



# Historical Trends in Popular Music

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W209. Data Visualization

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# Project Concept

Visualize music over time across different genres and their related audio features (energy, valence, etc)



Analyze differences and trends in audio features between hit vs non-hit songs



Discover song similarities in general and per genre with respect to audio features



# Targeted Users

- Record producers who will utilize the popular music trends and audio feature visualizations
- Any person that is curious about music, music trends over time, and those that are interested in finding music that is similar to what they're listening to



# Dataset

## Audio Features



- Danceability
- Speechiness
- Acousticness
- Valence
- Duration
- Energy

## Genre



- Pop
- Rock
- Latin
- R&B
- Rap
- EDM

## Other Dimensions



- Artist Name
- Song Name
- Song Year
- Trending Year
- Hit / Non-hit

# Usability Tests

The primary tasks included:


- What was the percentage of pop songs in 2018? Please list the values of their audio features(Danceability, Energy, Valence ...etc)
- Compare how the different audio features have changed over time for R&B and pop music
- Look at two of your favourite artists and compare the valence and energy
- Compare the audio features for Hit songs vs. Non-Hit Songs

# User Feedback & Integrations

Must Have

## Feedback

Low discoverability of genre filter

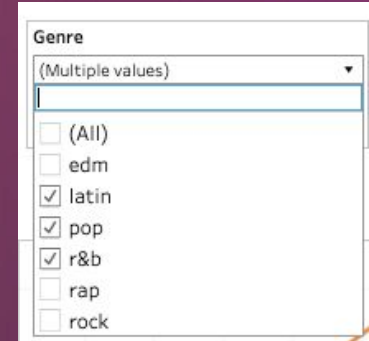


Genre

- edm
- latin
- pop
- r&b
- rap
- rock

## Fix / Improvement

Change the genre filter to a checkbox



Genre

(Multiple values)

- ☐ (All)
- ☐ edm
- ☒ latin
- ☒ pop
- ☒ r&b
- ☐ rap
- ☐ rock

# User Feedback & Integrations

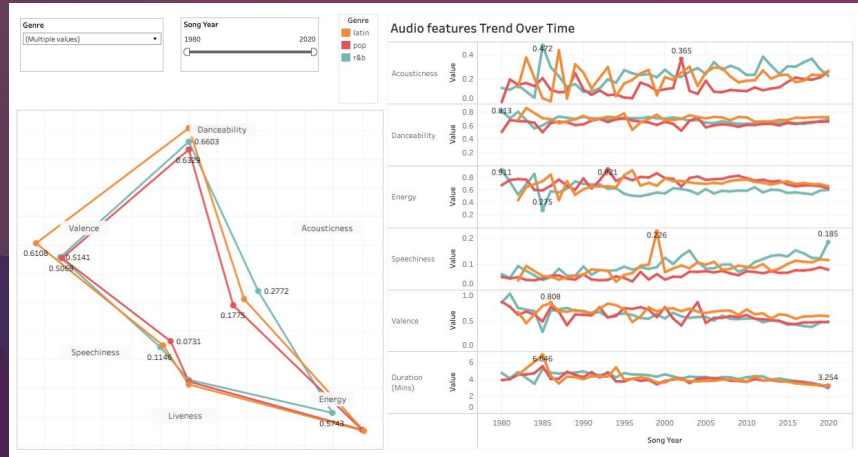
Must Have

## Feedback

The audio feature chart is small and hard to see  
(Trend lines are too flat)

## Fix / Improvement


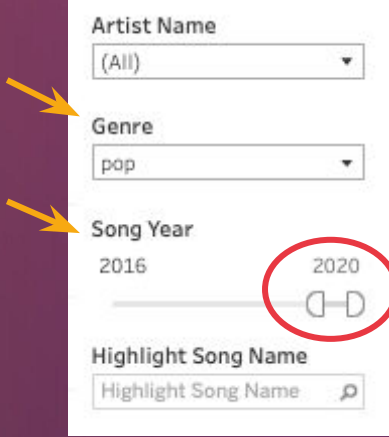
Eliminate unnecessary measurements (liveness and loudness) & split charts into separate pages





