

SPOTIFY MUSIC WEB APPLICATION DESIGN
A COURSE PROJECT REPORT

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Under the guidance of

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in partial fulfilment for the Course

of

User Interface Design

in **CINTEL**



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BONAFIDE CERTIFICATE

Certified that this mini project report "**SPOTIFY MUSIC WEB APPLICATION DESIGN**" is the bonafide work of Nilay A (RA2011033010056), Prem Kumar (RA2011033010057), Ashish Prakash Singh (RA2011033010060) and Rimendra Kumar Agrawal(RA2011033010064) who carried out the project work under my supervision.

SIGNATURE

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ABSTRACT

Digital music distribution is increasingly powered by automated mechanisms that continuously capture, sort and analyze large amounts of Web-based data. This paper deals with the management of songs audio features from a statistical point of view. In particular, it explores the data catching mechanisms enabled by Spotify Web API, and suggests statistical tools for the analysis of these data. Special attention is devoted to songs popularity and a Beta model including random effects is proposed in order to give a first answer to questions like: which are the determinants of popularity? The identification of a model able to describe this relationship, the determination within the set of characteristics of those considered most important in making a song popular is a very interesting topic for those who aim to predict the success of new products.

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INTRODUCTION

Music plays an important role in everyday life of people, and with digitalization, large collections of musical data are formed, which tend to be further cumulated by music lovers (Sloboda, 2011). This has led to music collections, not only on the private shelf as audio or video discs and domain discs, but also on the hard disk and online, to grow beyond what was previously impossible. With the advent of new technologies, it has become impossible for a single individual to keep track of the music and the relationships between different songs.

SPOTIFY:

Spotify (SpotifyWebAPI) is one of the most famous music Apps in the world, a program of the last generation that has grown exponentially over the last few years. This platform allows you to listen to music streaming to computers, smartphones and tablets, choosing from more than 30 million tracks, old and new, of the main international record companies, without having to purchase individual songs or albums legally.

In this section a brief description of the steps necessary to connect Spotify Web API to the R software are reported. First you have to create an app on Spotify's developer platform, accessing this dashboard: After accessing the page, you have to login and create an app: 1. give a name to the application and provide a brief description; 2. then you have to specify the purpose for which it is created (example for commercial purposes, teaching, etc); 3. finally, accept the conditions to complete the account configuration. After this procedure, user identification code and password are generated, both are alphanumeric codes that are essential to release the access token to connect.

Budget:

Required budget (including breakdowns and shared cost):

