotes2021/Intro.html#6

Práticas de hoje

- Construção de gráfico;
- Análise estatística;
- Análise filogenética;
- Análise de qualidade de dados de arquivos fasta.q.

Vaccination data

Download links: https://covid19.who.int/who-data/vaccination-data.csv

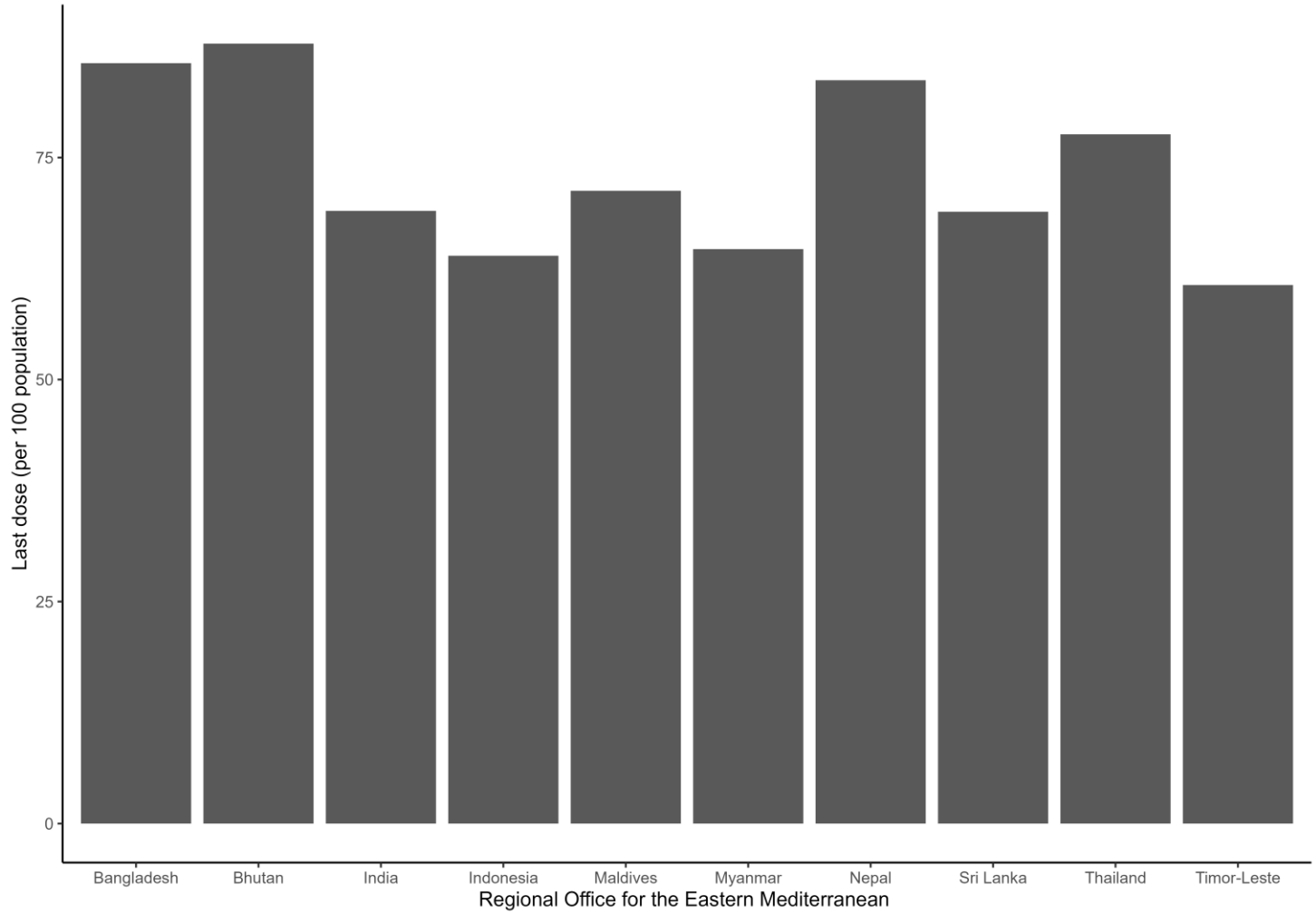
Field name	Type	Description
COUNTRY	String	Country, territory, area
ISO3	String	ISO Alpha-3 country code
WHO_REGION	String	WHO regional offices: WHO Member States are grouped into six WHO regions: Regional Office for Africa (AFRO), Regional Office for the Americas (AMRO), Regional Office for South-East Asia (SEARO), Regional Office for Europe (EURO), Regional Office for the Eastern Mediterranean (EMRO), and Regional Office for the Western Pacific (WPRO).
DATA_SOURCE	String	Indicates data source: - REPORTING: Data reported by Member States, or sourced from official reports - OWID: Data sourced from Our World in Data:

