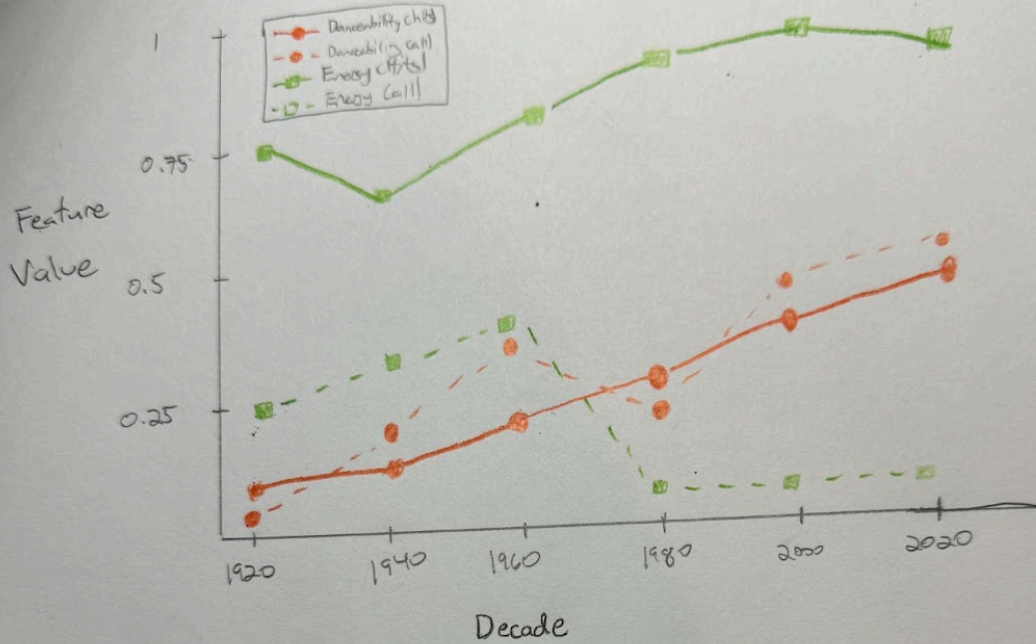


# Hit Music Analysis Graph sketches

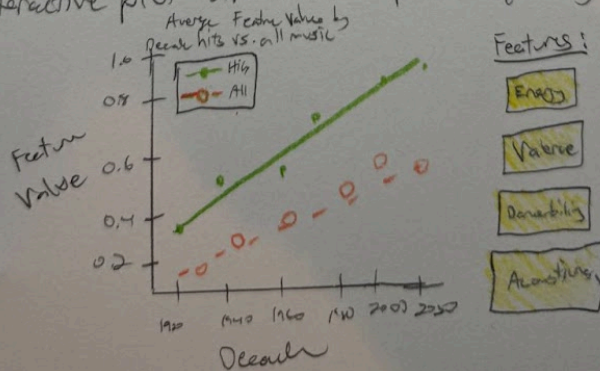
Ryan Pascual  
Yeehan Wang-Liu

RQ #1:

Average Danceability & Energy by  
Decade Hits vs. All Music

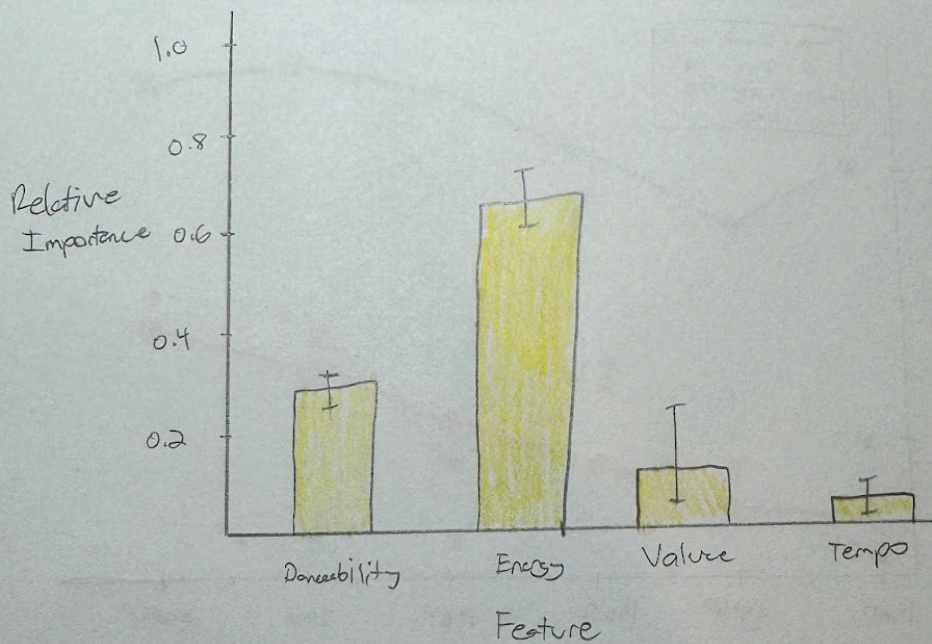


annotations: Can use other musical qualities  
Can use more musical qualities  
will pick qualities that paints the most vivid picture  
If enough musical qualities are important, can use  
interactive plot where user picks quality:



Q22:

### Relative Feature Importances Predicting Hit Status



Annotations: relative importance is a value from 0.0 to 1.0,  
obtained from machine learning

depending on how hard it is to obtain, may qualify for ML challenge score

Standard error bars represent  $\pm 2$  SEM



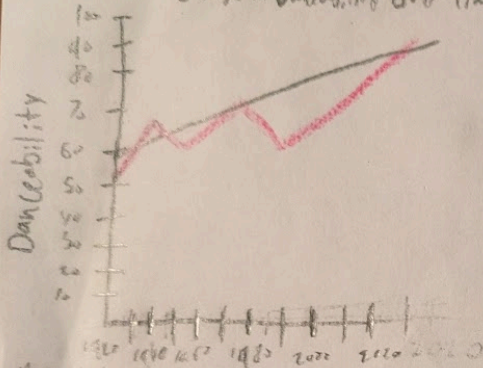
# Question 1

- Linear Regression
- Looking for strong trends in music

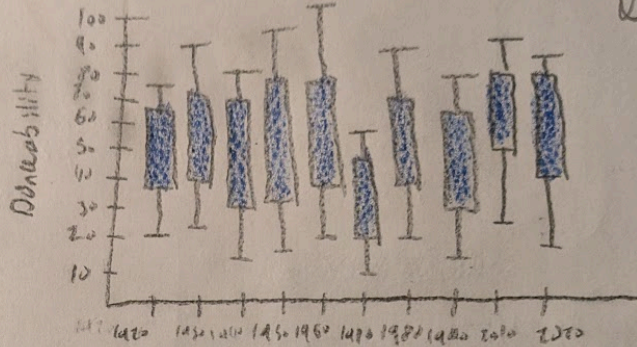
Each graph will be repeated for all applicable ML characteristics. However, for these sketches the graphs will be for danceability, but the idea applies for all.

