

Chord association analysis

In these exercises, we will use the package *chorrrds*. It is a package to retrieve and analyze music data. This package is based on the scraping of Cifraclub website (<https://www.cifraclub.com.br>) that contains chords of songs for many bands and singers. We choose 'The Beatles'.

You need first to install some packages, such as *devtools*, *chorddiag*, *chorrrds*, *tidyverse* and *tidytext*.

```
install.packages( c('devtools', 'chorrrds', 'tidyverse',  
'tidytext') ) library(devtools)  
devtools::install_github("mattflor/chorddiag")  
library(chorddiag) library(chorrrds)  
library(tidyverse) library(tidytext)  
set.seed(20191)
```

Here are the weblink describing functions : tuneR : <https://cran.r-project.org/web/packages/tuneR/tuneR.pdf> chorrrds: <https://cran.r-project.org/web/packages/chorrrds/chorrrds.pdf> tidytext: <https://cran.r-project.org/web/packages/tidytext/tidytext.pdf> dplyr: <https://cran.r-project.org/web/packages/dplyr/dplyr.pdf>

1- Install packages

2- Getting a list of some The Beatle's songs

You will use the command *get_songs*

Display the resulting *data.frame*

Delete the lines containing 'letra'

3- Getting the chords

You will use *get_chords*

(tip: you can use *dplyr::pull* and *purrr::map* to map over all the urls of the songs)

Display the first 10 lines of the obtained data.frame

4- Common chords and proportions of these chords

You can use *dplyr::group_by* , *dplyr::count*, *dplyr::top_n*

To compute a percent : *dplyr::mutate(prop = scales::percent(n/sum(n)))*

5- look at chords associations (bigrams, trigrams)

You will use *dplyr::group_by* , *tidytext::unnest_tokens* , *dplyr::count* , *dplyr::top_n*

Compute and display the bigrams of chords

Compute and display trigrams of chords

6- make a matrix of chords and display associations

The following code computes all combinations of chords for each song

```
combination <- chords %>%
dplyr::mutate(seq = lead(chord)) %>%
dplyr::filter(chord != seq) %>%
dplyr::group_by(chord, seq) %>%
  dplyr::summarise(n = n())
```

use *tidyr::spread* and convert with *as.matrix* to generate the matrix

hence display the graph using *chorddiag::chorddiag*

7- choose a singer or band of your choice and find the association of chords of its songs

look at Cifraclub website the id