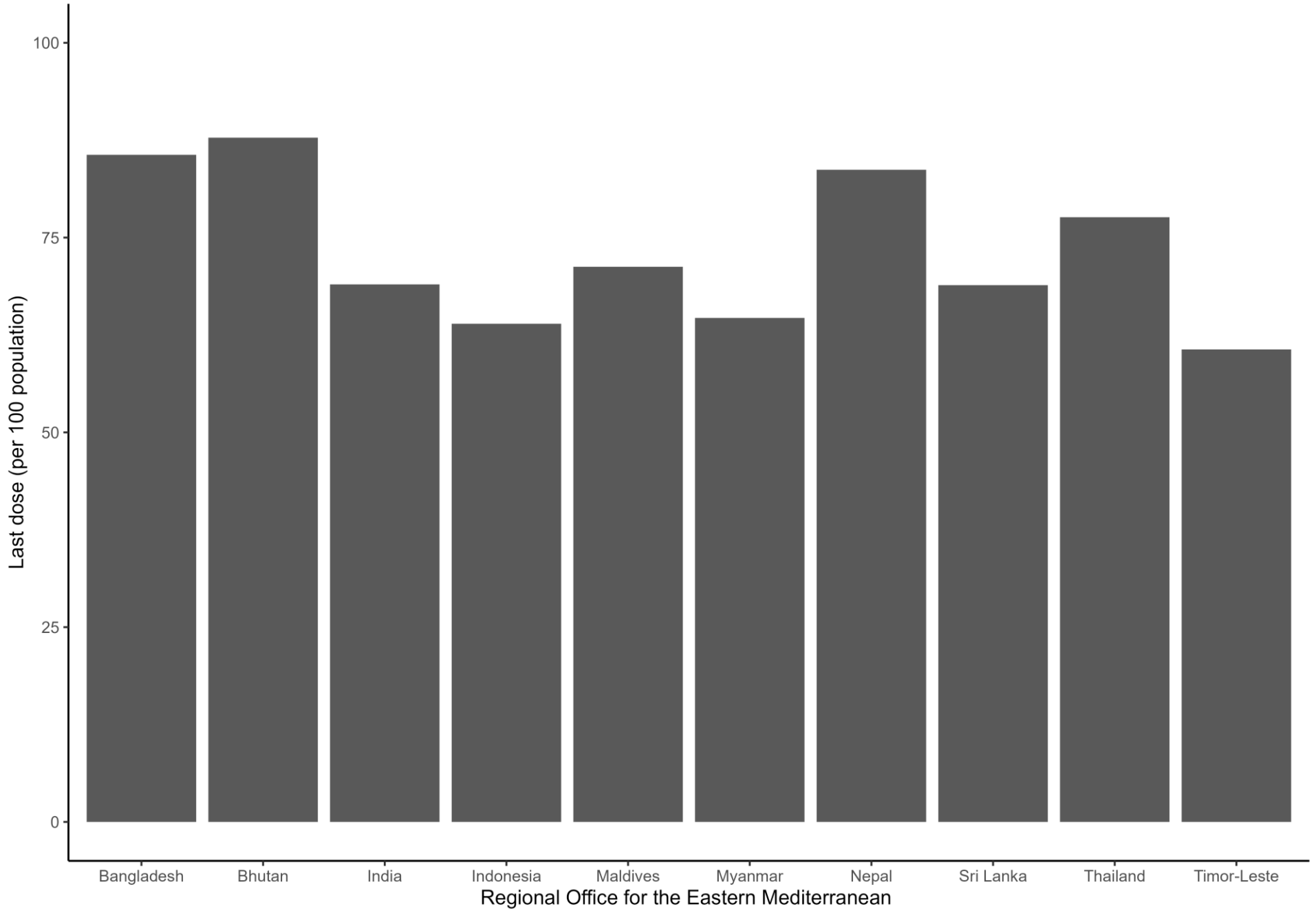
World Health Organization

WHO regional offices: WHO Member States are grouped into six WHO regions:

- Regional Office for Africa (AFRO),
- Regional Office for the Americas (AMRO),
- Regional Office for South-East Asia (SEARO),
- Regional Office for Europe (EURO),
- Regional Office for the Eastern Mediterranean (EMRO),
- Regional Office for the Western Pacific (WPRO).

