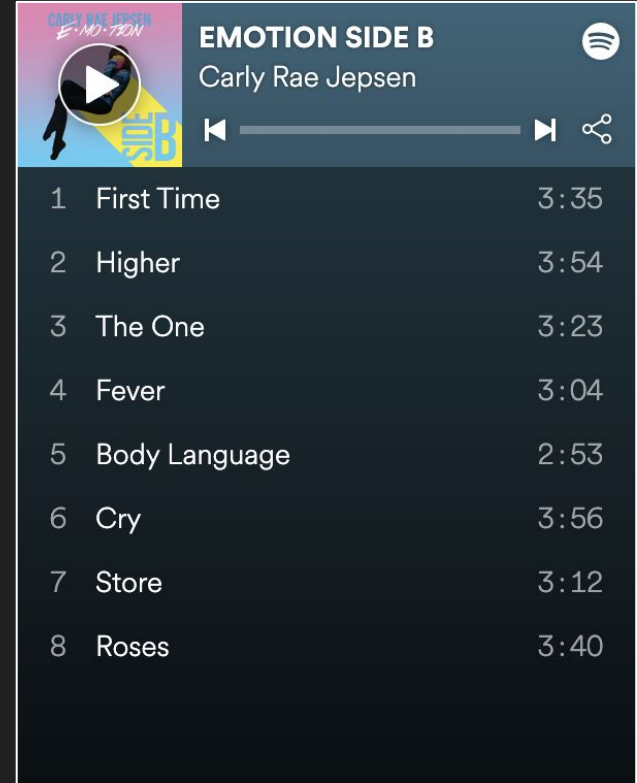
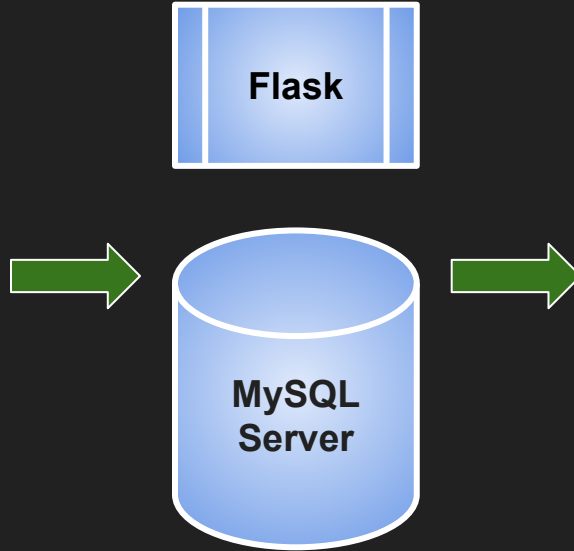


