MUSIC PLAYER

A PROJECT REPORT

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Abstract

This project entitled ‘Music Player’ aims at developing a platform independent web application for accessing and playing songs over the internet. Owing to the growing usage of seamless access to entertainment, there must be appropriate improvements in performance and stability of applications. Time and Space constraints need to be resolved for storing and playing songs seamlessly over the internet. Due to the popularity and collection of songs we use online sources to access over thousands of songs in the future.

Introduction

The rise of streaming websites for entertainment purposes gave rise to new opportunities and areas to build and work upon. The functions of playing music have become essential in a device. Gone are the days of buying CD/DVDs and a buffy speaker system. Many recent improvements focus on portability of access and using user friendly applications capable of running on any platform. It is very convenient, but it has faced its own challenges like internet bandwidth and databases for storing such high volumes of music data. . The songs are sorted according to the user's style of listening to music and shows the recommended list of songs to be played next. The ease of accessibility, fresh and smooth UI can help users to relax and access music. This project is a first step in bringing to life a platform independent web app for the same.
The objective of this project is to design and implement a user friendly, platform independent media player which can play most audio files like mp3, wav, etc. directly from online hosts or locally in addition to viewing album art images and possibly lyrics in the future.

- **MOTIVATION**

In the last few years, MP3 players have made it possible to take your whole music collection with you anywhereDigital music in the form of MP3 files has exploded in popularity in the last few years. Then, it became possible to store your whole music collection on an MP3 player the size of a deck of cards and take it with you anywhere.
Now, in the present, streaming is the future and that's what motivated me to make this web app.

Project Description

A fully functional web player that is compatible with all platforms and can seamlessly be used to play, pause, repeat and shuffle music from its online library along with a host of future possibilities such as traversing through keyword based searching, artist profiles, etc.

Modules

1. Sorting and Repeating:

This algorithm effectively puts all the elements into a hat; it continually determines the next element by randomly drawing an element from the hat until no elements remain.
For example, if 25% of the songs a user has in a given playlist are by Taylor Swift. Then in a uniformly random shuffle, the probability that any of the Taylor Swift songs is followed by another Taylor Swift song is around 25%.The probability that a third Taylor Swift song in a row plays is around 6%. That's small, but still much more than most people intuitively expect .What people actually consider "random" is when similar songs are spread more evenly which is accomplished by the shuffle algorithm.
This algorithm has a time complexity of O(n), meaning the time it takes to decide the next song is very minimal.

2. The Music Player Interface

This is implemented with a Js carousel which slides through content encapsulated in a list of strings that contain song metadata, album art link and song link, all of which is hosted online in the public domain of AWS or similar. This is how additional content may be added into the player endlessly and this works with the Sorting algorithm used in a seamless manner

Tools Used

The Front end of the application was made using HTML, CSS and Javascript.

Sample Code

Metadata for songs:

```
var songs = [
        {
          title: "rockstar",
          artist: "Post Malone, 21 Savage",
          cover: "https://s3-us-west-2.amazonaws.com/s.cdpn.io/308622/rockstar-album-cover.jpg",
                                                                                audioFile:
"https://s3-us-west-2.amazonaws.com/s.cdpn.io/308622/Post%20Malone%20-%20rockstar%20ft.%2021%20Sava
ge%20(1).mp3",
          color: "#c3af50"
        },
        {
          title: "Let You Down",
          artist: "NF",
          cover: "https://s3-us-west-2.amazonaws.com/s.cdpn.io/308622/perception-album-cover.png",
                                                                                audioFile:
"https://s3-us-west-2.amazonaws.com/s.cdpn.io/308622/NF%20-%20Let%20You%20Down.mp3",
          color: "#25323b"
        }
];
```

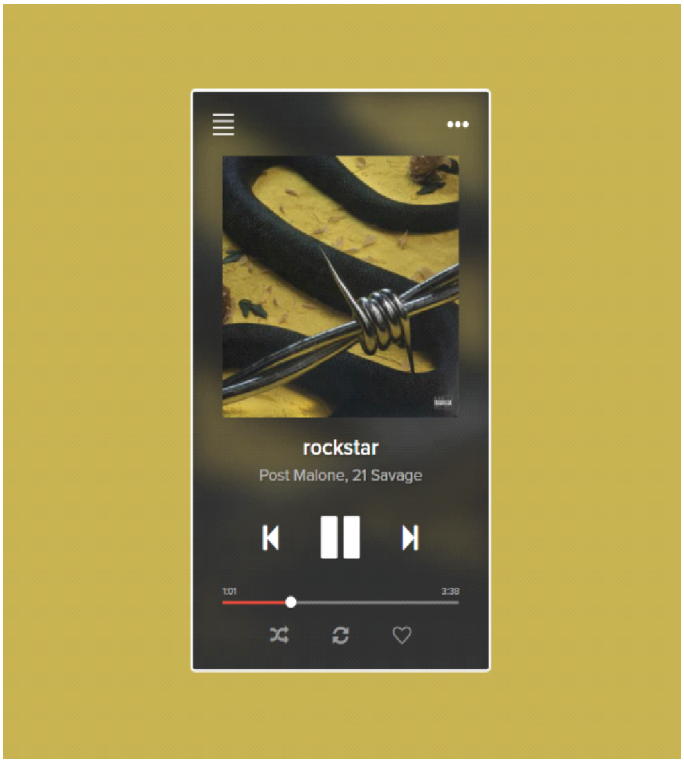
To toggle between pause and play:

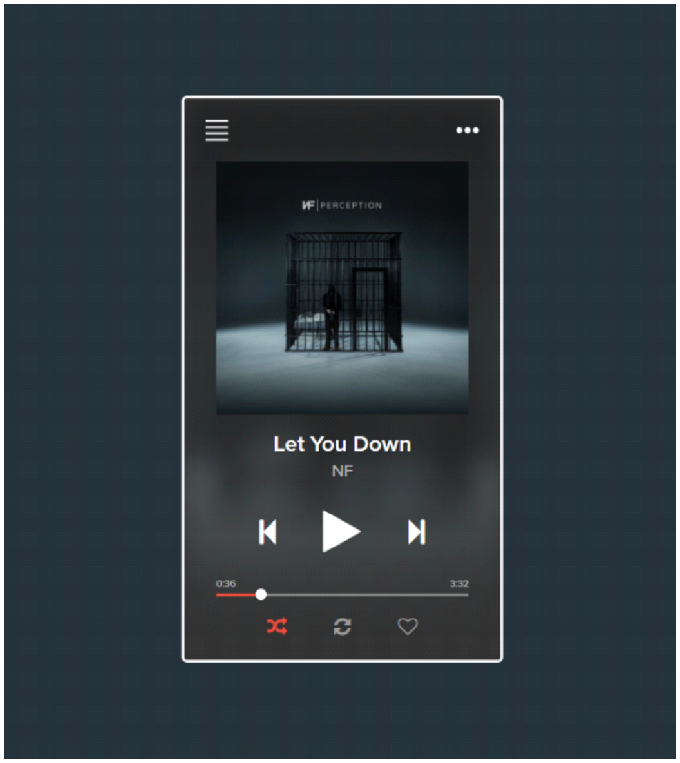
```
function togglePlay() {
   player.volume = 0.5;
     if(player.paused) {
   player.play();
  } else {
   player.pause();



  }
}
```

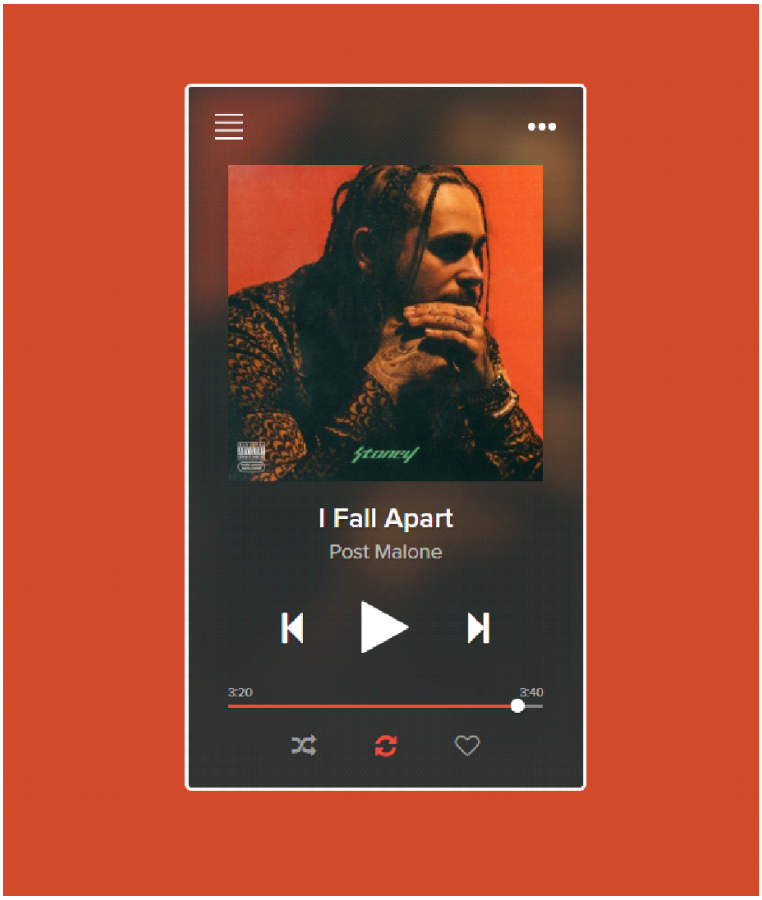
Time seek:

```
function formatTime(time) {
  var min = Math.floor(time / 60);
  var sec = Math.floor(time % 60);
  return min + ':' + ((sec<10) ? ('0' + sec) : sec);
}
```

SCREEN SHOTS:







CONCLUSION

This project aims at developing a website for accessing and playing songs over the internet has been developed with javascript elements such as list , carousel and queue with the help of html and css in the frontend. To make the customer experience better the project uses the discussed parameters. It efficiently manages performance and memory and enhances user experience with user specified songs