# User Feedback & Integrations

Must Have

Feedback	Fix / Improvement
<p>Lots of data loading on one page, which caused the page to freeze</p> 	<p>Add genre filter and song year filter &amp; initialize pop songs of last 5 year</p> 

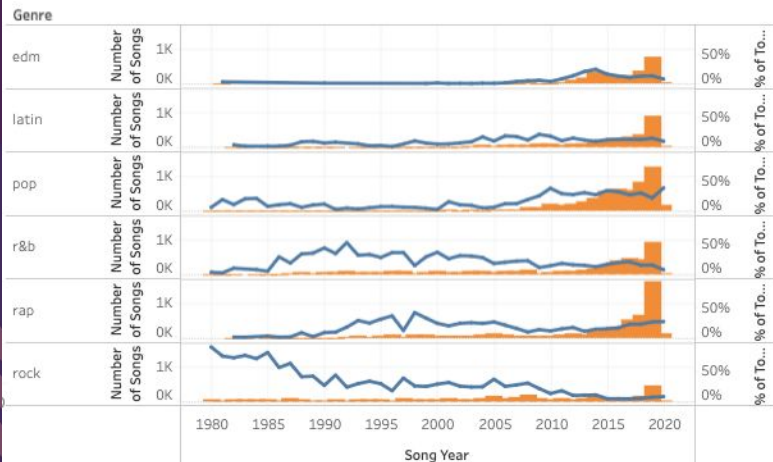
# User Feedback & Integrations

Must Have

## Feedback

Combo chart (with multiple measures- Number of Songs & Percentage of songs) is hard to understand

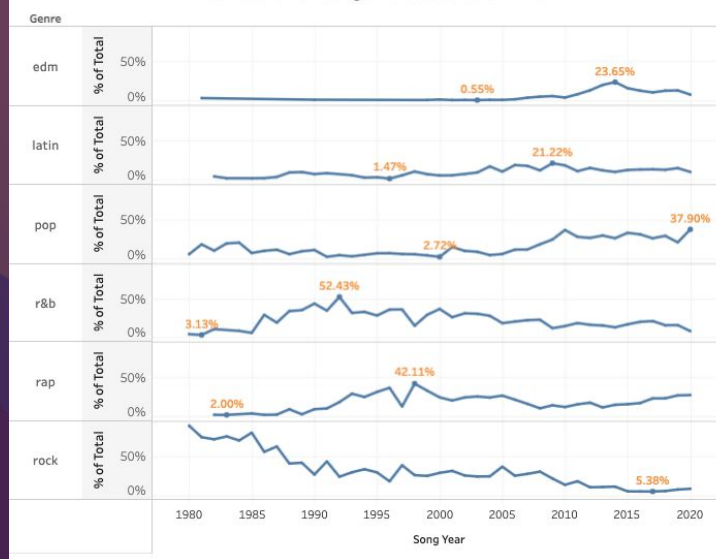
Genre distribution of songs released between 1980 to 2020



