Since I'm not used to using Spotify, I used my rock-loving friend's Spotify and my China-based NetEase cloud as a comparison. My friend's music library has a total of 637 songs, of which "rock" and "pop" are the majority, with a few opera and piano songs.

Listening to music on Spotify: When I chose the 'Rock' category as the first song to start playing randomly, about 80 songs were played, and among these 80 songs, after clicking on the first to the thirtieth randomly played song, pop songs started to cut in, and then the 'Rock' category appeared again after 5 songs or so. ' category appears again. The overall random play of 80 songs, if I click the 'like' button on 'rock' music along the way, will then suggest about 5 songs one after the other, but what I've found when using it as a new user of Spotify, is that if I don't have a 'like' button on a song that I haven't previously But as a new user of Spotify, I found that if I clicked 'like' a few times on music that I hadn't 'liked' before, the music recommendation algorithm would try very hard to recommend relevant music to me, which made me feel uncomfortable because I was a new user, and it should recommend more diversified songs, rather than recommending a certain type of music frequently because the user 'LIKES' it, leading to a possible aversion to the genre.

Task1

I used Task1 to look at the same number of Spotify songs, 80 songs. Focusing mainly on 'rock', I judged the accuracy of the recommendation algorithm based on different aspects of the song's feature set. As rock is most noticeable in the fact that both blast and time signature are fixed, rock is generally four beats with the occasional eight, but rock is most noticeable in the more pronounced tempo displayed on the audio.

Songs with a bright rhythm have a more clearly recognizable character, more instrumental songs are more similar to each other than more lyrical songs, and time_signature Rhythmic four-beat music is more focused, with keys concentrated in the range of 5 to 8, and occasionally more unusual ones such as Beyoncé's 10-key music, for example.

But Task1 can't recommend rock because rock is characterized by four beats and 'loudness', but this characteristic is common in pop and ethnic music, which can be predicted by 'loudness' and 'instrumentalness'. In this comparison, a high degree of similarity can be found between music that focuses on rhythm and instrumental music. Soothing, vocals, in terms of prediction, features are harder to find. But on the comparison one can find formulae and rhythms similar to 'pop', 'rap', 'rock' and other different genres of songs with high cosine similarity. Very similar songs will be the

same in the way the music is composed, for example rock uses four beats, pop uses 4 or 8 beats, raising 'loudness', 'high energy'.

Task 4

In task 4 I used PCA to create a graph visualising a total of similar songs.

I chose the song 'Kenya Grace - Strangers' as the reference song, which favours electronic music mixed with pop music, and in the image I chose 'Bryson Tiller - Whatever She Wants', 'Benson Boone - Beautiful things', 'Jack Harlow - Lovin On Me', and 'Bryson Tiller'. Harlow - Lovin On Me', 'David Kushner - Daylight' as suggested song references for 'Strangers'. ' as suggested song references. The song 'Stranger' is a more mixed song, the song's loudness belongs to a lower or normal value, so its recommended song cannot be an opera type song and time_signature is four beats, the time_signature of several songs recommended by PCA are also four beats, but the 'instrumentality' is not very pronounced.

So there are rock, rap, and pop types of these songs. Soothing electronic music that isn't exciting doesn't have a very distinctive signature, and is similar to many songs in terms of beat, but the algorithm can't accurately recommend songs that are 60% or more similar to 'Kenya Grace - Strangers'.