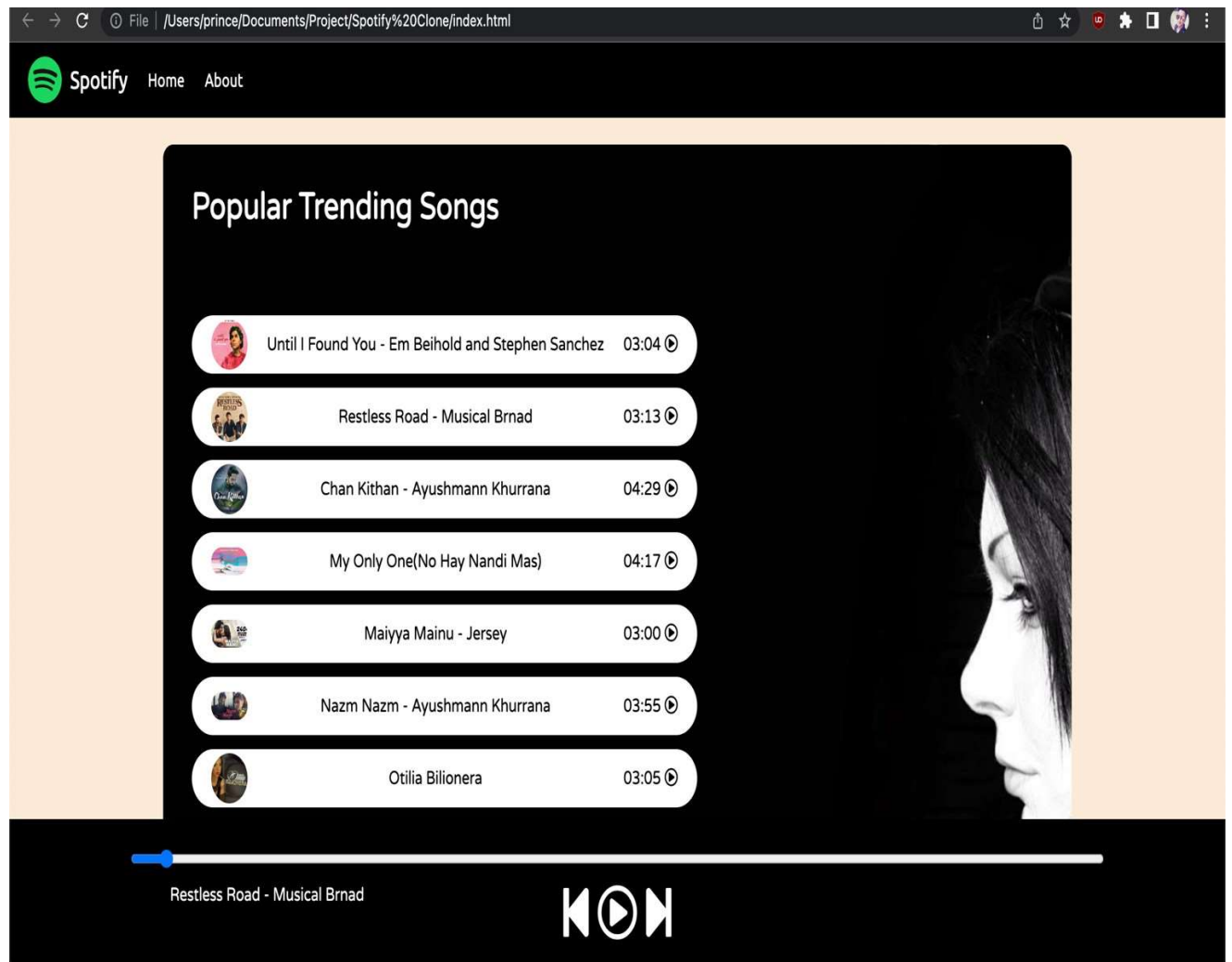
SL#	Item Description	Amount
1	Research on streaming platforms	2000
2	Computers, laptops, smart phones, tabs	400,000
3	Web based system design and development	300,000
4	Mobile apps development	300,000
5	Server procurement / rent	100,000
6	Partnership with bands and artists	1,000,000
7	Partnership with music producers	3,000,000
8	Advertisement through newspapers and online advertisement	250,000
9	Final report on effectiveness of the project	10,000
10	Miscellaneous	500,000
	Total	5,562,000

Procurement Plan

Procurement plan:

What		Why	When	Amount
Description	Type	Reason	Timing	Tk.
Computers, laptops, smart phones, tabs	Hardware	For developing and testing the system	Within two weeks of project offering (PO)	400000
Web based System	Software	System development	Within second month	300,000
Mobile App	Software	Mobile app development	Within second month	300,000
Various Partnerships	Content	Content licencing	Within third month	4,000,000
Server procurement / rent	System	Deploying the system for target users	Within second month	100,000
Advertisement through newspaper facebook etc.	Media	Not the mainstream functions of the project	In the seventh month	250,000
Feedback gathering and further polishing for full release	Software	Getting ready for launch	In the seventh and eighth month	20,000

User Interface Layout:



Code:

HTML

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Spotify - Your favourite music is here</title>