## Fix / Improvement

Keep only one measurement (Percentage of songs), remove the other

Distribution of Songs Released Over Time



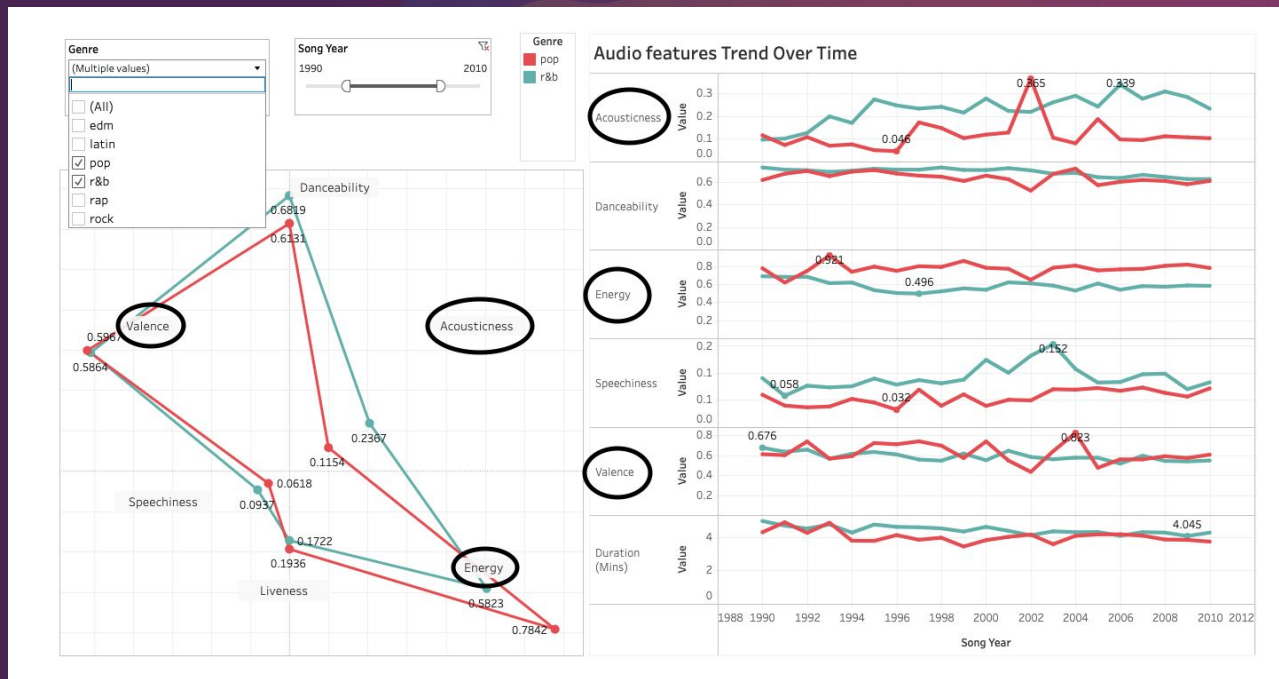
# User Feedback & Integrations

Should Have

Feedback	Fix / Improvement
Number of hits is relative to amount of data given for that year	Change to use percentage of hits
No autocomplete / selection for artist search bar	Add a dropdown for artist search
No artist name showing up when hovering on each circle(song)	Add artist name in the tooltip as well

