1. In Lab 3, you wrangled data from Essentia, Essentia models and LIWC. Rework your solution to Lab 3 using `tidyverse` (Wickham et al., 2019) instead of base `R`. Specifically, rewrite your code for steps 1-4 of task 2 using `tidyverse` (Wickham et al., 2019). Make sure to address any issues I noted in your code file, and ensure that your code runs in the directory as it is set up.

```
# Code to run here.
library(tidyverse)
library(stringr)
library(jsonlite)

######step 1
#step 1 part 1
current.filename <- "The Front Bottoms-Talon Of The Hawk-Au Revoir (Adios).json"
split <- current.filename %>% str_split("-")
artist <- split[[1]][1]
track <-split[[1]][2]
filename <-str_sub(split[[1]][3],,-6)

#step 1 part 3
data <- fromJSON("EssentiaOutput/The Front Bottoms-Talon Of The Hawk-Au Revoir (Adios).json")

#step 1 part 4
clean <- function(data){
  overall.loudness = data$lowlevel$loudness_ebu128$integrated
  spectral.energy = data$lowlevel$spectral_energy$mean
  dissonance = data$lowlevel$dissonance$mean
  pitch.salience = data$lowlevel$pitch_salience$mean
  bpm = data$rhythm$bpm
  beats.loudness = data$rhythm$beats_loudness$mean
  danceability = data$rhythm$danceability
  tuning.frequency = data$tonal$tuning_frequency


  to.return <- data.frame(overall.loudness, spectral.energy, dissonance, pitch.salience, bpm, beats.loudness, danceability, tuning.frequenc
}

###### Step 2
list.of.filenames <- list.files("EssentiaOutput")%>%
  .[!endsWith(., ".csv")]

frame <- data.frame(overall.loudness = rep(x=NA, times=length(list.of.filenames)),
                    spectral.energy = rep(x=NA, times=length(list.of.filenames)),
                    dissonance = rep(x=NA, times=length(list.of.filenames)),
                    pitch.salience = rep(x=NA, times=length(list.of.filenames)),
                    bpm = rep(x=NA, times=length(list.of.filenames)),
                    beats.loudness = rep(x=NA, times=length(list.of.filenames)),
                    danceability = rep(x=NA, times=length(list.of.filenames)),
                    tuning.frequency = rep(x=NA, times=length(list.of.filenames)),
                    artist = rep(x=NA, times=length(list.of.filenames)),
                    album = rep(x=NA, times=length(list.of.filenames)),
                    track = rep(x=NA, times=length(list.of.filenames)))

for (i in 1:length(list.of.filenames)){
  split = str_split(list.of.filenames[i], "-", simplify=TRUE)
  to.sort <- fromJSON(paste0("EssentiaOutput/",list.of.filenames[i])) %>%
    clean() %>%
    mutate(
      curr.artist = split[1],
      curr.album = split[2],
      curr.track = str_sub(split[3], end=-6)
    )
  frame[i,] <- to.sort
}

######step 3
#step 3 part 1
info <- read.csv("EssentiaOutput/EssentiaModelOutput.csv")%>%
  mutate(
    valence = rowMeans(.[,c("deam_valence", "emo_valence", "muse_valence")], na.rm=TRUE),
    arousal = rowMeans(.[,c("deam_arousal", "emo_arousal", "muse_arousal")], na.rm=TRUE),
    aggressive =rowMeans(.[,c("eff_aggressive","nn_aggressive")], na.rm=TRUE),
    happy =rowMeans(.[,c("eff_happy","nn_happy")], na.rm=TRUE),
    party =rowMeans(.[,c("eff_party","nn_party")], na.rm=TRUE),
    relaxed =rowMeans(.[,c("eff_relax","nn_relax")], na.rm=TRUE),
    sad =rowMeans(.[,c("eff_sad","nn_sad")], na.rm=TRUE),
    acoustic =rowMeans(.[,c("eff_acoustic","nn_acoustic")], na.rm=TRUE),
    electric =rowMeans(.[,c("eff_electronic","nn_electronic")], na.rm=TRUE),
    instrumental =rowMeans(.[,c("eff_instrumental","nn_instrumental")], na.rm=TRUE)
  )%>%
```

```
  rename(timbreBright = eff_timbre_bright) %>%
  select(artist,album,track,valence,arousal,aggressive,happy,party,relaxed,sad,acoustic,electric,instrumental,timbreBright)

######step 4
#step 4 part 1
lyrics <- read_csv("LIWCOutput/LIWCOutput.csv")

merged <- lyrics|>
  merge(info, by = c("artist", "album", "track"))|>
  merge(frame, by = c("artist", "album", "track"))%>%
  rename(, "funct"="function")
```

References

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., Takahashi, K., Vaughan, D., Wilke, C., Woo, K., and Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software*, 4(43):1686.