    <link rel="stylesheet" href="style.css">

  </head>

<body>

  <nav>

    <ul>

      <li class="brand"> Spotify</li>

      <li>Home</li>

      <li>About</li>

    </ul>

  </nav>

  <div class="container">

    <div class="songList">

      <h1>Popular Trending Songs</h1>

      <div class="songItemContainer">

        <div class="songItem">

          <img alt="1">

          <span class="songName">Let me Love You</span>

          <span class="songlistplay"><span class="timestamp">03:04 <i id="0"

class="far songItemPlay fa-play-circle"></i> </span></span>

          </div>

          <div class="songItem">

            <img alt="1">
```

```
<span class="songName">Let me Love You</span>
<span class="songlistplay"><span class="timestamp">03:13 <i id="1"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
<img alt="1">
<span class="songName">Let me Love You</span>
<span class="songlistplay"><span class="timestamp">04:29 <i id="2"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
<img alt="1">
<span class="songName">Let me Love You</span>
<span class="songlistplay"><span class="timestamp">04:17 <i id="3"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
<img alt="1">
<span class="songName">Let me Love You</span>
<span class="songlistplay"><span class="timestamp">03:00 <i id="4"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
<img alt="1">
<span class="songName">Let me Love You</span>
<span class="songlistplay"><span class="timestamp">03:55 <i id="5"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
<img alt="1">
<span class="songName">Let me Love You</span>
```

```
<span class="songlistplay"><span class="timestamp">03:05 <i id="6"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">04:58 <i id="7"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">03:05 <i id="8"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">04:44 <i id="9"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">03:47 <i id="10"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">04:42 <i id="11"
class="far songItemPlay fa-play-circle"></i> </span></span>
```

```
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">04:56 <i id="12"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">04:23 <i id="13"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
<div class="songItem">
  <img alt="1">
  <span class="songName">Let me Love You</span>
  <span class="songlistplay"><span class="timestamp">02:50 <i id="14"
class="far songItemPlay fa-play-circle"></i> </span></span>
</div>
</div>
</div>
<div class="songBanner"></div>
</div>
```

```
<div class="bottom">
  <input type="range" name="range" id="myProgressBar" min="0" value="0"
max="100">
  <div class="icons">
    <!-- fontawesome icons -->
    <i class="fas fa-3x fa-step-backward" id="previous"></i>
    <i class="far fa-3x fa-play-circle" id="masterPlay"></i>
    <i class="fas fa-3x fa-step-forward" id="next"></i>
```

```
</div>
<div class="songInfo">
   <span
id="masterSongName">Warriyo - Mortals [NCS Release]</span>
</div>
</div>
<script src="script.js"></script>
<script src="https://kit.fontawesome.com/26504e4a1f.js"
crossorigin="anonymous"></script>
</body>
</html>
```

CSS-

```
@import url('https://fonts.googleapis.com/css2?family=Ubuntu&display=swap');
@import url('https://fonts.googleapis.com/css2?family=Varela+Round&display=swap');
body{
  background-color: antiquewhite;
}

*{
  margin: 0;
  padding: 0;
}

nav{
  font-family: 'Ubuntu', sans-serif;
}

nav ul{
  display: flex;
  align-items: center;
  list-style-type: none;
```

```
    height: 65px;
    background-color: black;
    color: white;
}
```

```
nav ul li{
    padding: 0 12px;
}
```

```
.brand img{
    width: 44px;
    padding: 0 8px;
}
```

```
.brand {
    display: flex;
    align-items: center;
    font-weight: bolder;
    font-size: 1.3rem;
}
```

```
.container{
    min-height: 72vh;
    background-color: black;
    color: white;
    font-family: 'Varela Round', sans-serif;
    display: flex;
    margin: 23px auto;
    width: 70%;
    border-radius: 12px;
    padding: 34px;
    background-image: url('bg.jpg');
}
```

```
.bottom{
  position: sticky;
  bottom: 0;
  height: 130px;
  background-color: black;
  color: white;
  display: flex;
  justify-content: center;
  align-items: center;
  flex-direction: column;
}
```