- Noticed whether not
- Looking for changes but considering others as well

Change in Danceability Over Time



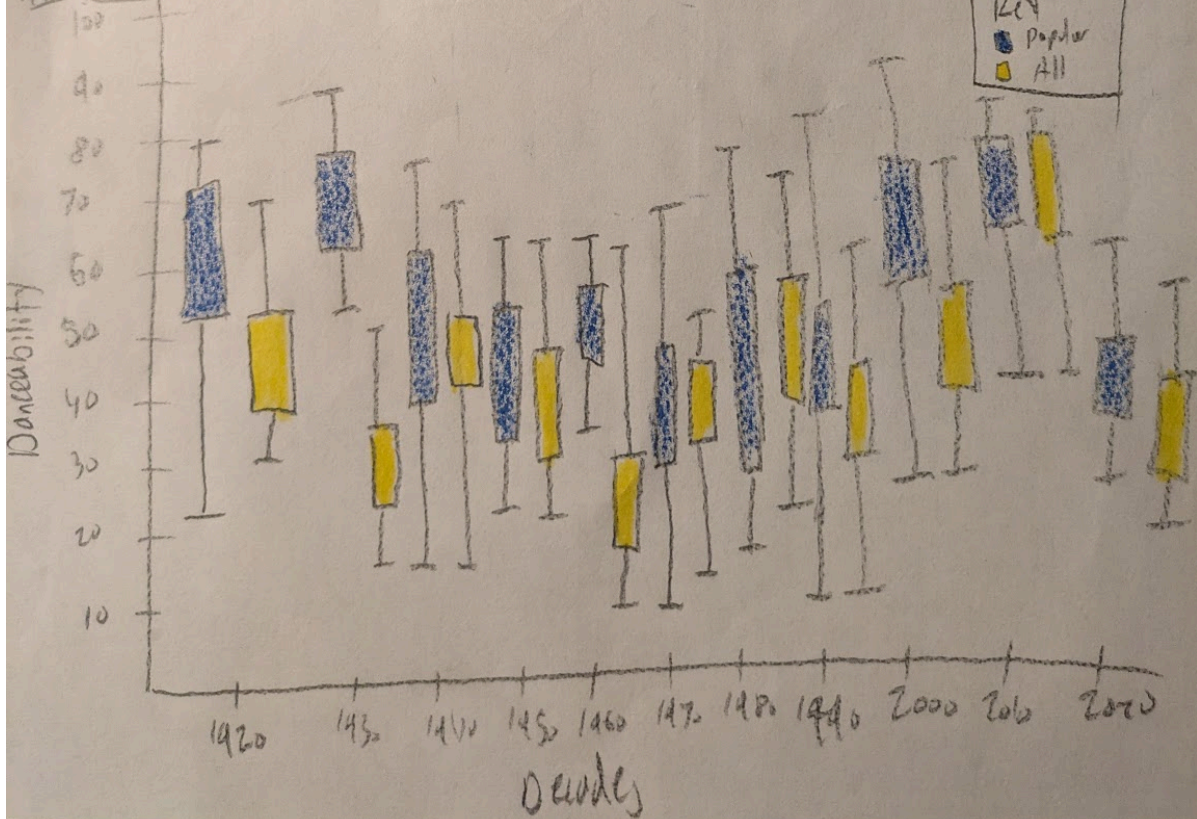
Change in Danceability Over Time



- Not what put
- Trends in amplitude
- Balance difference

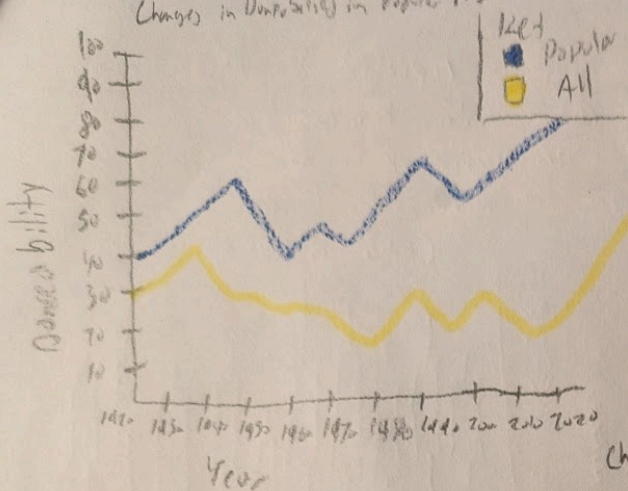
Year

Changes in Danceability in Decades  
Popular music Vs. All music





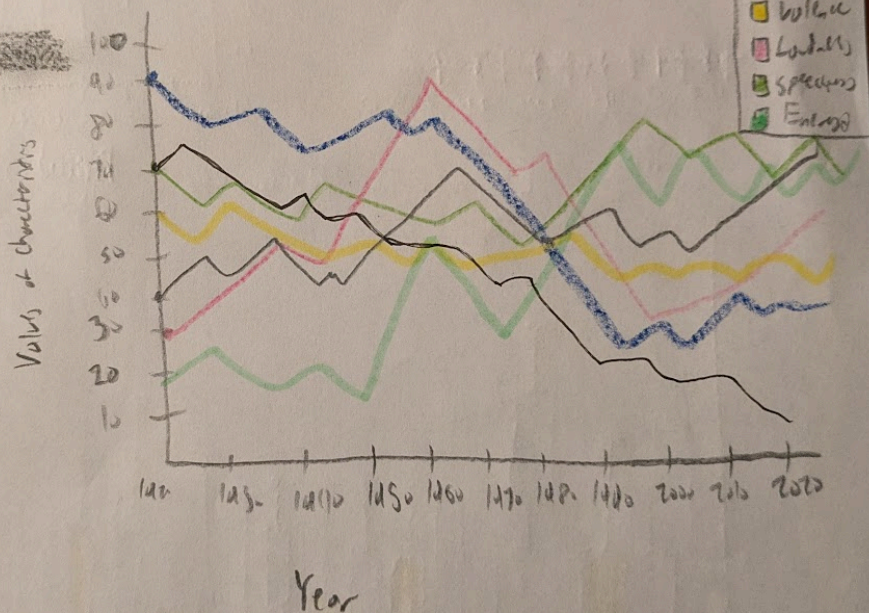
Changes in Durability in Popular Music v. All music



### Annotations

- Multiple line plots
- Trying to see if there's a difference between changes in popular music and all music
