

# Text Mining Project Writeup and Reflection

## Lyrics Generator

Daniel Daugherty

### Project Overview

To create a new song using the lyrics of a specific artist, I used [www.metrolyrics.com](http://www.metrolyrics.com) to gather all the data for song lyrics. By searching the album page of a specific artist, I was able to get the links to the lyrics of all the songs in the album. After compiling the lyrics from all songs within the album into a list, I utilized Markov Analysis to detect patterns in the syntax structure of a particular album to produce a new song for the album as if it were written by the original artist.

### Implementation

In order to get all the lyrics from an album, I pickled the album webpage and used Python's BeautifulSoup package to parse through and collect the links to each song within the album. For each song, I parsed through its webpage to get the lyrics and compiled all of them into a list. With this list of words, I used markov analysis to detect patterns in the order of words. For my markov analysis, I created a dictionary matching groups of 3 words with corresponding groups of words that tend to follow. Finally, to generate a new song, I randomly selected keys within the dictionary and printed out the prefixes with the corresponding suffixes.

One of the biggest design decisions I faced was choosing how many songs from a specific artist to grab. At first I tried to gather all of the songs on the artist's page; however, I felt like I was gathering a lot of data and it was difficult to collect only the song links using BeautifulSoup. I found that a more elegant solution would be using the artist's album page and collecting the songs with the name of the album within each link code. This allowed me to get a smaller selection of songs and also a more focused group of lyrics by being in the same album.

### Results

My code was able to successfully generate random lyrics based on the lyrics in any album. Typically songs contain somewhere between 159 and 300 words. To account for this, each song I produce contains a random amount of words somewhere between 159 and 300. Unfortunately the generated lyrics don't make much sense, but I still think it was really cool to write lyrics like several various artists did.

## Examples of generated lyrics

Artist: Adele

Album: 25

for there is something in your loving that tears down my walls i wasn't ready i'm ready now i'm heading  
straight for you you will only be eternally the one that i belong to the sweetest devotion i've known  
sweetest it's the sweetest sweetest it's the sweetest sweetest it's the sweetest sweetest it's the sweetest  
sweetest it's the sweetest sweetest it's the sweetest sweetest it's the sweetest sweetest it's the sweetest  
sweetest it's the sweetest sweetest it's the sweetest sweetest it's the sweetest sweetest it's the sweetest  
sweetest it's the sweetest devotion i've known i'll forever be whatever you want me to be i'll go under  
and all over for your clarity when you wonder if i'm gonna lose my way home just that come i'll be  
yours all alone i wasn't ready i'm ready now i'm heading straight for you you will only be eternally the  
one that i belong to the sweetest devotion i've known i've been looking for baby in every face that i've  
ever known and there is something 'bout the way you love me that finally feels like home all my you're  
my darkness you're the right kind of madness and you're my you're my despair you're my everywhere  
the sweetest devotion hitting me like an explosion all of my doubts pull me hold me tight don't let baby  
give me light i miss i miss you when the lights go out it illuminates all of my i've been frozen the  
sweetest devotion i've known i'll forever be whatever you want me to be i'll go under and all over for  
your clarity when you

Artist: Queen

Album: Greatest Hits

gonna be a big man of me get oh you gonna take me home tonight down beside that red fire light oh  
you gonna let it all hang out fat bottomed girls fat bottomed all right ride 'em cowboy fat bottomed girls  
you make the rocking world go round fat bottomed girls you make the rocking world go round hey i  
was just a skinny lad never knew no good from bad but i knew love before i left my nursery left alone  
with big fat fanny she was such a naughty nanny heap big you made a bad boy out of me hey i've been  
singing with my band across the across the land i've seen every blue eyed floozy on the way but their  
beauty and their style went kind of smooth after a while take me to them naughty ladies every time  
won't you take me home tonight oh down beside that red fire light you gonna let it all hang out fat  
bottomed girls you make the rocking world go round get on your bikes and ride them fat bottomed girls  
we are not in a position to display these lyrics due to licensing sorry for the i want to be free baby oh  
how i want to break yea i i i want i want to break yea i i i want i want to be free baby oh how i want to  
break free i want to break free i've got to break free i've fallen in love i've fallen in love it's strange but  
it's hey yea i can't get over the way

Artist: Justin Bieber

Album: My Worlds Acoustic

you needed a little time for my mistakes it's funny how you use that time to have me replaced but did  
you think that i wouldn't see you out at the movies what you doin' to me you're takin' him where we  
used to and now we're and where do we when there's is no road to get to your lets start over so it's up to  
and its up to and its up to and its up to that we meet in the on our way back down to our way back  
down to back down to down to earth x8 you were always and i live out of so tell me how i can make a i  
close my eyes and i can see a better day i close my eyes and pray i close my eyes and i can see a better  
day i close my eyes and i can see a better day i close my eyes and pray i close my eyes and pray i close  
my eyes and pray i close my eyes and i can see a better day i close my eyes and pray i close my eyes  
and i can see a better day i close my eyes and i can see a better day i close my eyes and pray i close my  
eyes and pray i close my eyes and pray i close my eyes and i can see a better day i close my eyes and  
pray i close my eyes and i can see a better day i close my eyes and i i won't let that

Artist: Taylor Swift

Album: 1989

hunt you around you say you'll remember me standing in a nice staring at the sunset babe red lips and rosy cheeks say you'll see me again even if it's just just in your wildest dreams in your wildest dreams even if it's just in your wildest dreams wildest dreams i never dreamed of this this love this this this this love this this this love this this this this love is bad this love is bad this love is good this love is glowing in the oh these hands had to let it go free and this love came back to oh this love that's a permanent mark this love is bad this love is good this love is a life back from the oh these hands had to let it go free this love came back to oh this this this love this this this this this this love this this this this this this love this this this love this this this this love this this this love this this this love this this this love this this this love this this this love this this this love love came back to oh oh struggle through the night for someone new and i could go on and on and on and on lanterns flickered in the mind only you but you were still been losing on sinking ships you showed just in time this love is bad this love is glowing in the oh these hands had to let it

Artist: The Beatles

Album: Abbey Road

me cry because the sky is it makes me cry because the sky is it makes me cry because the sky is it makes me cry because the sky is it makes me cry because the sky is it makes me cry because the sky is ah you're gonna carry that weight a long time here come old flat top he come groovin' up slowly he got joo joo eyeballs he one holy rollers he got hair down to his knee got to be a joker he just do what he please he wear no shoeshine he got toe jam football he got monkey finger he shoot coca cola he say i know you know me one thing i can tell you is you got to be a joker he just do what he please he wear no shoeshine he got toe jam football he got monkey finger he shoot coca cola he say i know you know me one thing i can tell you is you got to be a joker he just do what he please he wear no shoeshine he got toe jam football he got monkey finger he shoot coca cola he say i know you know me one thing i can tell you is you got to be good looking cause he's so hard to see come together right now over me i want to tell you i feel hung up and i don't know something in the way she woos me i don't want to leave her now

## Reflection

I feel like I learned a lot throughout this project. Coming into this project, I had no previous experience working with parsing through web page source data and now I feel like I have no problem teaching it to others. One of the things I think could be improved in future projects is unit testing. I found that I would run into type errors or other kind of simple errors late into the project which could have easily been identified with doctests. If I had more time to work on this project I would try to get the lyrics to make more sense and have more structure. Instead of just a block of text, I think it would be interesting to work on producing randomly generated lines of a song that would have a rhyme scheme.