Mix That Tweet

Henry Fellerhoff, Brian Nguyen, Sophie Von Hatten

The System



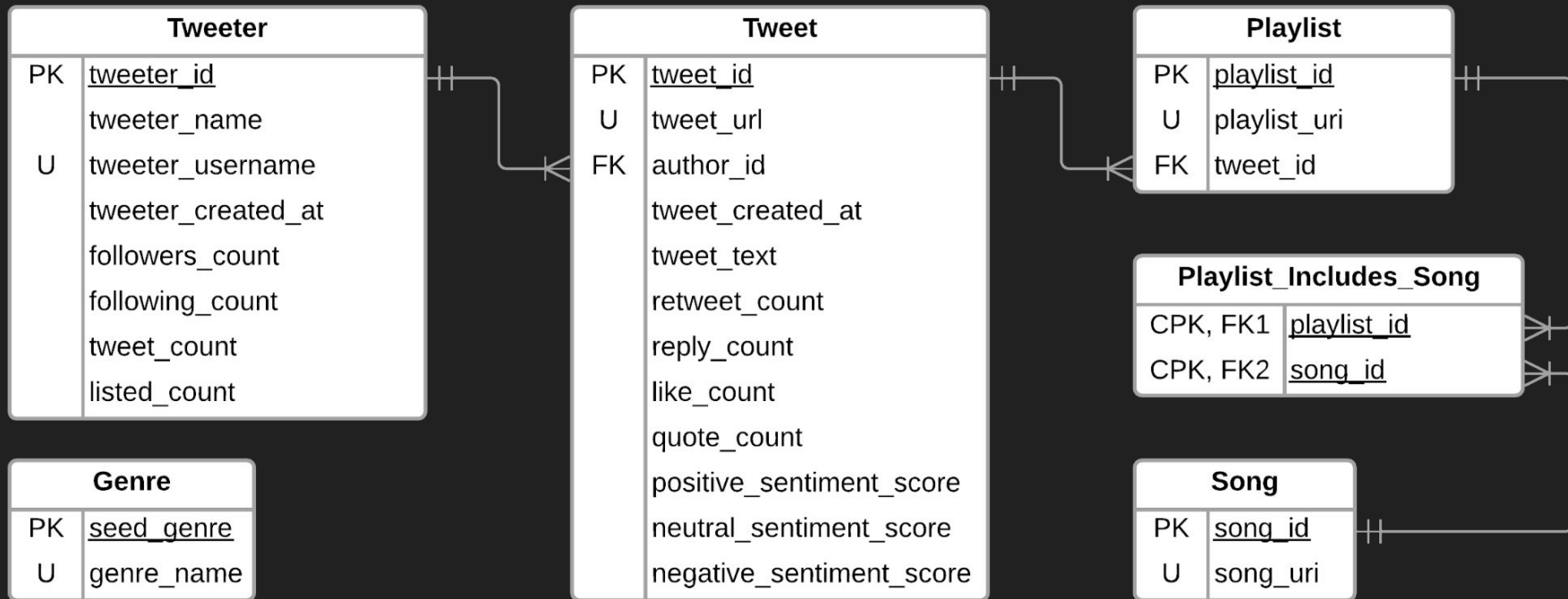
The Mission

- This project is being developed for Twitter and Spotify
- The mission of these companies with regard to this project is to showcase the capabilities and ease-of-use of their APIs for third-party developers
- Both companies do business in the social media, music, and data industries

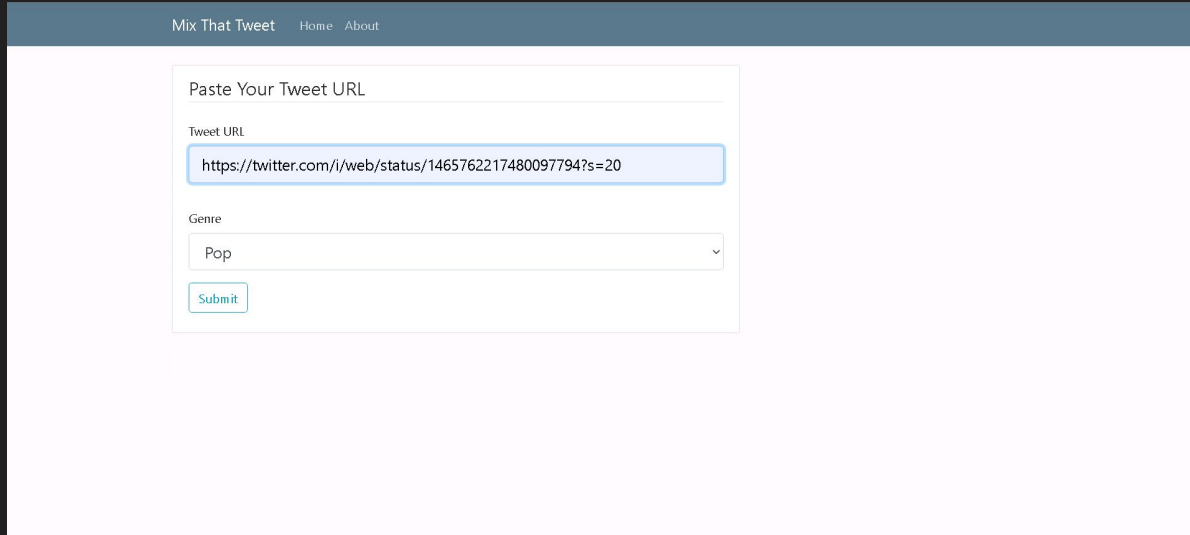
Project Scope

- “Problem”:
 - Finding unique and creative ways to generate playlists of songs
- Overall goal:
 - The project is meant to generate a playlist of 10 songs based on natural language sentiment values analyzed on a given tweet. This can provide users with a creative means to finding new music, bridging a gap between two forms of self expression.
- Subsystem boundaries:
 - User management system: Handling user data and playlists was not one of the goals of this project, but rather just gathering songs that expressed a Tweet for the user to gather a reaction and build viralability.
- Users:
 - Twitter and Spotify users

Database Design



Project Demonstration & Screenshots



The screenshot shows a web application titled "Mix That Tweet" with a navigation bar containing "Home" and "About" links. The main content area features a form for processing a tweet URL. The form includes a text input field labeled "Paste Your Tweet URL" containing the URL "https://twitter.com/i/web/status/1465762217480097794?s=20". Below this is a dropdown menu labeled "Genre" with "Pop" selected. A "Submit" button is positioned at the bottom of the form.

Mix That Tweet Home About

Paste Your Tweet URL

Tweet URL

<https://twitter.com/i/web/status/1465762217480097794?s=20>

Genre

Pop

Submit

Your Tweet has been updated! Your playlist will now reflect these changes.

I do not dress for the male gaze I dress for my psychiatrist to say "cute sweater!" when she sees me once a month

— holy_schnitt

Success! We've created a playlist for you with 10 pop songs.

