

Project PlaylistApp

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Summary:

Create a popular playlist application that accepts song playlists along with their popularities, stores the most popular 1024 playlists, and i) suggests playlists given a song and ii) suggests songs when the user starts typing a song name.

App form: website

Reason: Simple, appropriate to accomplish the functions

Using language: Python

Reason: Simple, all members have background of python

Accomplishment:

Until recent days, we have made a simple website and designed algorithms to sort the songs and playlists and search them.

1. Algorithm:

(1) Restore:

We decided to use dictionary to accomplish restoring the data.

(2) Sort: using quicksort

Quicksort has a higher efficiency in most cases and it causes less data movement.

(3) Search: using trie

Advantages of trie:

The lookup time is predictable which is $O(k)$ where k is the size of keys;

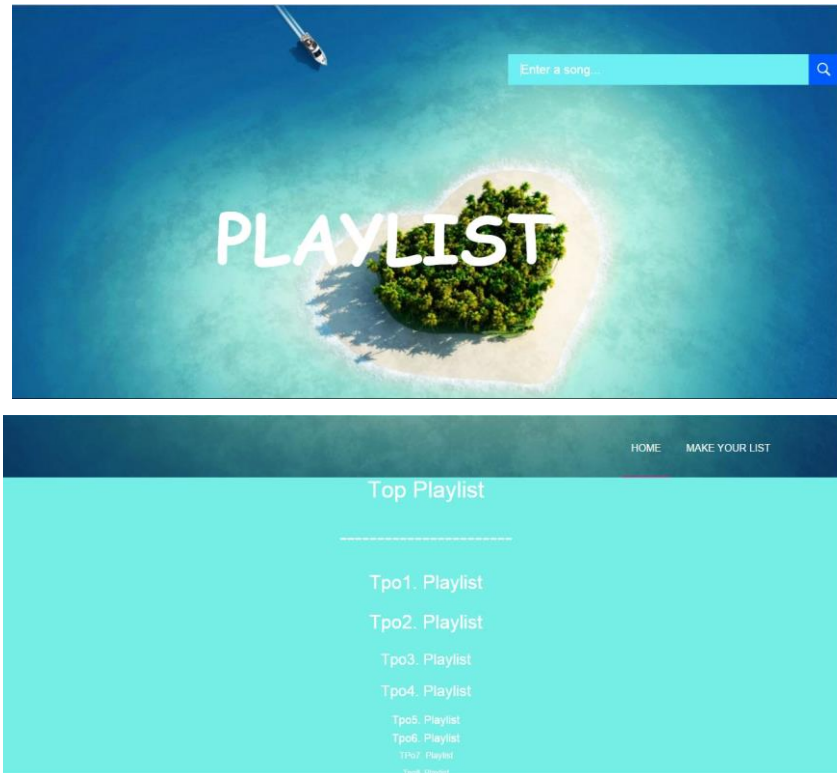
Lookup can take less than k time if the song we look up is not in the dictionary;

Deletion is straightforward in trie;

We can quickly look up prefixes of keys, enumerate all entries with a given prefix. This is very suitable for accomplish the searching function of the project.

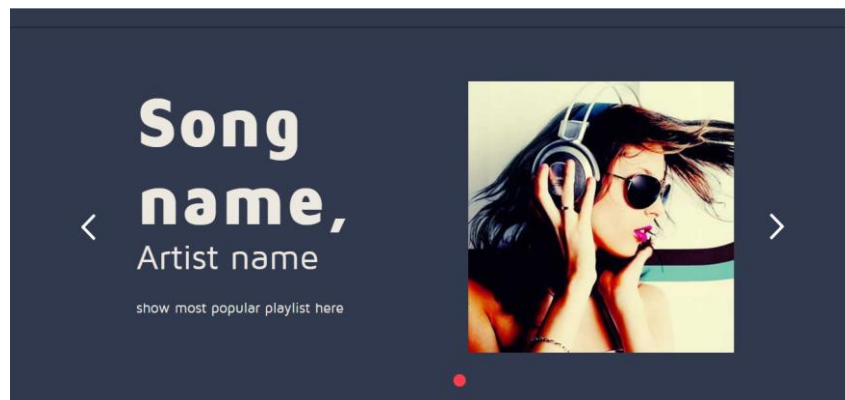
2. Website:

Webpage 1:

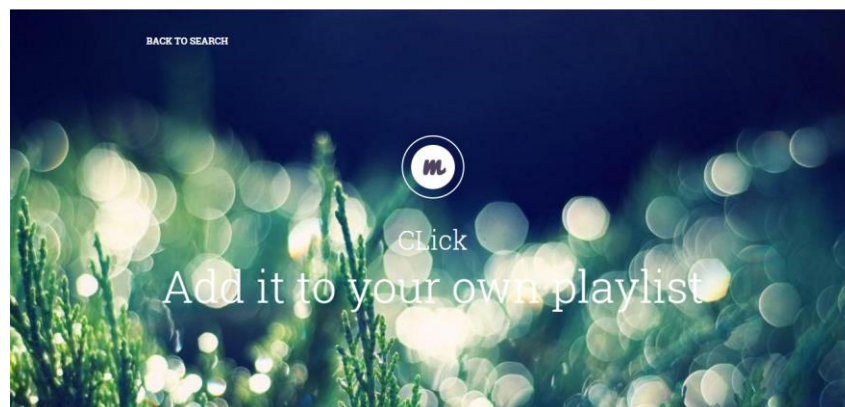


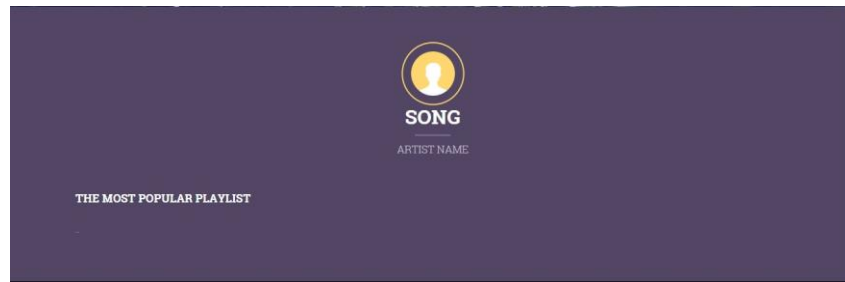
Webpage 1 gives the function of searching a song on the top and the function of making a new playlist in the medium and shows top 8 most popular playlists on the bottom.

Webpage 2:



Webpage 2 shows the most popular playlist the song searched in webpage 1 is in.
Webpage 3:





Webpage 3 gives the function of adding the song searched in webpage 1 into user's own playlist on the top and shows the most popular playlist the song is in on the bottom.

3. Database:

We have set up the environment of the database, we are going to add the data in it in the few days.

Plan:

1. Finish the program
2. Accomplish design and layout of the website
3. Transmit the data into the database and upload it into AWS
4. Connect the website with the program