codigo

September 6, 2020

0.0.1 JUPYTER COSAS

```
[14]: if (!require(cluster)){
        install.packages("cluster", repos='http://cran.us.r-project.org')
      }
      if (!require(purrr)){
        install.packages("purrr", repos='http://cran.us.r-project.org')
      }
      if (!require(fpc)){
        install.packages("fpc", repos='http://cran.us.r-project.org')
      }
      if (!require(dbscan)){
        install.packages("dbscan", repos='http://cran.us.r-project.org')
      }
      if (!require(factoextra)){
        install.packages("factoextra", repos='http://cran.us.r-project.org')
      }
      if (!require(Matrix)){
        install.packages("Matrix", repos='http://cran.us.r-project.org')
      }
      if (!require(xtable)){
        install.packages("xtable", repos='http://cran.us.r-project.org')
      }
      library(cluster)
      library(purrr)
      library(fpc)
      library(dbscan)
      library(factoextra)
      library(Matrix)
      library(xtable)
```
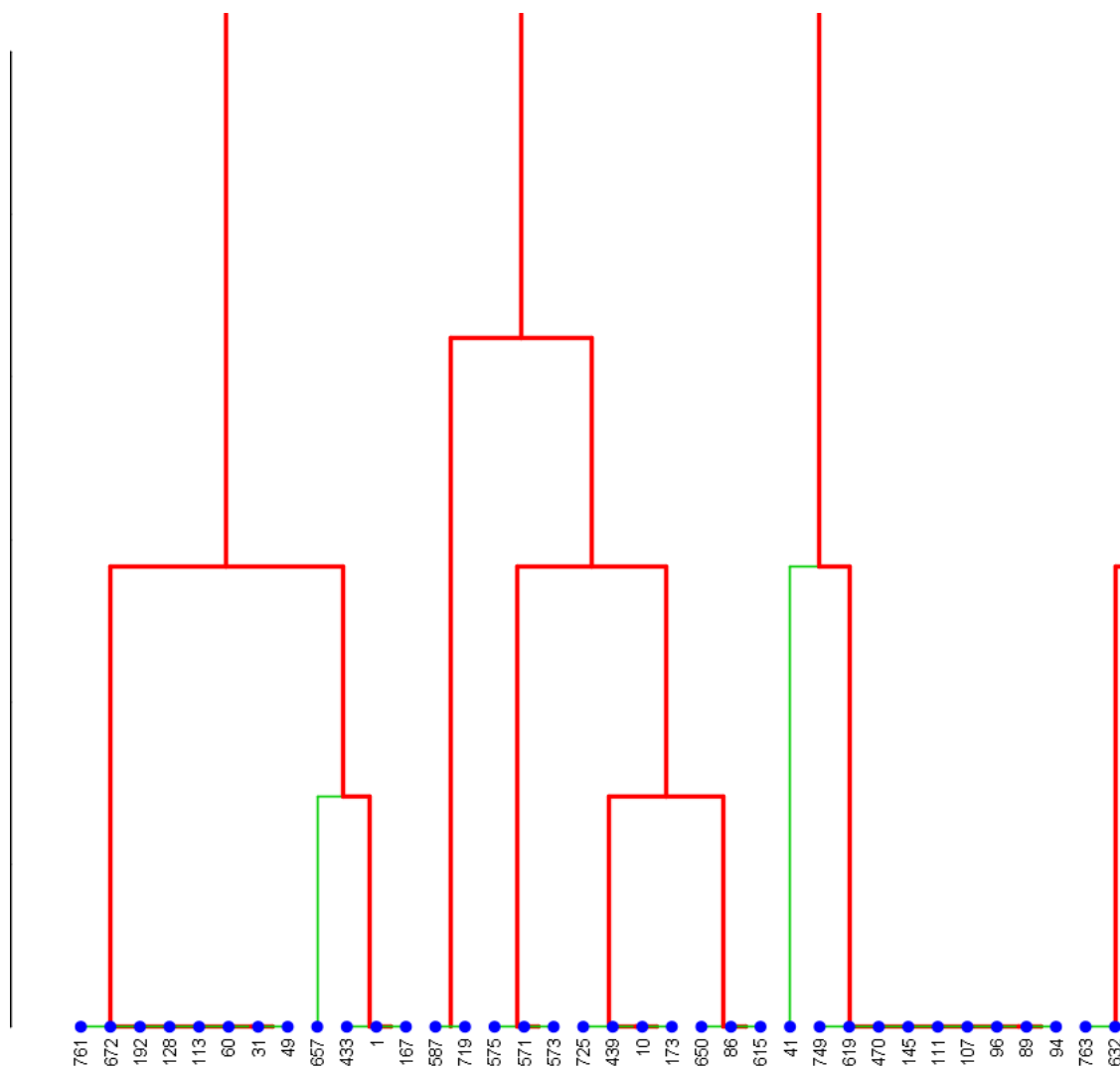
```
[19]: pokemon <- read.csv("Pokemon.csv", encoding="UTF-8", header=TRUE, sep=",", strip.
      ↪white=TRUE)[ ,c('Name', 'Total')]
      pokemon <- data.frame(pokemon)
      pokemon_fig <- head(pokemon, 10)
      pokemon_fig
```