- Can begin helping answer question 2 as well.

Change in Characteristics Over Time



### Annotations

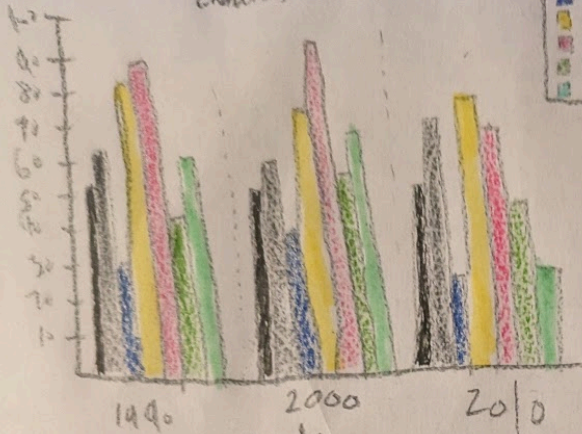
- Multiple line graphs
- Allows us to look at all characteristics
- Later used me for summarizing the looking for trends



## Question 2

Characteristics of Popular Music

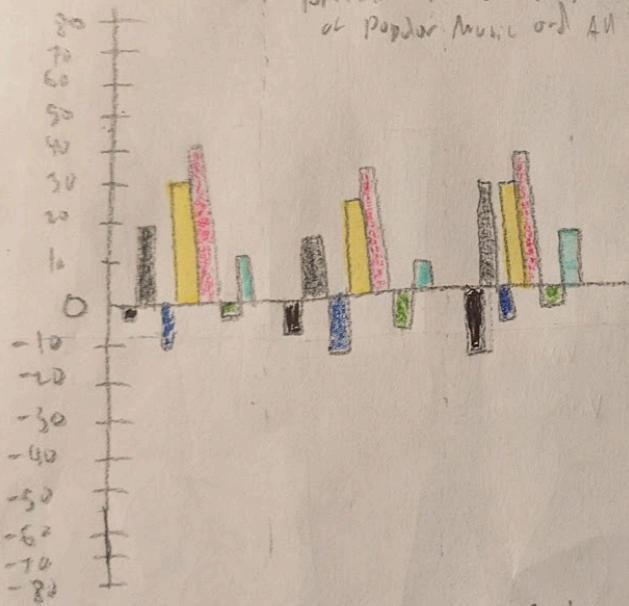
Value of Characteristics



### Annotations

- We're looking for what characteristics are the strongest
- Multi-Histogram
- Could make multiple plots for more decades but for the sake of demonstration just did 1990-2010.