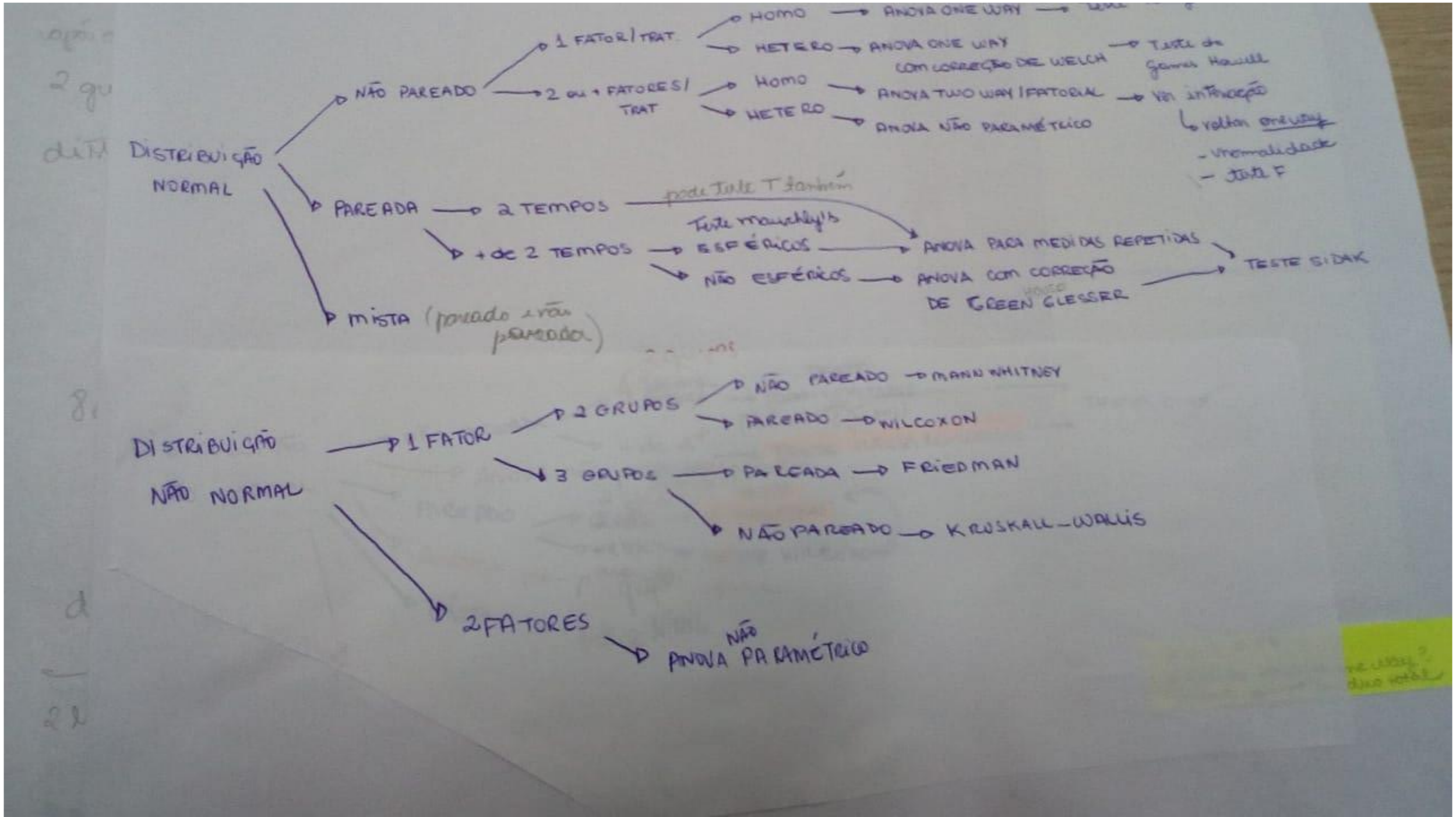
Construção de gráfico



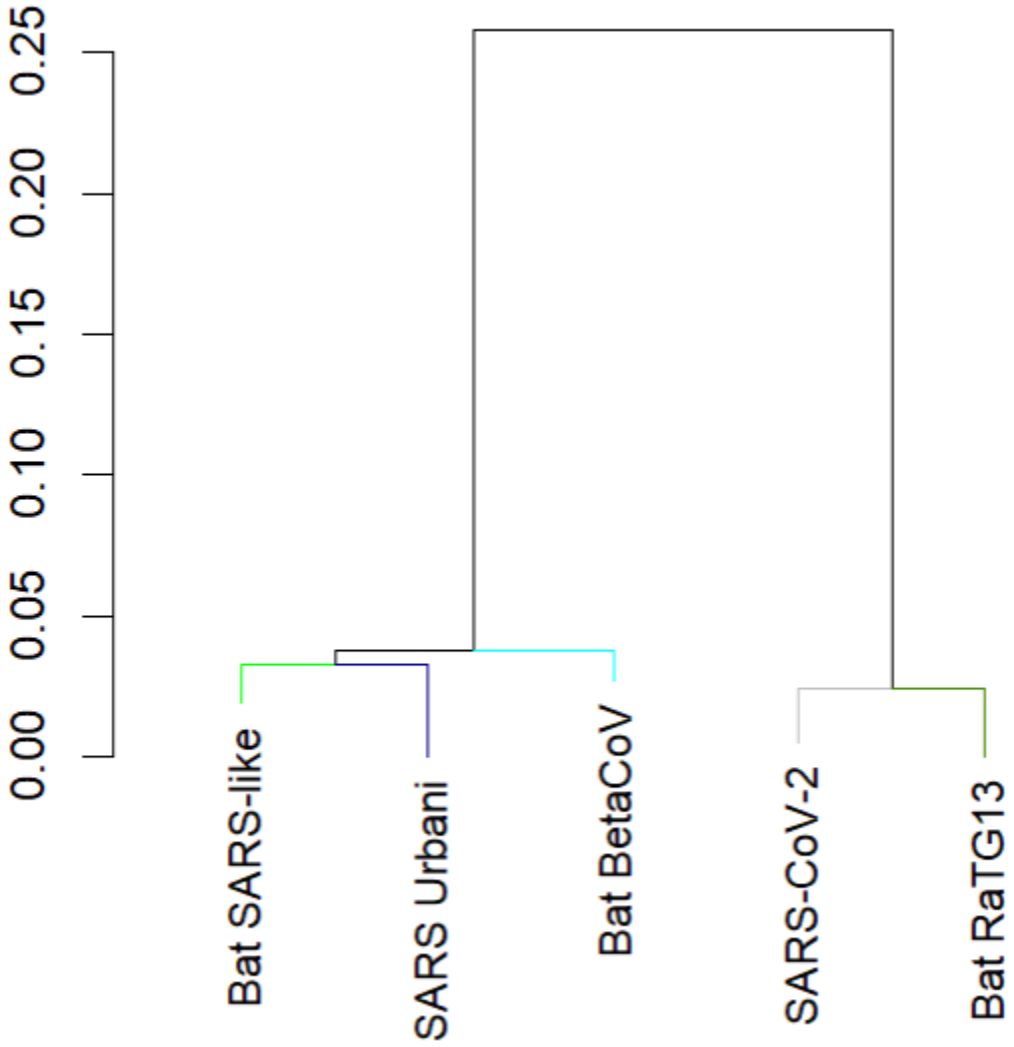

100
75
50
25
0
Last dose (per 100 population)
Bangladesh
Bhutan
India
Indonesia
Maldives
Myanmar
Nepal
Sri Lanka
Thailand
Timor-Leste
Regional Office for the Eastern Mediterranean

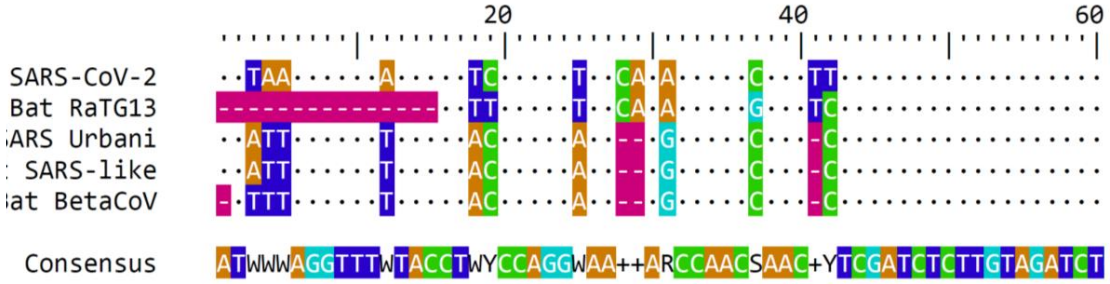
Análise estatística

https://github.com/MariaJaraMontibeller/Ferramentas-de-bioinformatica-para-facilitar-a-vida-do-pesquisador/blob/main/exercicio_2.xlsx


DISTRIBUIÇÃO NORMAL
NÃO PAREADO
