

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.

```
#load packages
library(jsonlite)
library(stringr)
library(tidyverse)

#####
# Step 1
#####
current.filename <- "The Front Bottoms-Talon Of The Hawk-Au Revoir (Adios).json"
current.filename <- str_split(current.filename, "-", simplify = T)

artist <- current.filename[1]
album <- current.filename[2]
track <- current.filename[3]

json_file <- fromJSON("EssentiaOutput/The Front Bottoms-Talon Of The Hawk-Au Revoir (Adios).json")

overall_loudness <- json_file$lowlevel$loudness_ebu128$integrated
spectral_energy <- json_file$lowlevel$spectral_energy$mean
dissonance <- json_file$lowlevel$dissonance$mean
pitch_salience <- json_file$lowlevel$pitch_salience$mean
bpm <- json_file$rhythm$bpm
beats_loudness <- json_file$rhythm$beats_loudness$mean
danceability <- json_file$rhythm$danceability
tuning_frequency <- json_file$tonal$tuning_frequency

#####
# Step 2
#####
files = list.files("EssentiaOutput")
list.files <- files[which(str_count(list.files("EssentiaOutput"), ".json") >= 1)]

main.df <- tibble()

for (json in list.files){

  filename <- json |>
  str_sub(start = 1L, end = -6L) |>
  str_split(pattern = '-', simplify = T)

  json_file <- fromJSON(paste0("EssentiaOutput/", json))

  # create new row to add
  new_row <- tibble(
    artist = filename[1],
    album = filename[2],
    track = filename[3],

    overall_loudness = json_file$lowlevel$loudness_ebu128$integrated,
    spectral_energy = json_file$lowlevel$spectral_energy$mean,
    dissonance = json_file$lowlevel$dissonance$mean,
    pitch_salience = json_file$lowlevel$pitch_salience$mean,
    bpm = json_file$rhythm$bpm,
    beats_loudness = json_file$rhythm$beats_loudness$mean,
    danceability = json_file$rhythm$danceability,
    tuning_frequency = json_file$tonal$tuning_frequency )

  main.df <- main.df %>%
    bind_rows(., new_row)
}

#####
# Step 3
#####
#3.1
model.output <- read_csv("EssentiaOutput/EssentiaModelOutput.csv")

model.output <- model.output %>%
  mutate(
    #3.2
    valence = rowMeans(select(., deam_valence, emo_valence, muse_valence)),
    arousal = rowMeans(select(., deam_arousal, emo_arousal, muse_arousal)),
```

```

#3.3
aggressive = rowMeans(select(., eff_aggressive, nn_aggressive)),
happy = rowMeans(select(., eff_happy, nn_happy)),
party = rowMeans(select(., eff_party, nn_party)),
relaxed = rowMeans(select(., eff_relax, nn_relax)),
sad = rowMeans(select(., eff_sad, nn_sad)),
#3.4
acoustic = rowMeans(select(., eff_acoustic, nn_acoustic)),
electric = rowMeans(select(., eff_electronic, nn_electronic)),
#3.5
instrumental = rowMeans(select(., eff_instrumental, nn_instrumental)),
#3.6
timbreBright = eff_timbre_bright ) |>
#3.7
select(artist, album, track, valence, arousal, aggressive,
        happy, party, relaxed, sad, acoustic, electric,
        instrumental, timbreBright)

#####
# Step 4
#####
liwc.df <- read_csv("LIWCOutput/LIWCOutput.csv")

merged.df <- main.df |>
  inner_join(model.output, by = c("artist", "album", "track")) |>
  inner_join(liwc.df, by = c("artist", "album", "track"))|>
  rename(funct = "function")

#####
#Step 5
#####
#writing a .csv without the track "Allentown"
write_csv(merged.df[merged.df$track != "Allentown", ], "trainingdata.csv")
#writing a .csv file with only "Allentown"
write_csv(merged.df[merged.df$track == "Allentown", ], "testingdata.csv")

```

References

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemond, 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.