A data.frame: 10 × 2

	Name <fct>	Total <int>
1	Bulbasaur	318
2	Ivysaur	405
3	Venusaur	525
4	VenusaurMega Venusaur	625
5	Charmander	309
6	Charmeleon	405
7	Charizard	534
8	CharizardMega Charizard X	634
9	CharizardMega Charizard Y	634
10	Squirtle	314

```r
[22]: d <- dist(pokemon, method="euclidian")
      hc1 <- hclust(d, method="complete")
      hc1 <- as.dendrogram(hc1)
      par(mar = c(2,0,0,0))
      nodePar <- list(lab.cex=0.6, pch=c(NA, 19), cex=0.7, col="blue")
      plot(hc1, nodePar=nodePar, edgePar=list(col=2:3, lwd=2:1), labels=NULL, cex=0.6,
        →xlim=c(0,35), ylim=c(0,6))
```

Warning message in dist(pokemon, method = "euclidian"):
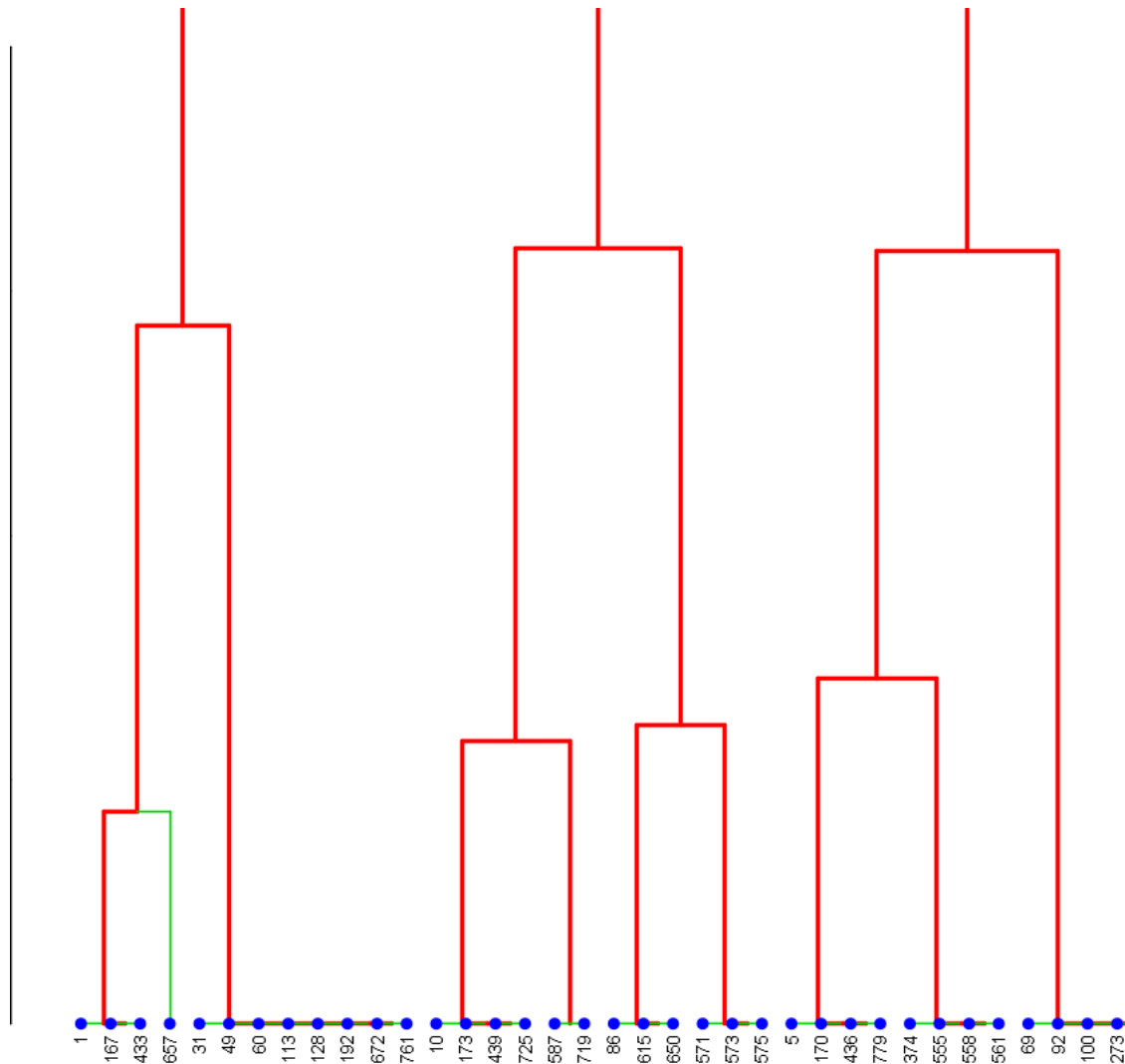"NAs introducidos por coerción"

```
[24]:  hc2 <- agnes(d, method="complete")
       m <- c( "average", "single", "complete", "ward")
       names(m) <- c( "average", "single", "complete", "ward")
       ac <- function(x) {
           agnes(d,method=x)$ac
       }
       map_dbl(m, ac)
```
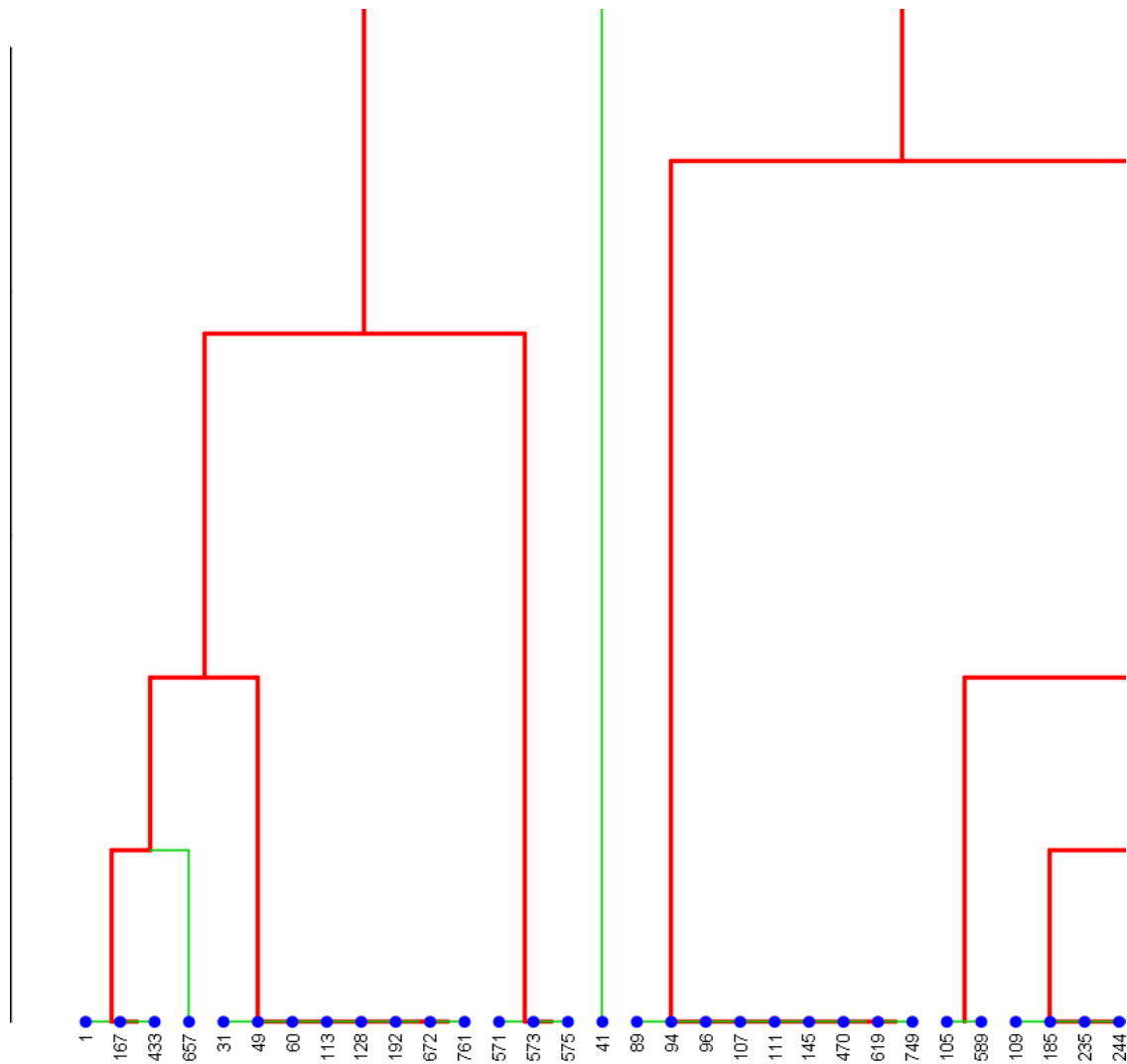
average   0.999318908624144 **single**   0.996050000000001 **complete**   0.999622916666667 **ward**
0.999933844937563

```
[27]:  hc3 <- as.dendrogram(agnes(d, method="ward"))
       par(mar = c(2,0,0,0))
```

3

```
plot(hc3, nodePar=nodePar ,edgePar=list(col=2:3, lwd=2:1), labels=NULL, cex=0.6,␣
 ↪xlim=c(0,35), ylim=c(0,8))
```



```
[28]: hc4 <- diana(d)
      hc4d <- as.dendrogram(hc4)
      par(mar = c(2,0,0,0))
      plot(hc4d, nodePar=nodePar ,edgePar=list(col=2:3, lwd=2:1), labels=NULL, cex=0.
       ↪6, xlim=c(0,30), ylim=c(0,8))
```

```
[32]: pokemon <- head(pokemon, 100)
      d <- dist(pokemon, method="euclidian")
      hc4 <- diana(d)
      clust <- cutree(hc4, k=5)
      fviz_cluster(list(data = d, cluster=clust))
```

Warning message in dist(pokemon, method = "euclidian"):
"NAs introducidos por coerción"

Cluster plot