Value of Characteristics



Decade

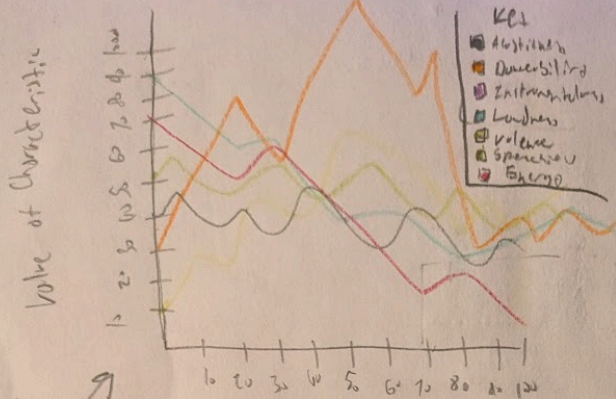
### Annotations

- Multi-histogram
- We're looking for what characteristic differences are the strongest
- This will help us find what makes music popular what the difference is

Characteristics of Popular Music - All Music



## Traits vs. Popularity



- Multiple-Line Charts
- The data displayed in this graph can be used to find correlation between characteristics and popularity.
- While this is the option of splitting this into multiple graphs the main purpose of this graph is to further help display

### Bar Chart

- The value will be found from the higher value the correlation

### Help

- Discover what category the most popular group

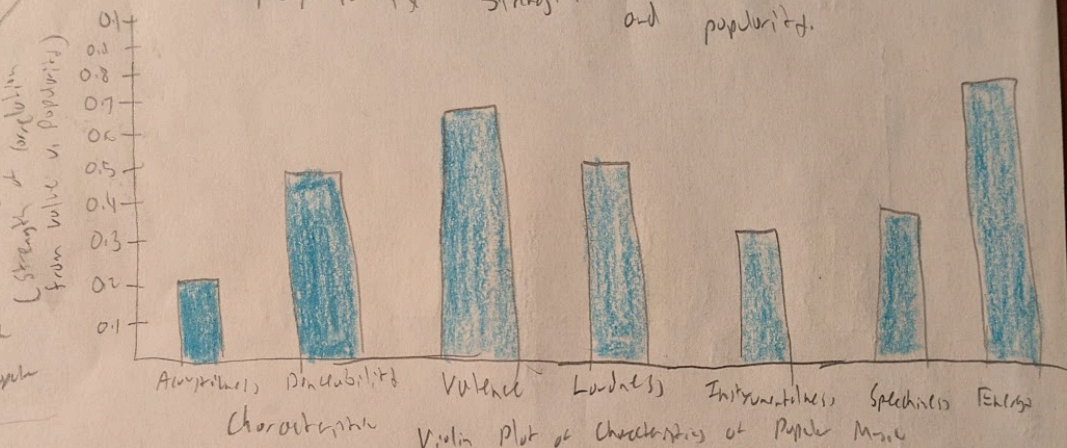
### Statistics

- Violin Chart
- All previous graphs display values

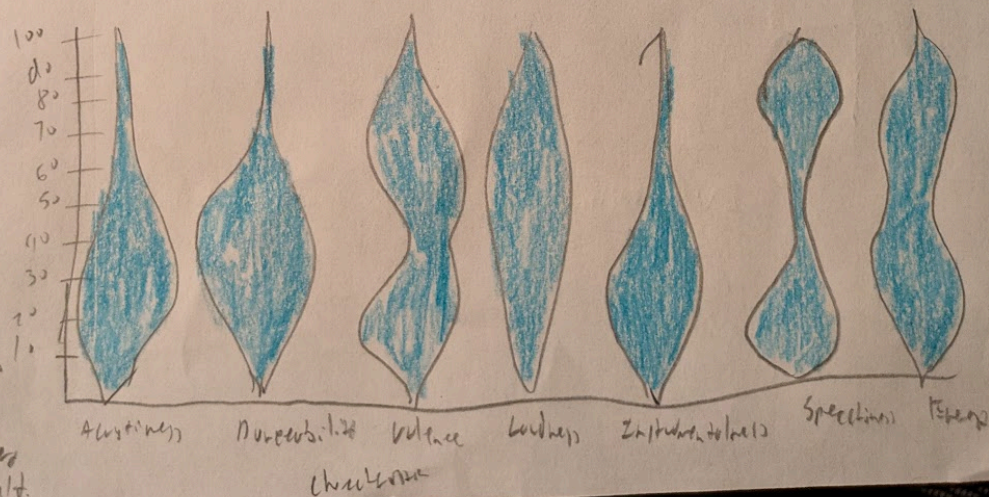
- This graph allows distributions to be seen

- Perhaps people mean is either very little or a lot

Popularity Strength of correlation of each characteristic and popularity.