1 FATOR/TRAT
HOMO
ANOVA ONE WAY
HETERO
ANOVA ONE WAY COM CORREÇÃO DE WELCH
Teste de Games Howell
2 ou + FATORES/TRAT
HOMO
ANOVA TWO WAY/FATORIAL
Vai interação
HETERO
ANOVA NÃO PARAMÉTRICO
Testar one way
- Normalidade
- Teste F
PAREADA
2 TEMPOS
pode Teste T também
Teste Mauchly's
+ de 2 TEMPOS
ESFÉRICOS
ANOVA PARA MEDIDAS REPETIDAS
TESTE SIDAK
NÃO ESFÉRICOS
ANOVA COM CORREÇÃO DE GREEN GLESSER
MISTA (pareado x não pareado)
DISTRIBUIÇÃO NÃO NORMAL
1 FATOR
2 GRUPOS
NÃO PAREADO
MANN WHITNEY
PAREADO
WILCOXON
3 GRUPOS
PAREADA
FRIEDMAN
NÃO PAREADO
KRUSKALL-WALLIS
2 FATORES
ANOVA NÃO PARAMÉTRICO

Análise filogenética





Análise de qualidade de dados de arquivos fasta.q

https://www.bioconductor.org/

https://www.bioconductor.org/packages/devel/bioc/vignettes/dada2/inst/doc/dada2-intro.html

http://benjjneb.github.io/dada2/

Material suplementar

https://resendejss.github.io/introducaoALinguagemR/introdu%C3%A7%C3%A3o.html#instala%C3%A7%C3%A3o-do-r

http://www.uft.edu.br/engambiental/prof/catalunha/arquivos/r/r_bruno.pdf