



Equitable Equations: *Types of data*

This problem refers to the *erykah* data set, available on Moodle, which includes Spotify metrics on every song available by neo-soul artist Erykah Badu. You can learn more about the variables in the set at <https://developer.spotify.com/documentation/web-api/reference/get-audio-features>.

Determine the type and level of measurement of each of the following variables in this data set. Briefly explain your choices.

- tempo - quantitative, ratio - bpm
- mode - categorical, nominal - major & minor
- key_name - categorical, ordinal - musical key
- liveness - quantitative, ratio - 0 mean low chance of audience

tempo number [float]

The overall estimated tempo of a track in **beats per minute** (BPM). In musical terminology, tempo is the speed or pace of a given piece and derives directly from the **average beat duration**.

mode integer

Mode indicates the modality (**major or minor**) of a track, the type of scale from which its melodic content is derived. Major is represented by 1 and minor is 0.

key integer

The key the track is in. Integers map to pitches using standard **Pitch Class notation**. E.g. 0 = C, 1 = C#/D b, 2 = D, and so on. If no key was detected, the value is -1.

Range: -1 - 11

Example: 9

liveness number [float]

Detects the presence of an audience in the recording. **Higher liveness values represent an increased probability** that the track was performed live. A value above 0.8 provides strong likelihood that the track is live.