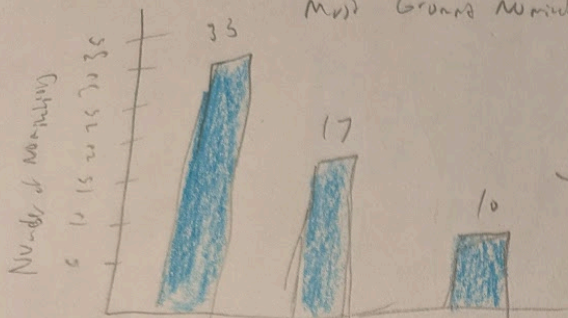
Violin Plot of Characteristics of Popular Music





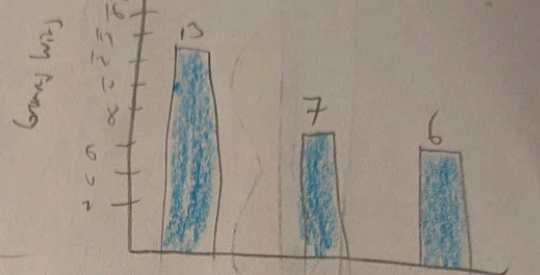
# Question 4

Artists with the Most Grammys Nominations



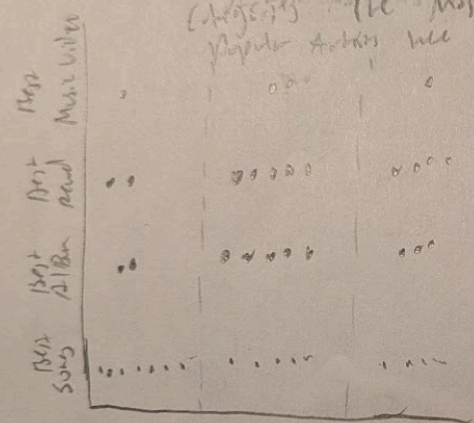
Bar charts  
Looking for artists with the most nominations who are in the top 10?

Artists with the Most Grammy Nominations



Beyoncé Jay-Z Kanye West

Artists



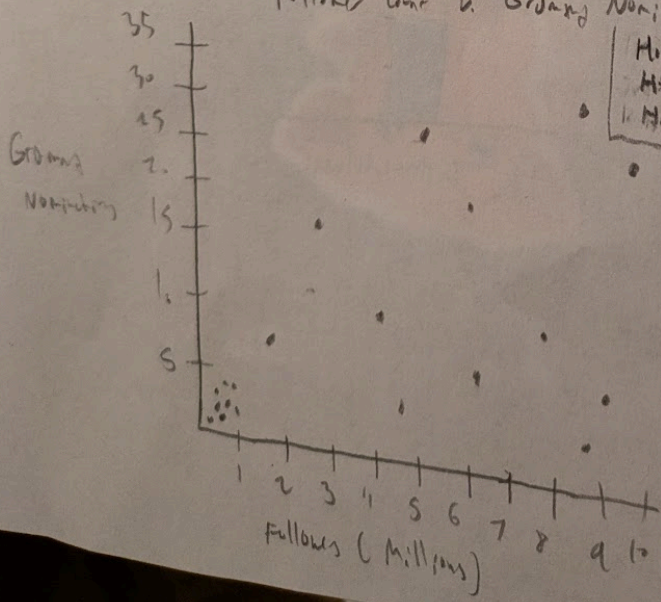
Looking for the most popular artists who are nominated for

• 2D dot plot a summary plot

• Trying to see if there are any categories with favorites

Beyoncé Jay-Z Kanye West

Followers (Millions)



