Lab 07: What makes a song more positive?

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Load packages & data

```
library(tidyverse)
library(broom)
library(knitr)
library(rms)
```

```
spotify <- read_csv("data/spotify-popular.csv") %>%
  mutate(key = factor(key),
         mode = factor(mode))
```

Exercise 1

```
full_model <- lm(valence ~ danceability + energy + key + loudness +
                   mode + speechiness + acousticness + instrumentalness +
                   liveness + tempo + duration_ms + playlist_genre,
                 data=spotify)

tidy(full_model)%>%
  kable(digits = 3)
```

term	estimate	std.error	statistic	p.value
(Intercept)	-0.398	0.149	-2.678	0.008
danceability	0.700	0.071	9.871	0.000
energy	0.685	0.082	8.335	0.000
key1	0.006	0.035	0.164	0.869
key2	0.054	0.040	1.357	0.176
key3	0.043	0.051	0.847	0.398
key4	-0.019	0.040	-0.471	0.638
key5	0.038	0.038	0.983	0.326
key6	0.036	0.040	0.911	0.363
key7	-0.004	0.039	-0.102	0.919
key8	0.009	0.040	0.237	0.813
key9	0.018	0.039	0.463	0.643
key10	0.034	0.040	0.865	0.388
key11	0.047	0.038	1.243	0.214
loudness	-0.004	0.005	-0.861	0.389
mode1	0.015	0.018	0.850	0.396
speechiness	-0.047	0.086	-0.544	0.586
acousticness	0.130	0.043	3.007	0.003
instrumentalness	-0.132	0.158	-0.839	0.402

term	estimate	std.error	statistic	p.value
liveness	-0.052	0.068	-0.761	0.447
tempo	0.000	0.000	1.217	0.224
duration_ms	0.000	0.000	-0.416	0.677
playlist_genrelatin	-0.075	0.084	-0.893	0.372
playlist_genrepop	-0.110	0.081	-1.350	0.178
playlist_genrer&b	-0.124	0.085	-1.449	0.148
playlist_genrerap	-0.156	0.082	-1.896	0.059
playlist_genrerock	-0.045	0.090	-0.502	0.616

```
int_only_model <- lm(valence ~ 1, data = spotify)
tidy(int_only_model)%>%
  kable(digits=3)
```

term	estimate	std.error	statistic	p.value
(Intercept)	0.51	0.01	51.272	0

Exercise 2

```
backward_aic <- step(full_model, direction="backward")
```

```
tidy(backward_aic)%>%
  kable(digits=3)
```

term	estimate	std.error	statistic	p.value
(Intercept)	-0.314	0.103	-3.058	0.002
danceability	0.673	0.066	10.232	0.000
energy	0.655	0.059	11.133	0.000
acousticness	0.134	0.042	3.198	0.001
playlist_genrelatin	-0.052	0.077	-0.674	0.500
playlist_genrepop	-0.089	0.075	-1.182	0.238
playlist_genrer&b	-0.108	0.080	-1.359	0.175
playlist_genrerap	-0.135	0.077	-1.753	0.080
playlist_genrerock	-0.028	0.083	-0.339	0.735

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