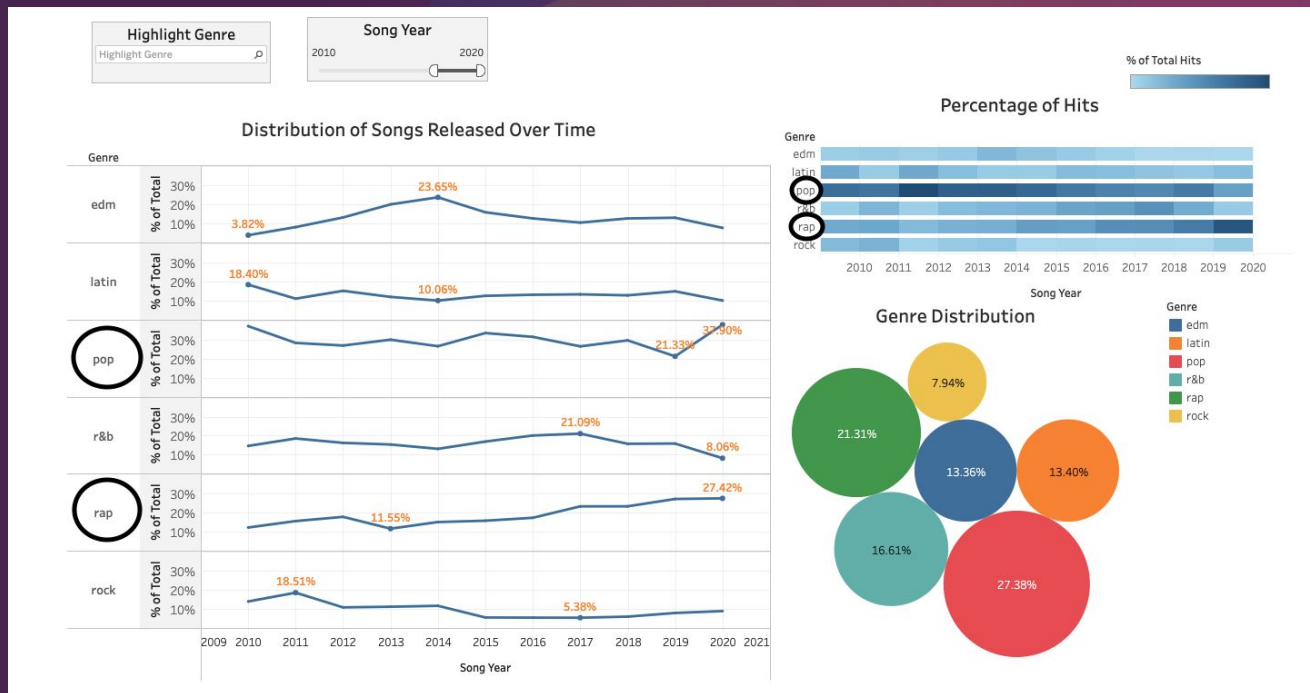
# Insights + Use Case 1

Use Case: View trends in audio features for specified time periods and genres



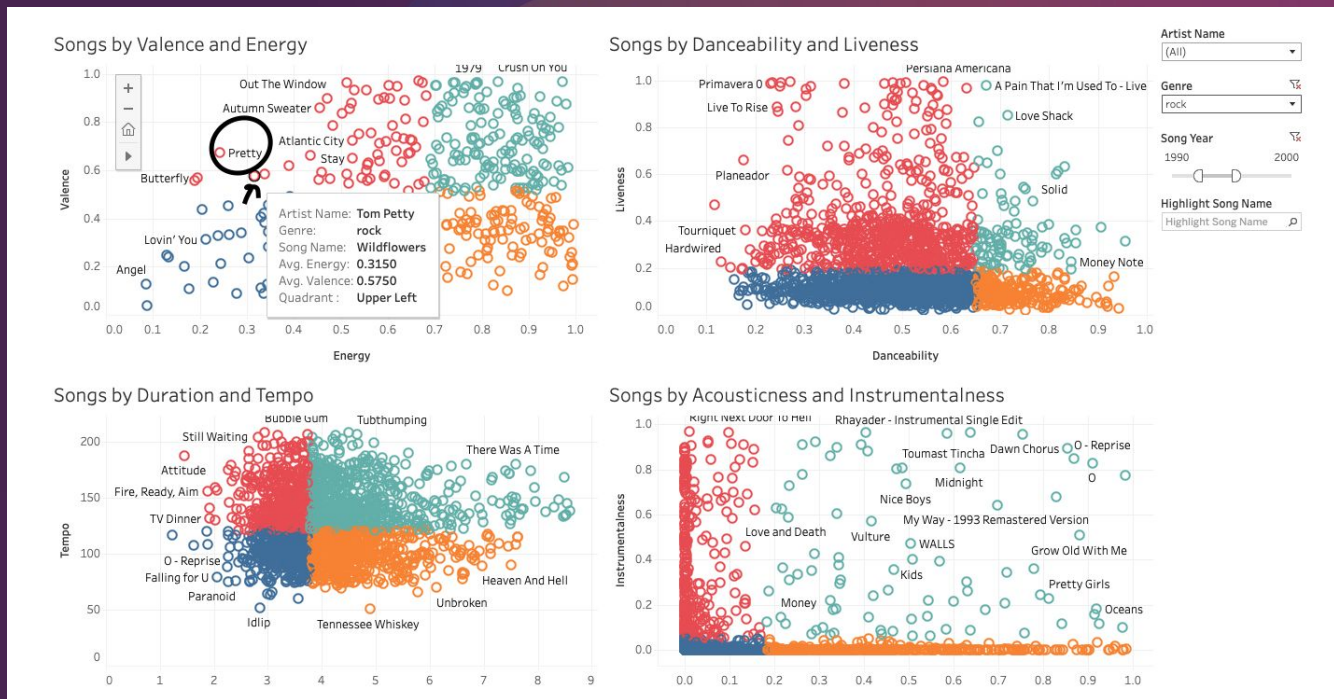
# Insights + Use Case 2

**Use Case:** View the distribution of songs (by genre and number of hits) for a specified time period



# Insights + Use Case 3

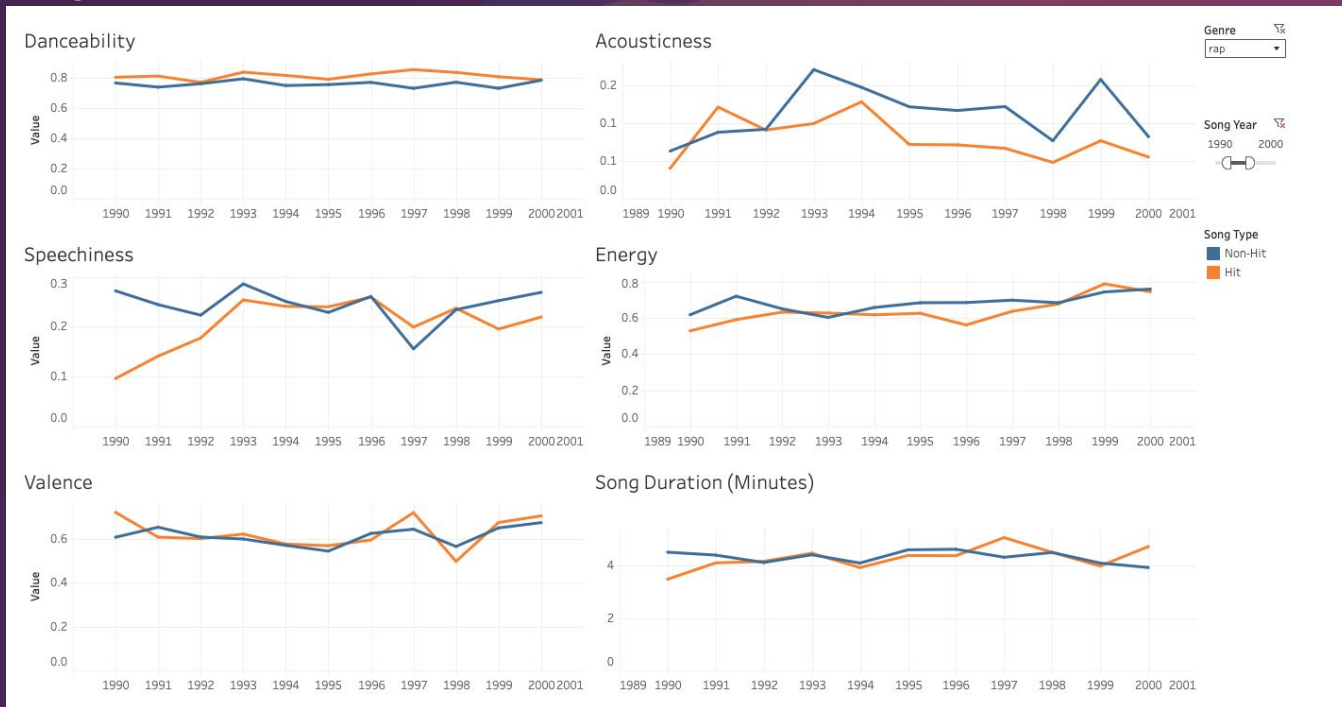
Use Case: Explore songs related to a song of interest by similar audio feature values





# Insights + Use Case 4

Use Case: Visualize trends in audio features of hit vs non-hit songs for a specific genre



# Viz Techniques Used

## Tools

- Python (Data Cleaning and Processing)
- Tableau (Data Visualization)
- Html/CSS/Javascript (Building the UI)

## Chart Types

- Radar
- Line
- Bubble
- Heatmap
- Scatter (Quadrant)

## Marks

- Point
- Line

## Channels

- Color
- Size
- Position



# Final Product & Demo

- [Link to the Demo](#)





# Thanks!

Any questions?

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