High 1  
High 2  
High 3

• Looking to see if there are artists who have many nominations even though popularity may not reflect that

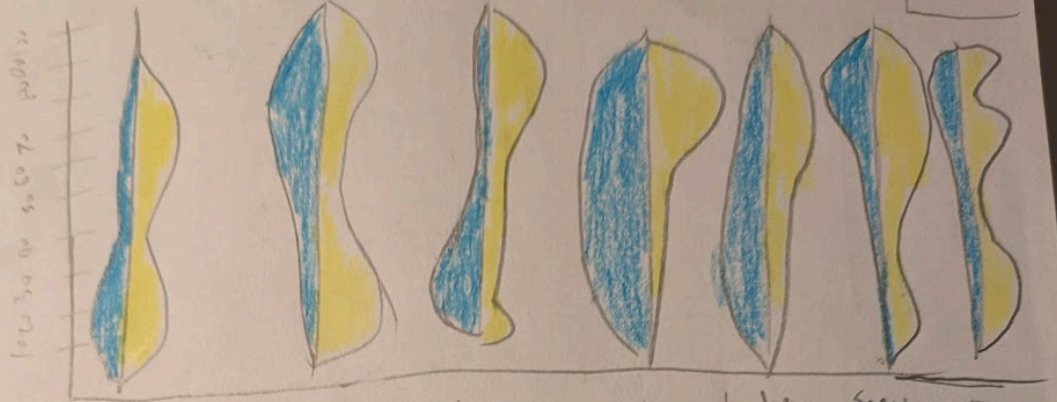


# Characteristics of Grammy Nominees vs (General) Popular Music

Question 3

Key  
Grammy  
popular

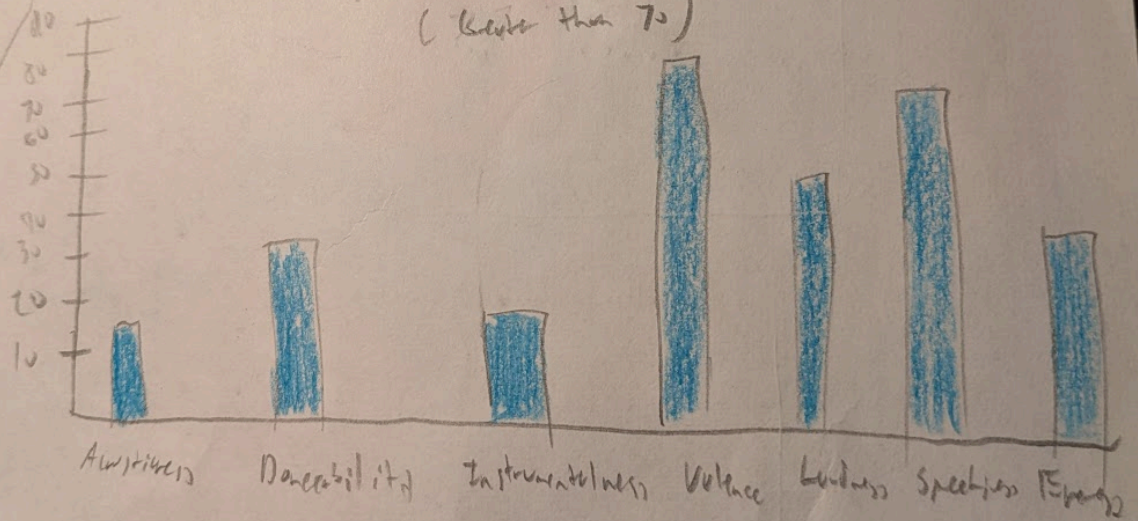
Value of Characteristics



Acoustic Danceability Instrumentalness Valence Liveness Speechiness Energy

Annotations  
this will help  
determine if  
there is a  
difference in Grammy  
songs and popular  
songs.  
• With chart  
• Examples  
• Examples show  
differences  
are shown  
and discussed  
clear

Percent



Percent of Grammy Nominees  
with a strong characteristic  
(Greater than 70)

characteristic

Annotations

• will help show if Grammy songs have a tendency to be high in a characteristic other than