Want some different songs?

Genre

Turkish

Remix!



Lost Boy
Ruth B.



Break from Love
Trey Songz



Juke Jam (feat. Justin Bieber & Towkio)



Your Tweet has been updated! Your playlist will now reflect these changes.

I do not dress for the male gaze I dress for my psychiatrist to say "cute sweater!" when she sees me once a month

— holy_schnitt

Success! We've created a playlist for you with 10 disney songs.

Want some different songs?

Genre

Turkish

Remix!



Your Tweet has been updated! Your playlist will now reflect these changes.

I love chocolate! There, I said it. #NationalChocolateDay #TellTheTruthDay <https://t.co/0krlsB4YRq>

— TheGEICOGecko

Success! We've created a playlist for you with 10 indie-pop songs.

Want some different songs?

Genre

Turkish

Remix!



How Soon Is Now?

Various Artists



No Rest for the Wicked

Lykke Li




Hunger for the Pine


alt-J



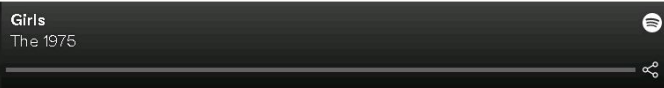



Hunger of the Pine
alt-J






Girls
The 1975





Every Other Freckle
alt-J






You Only Live Once
The Strokes







Love Will Tear Us Apart
New Order, Joy Division





Reptilia
The Strokes





Loser
Beck





FOR THE PEOPLE



Code Sample

```
175 # Tweet object to Spotify audio features
176 danceability = retweet_count / (followers_count / 200) # Highest retweet count to date
177 valence = positive_sentiment_score
178
179 instrumental_modifier = neutral_sentiment_score if neutral_sentiment_score is 0 else 0.01
180 instrumentality = reply_count / (like_count * instrumental_modifier)

```

```
26 def get_recommendations(attributes, genre = 'Pop'):
27     target_danceability = clamp(attributes['danceability'], 0.1, 0.9),
28     target_instrumentality = clamp(attributes['instrumentality'], 0, 1),
29     target_valence = clamp(attributes['valence'], 0, 1),
30
31     try:
32         results = spotify.recommendations(
33             seed_genres=[genre],
34             country='US',
35             target_valence=target_valence,
36             target_danceability=target_danceability,
37             target_instrumentality=target_instrumentality,
38             target_acousticness=random.random(),
39             target_energy=random.random(),
40             target_liveness=random.random(),
41             target_loudness=random.random(),
42             target_speechiness=random.random(),
43             target_tempo=random.random(),
44             limit=10
45         )

```

```
55 def authenticate_azure_client():
56     ta_credential = AzureKeyCredential(AZURE_SUBSCRIPTION_KEY)
57     text_analytics_client = TextAnalyticsClient(
58         endpoint = AZURE_ENDPOINT,
59         credential = ta_credential)
60     return text_analytics_client
61
62 def sentiment_analysis(client, text):
63     doc = [text]
64     response = client.analyze_sentiment(documents = doc)[0]
65     positive_sentiment_score = response.confidence_scores.positive
66     neutral_sentiment_score = response.confidence_scores.neutral
67     negative_sentiment_score = response.confidence_scores.negative
68     return positive_sentiment_score, neutral_sentiment_score, negative_sentiment_score
69
70
71 # our beloved join query
72 join_data = Include.query.join(Song, Include.song_id == Song.song_id) \
73     .add_columns(Song.song_id, Song.song_uri) \
74     .join(Playlist, Playlist.playlist_id == Include.playlist_id) \
75     .add_columns(Playlist.playlist_id) \
76     .join(Tweet, Playlist.playlist_id == Tweet.playlist_id) \
77     .add_columns(Tweet.playlist_id, Tweet.playlist_id, Tweet.playlist_id) \
78     .join(Tweeter, Tweet.playlist_id == Tweeter.playlist_id) \
79     .add_columns(Tweeter.playlist_id, Tweeter.playlist_id) \
80     .filter(Include.playlist_id == playlist_id)

```

Interaction With Database

- C
 - All tables are created using the project initialization SQL files
- R
 - Data in tables are read in the Flask app to access Tweet data and generate songs in a playlist
- U
 - Data in tables are updated in the Flask app as a user inputs a pre-existing Tweet or the playlist 'Remix' button is selected
- D
 - Data of pre-existing songs in tables are deleted from the currently-generated playlist and the other playlist that include them

How We Solve The “Problem” Addressed

- The application allows for users to input a tweet they have seen, and come out with a generated playlist of songs that represent the sentiment values analyzed from that given tweet.
 - This represents the use of two APIs from different platforms meant for self expression, and finding a way to bridge the gap between the two.
 - Users can enjoy the unique qualities that both Twitter and Spotify have to offer.