```
.icons{
  margin-top: 14px;
}
```

```
.icons i{
  cursor: pointer;
}
```

```
#myProgressBar{
  width: 80vw;
  cursor: pointer;
}
```

```
.songItemContainer{
  margin-top: 74px;
}
```

```
.songItem{
  height: 50px;
  display: flex;
```

```
background-color: white;

color: black;
margin: 12px 0;
justify-content: space-between;
align-items: center;
border-radius: 34px;
}

.songItem img{
  width: 43px;
  margin: 0 23px;
  border-radius: 34px;
}

.timestamp{
  margin: 0 23px;
}

.timestamp i{
  cursor: pointer;
}

.songInfo{
  position: absolute;
  left: 10vw;
  font-family: 'Varela Round', sans-serif;
}

.songInfo img{
  opacity: 0;
  transition: opacity 0.4s ease-in;
```



```
}
```

```
@media only screen and (max-width: 1100px) {  
  body {  
    background-color: red;  
  }  
}
```

JavaScript-

```
console.log("Welcome to Spotify");
```

```
// Initialize the Variables
```

```
let songIndex = 0;
```

```
let audioElement = new Audio('songs/1.mp3');
```

```
let masterPlay = document.getElementById('masterPlay');
```

```
let myProgressBar = document.getElementById('myProgressBar');
```

```
let gif = document.getElementById('gif');
```

```
let masterSongName = document.getElementById('masterSongName');
```

```
let songItems = Array.from(document.getElementsByClassName('songItem'));
```

```
let songs = [
```

```
  {songName: "Until I Found You - Em Beihold and Stephen Sanchez", filePath:  
"songs/1.mp3", coverPath: "covers/1.jpg"},
```

```
  {songName: "Restless Road - Musical Brnad", filePath: "songs/2.mp3", coverPath:  
"covers/2.jpg"},
```

```
  {songName: "Chan Kithan - Ayushmann Khurrana", filePath: "songs/3.mp3",  
coverPath: "covers/3.jpg"},
```

```
  {songName: "My Only One(No Hay Nandi Mas)", filePath: "songs/4.mp3", coverPath:  
"covers/4.jpg"},
```

```
  {songName: "Maiyya Mainu - Jersey", filePath: "songs/5.mp3", coverPath:  
"covers/5.jpg"},
```

```

    {songName: "Nazm Nazm - Ayushmann Khurrana", filePath: "songs/6.mp3",
coverPath: "covers/6.jpg"},
    {songName: "Otilia Billionera", filePath: "songs/7.mp3", coverPath: "covers/7.jpg"},
    {songName: "Kahani - Laal Singh Chaddha", filePath: "songs/8.mp3", coverPath:
"covers/8.jpg"},
    {songName: "BTS - Megan thee stallion(remix)", filePath: "songs/9.mp3", coverPath:
"covers/9.jpg"},
    {songName: "O saajna - Akhil Sachdeva", filePath: "songs/10.mp3", coverPath:
"covers/10.jpg"},
    {songName: "Unstopabble - Sia ", filePath: "songs/11.mp3", coverPath:
"covers/11.jpg"},
    {songName: "Luis Fonsi", filePath: "songs/12.mp3", coverPath: "covers/12.jpg"},
    {songName: "Jo Tainu Dhoop Lagya Ve", filePath: "songs/13.mp3", coverPath:
"covers/13.jpg"},
    {songName: "Shape Of You - Ed Sheeran ", filePath: "songs/14.mp3", coverPath:
"covers/14.jpg"},
    {songName: "Its Always With You ", filePath: "songs/15.mp3", coverPath:
"covers/15.jpg"},
]

```

```

songItems.forEach((element, i)=>{
    element.getElementsByTagName("img")[0].src = songs[i].coverPath;
    element.getElementsByClassName("songName")[0].innerText = songs[i].songName;
})

```

// Handle play/pause click

```

masterPlay.addEventListener('click', ()=>{
    if(audioElement.paused || audioElement.currentTime<=0){
        audioElement.play();
        masterPlay.classList.remove('fa-play-circle');
        masterPlay.classList.add('fa-pause-circle');
    }
})

```

```

        gif.style.opacity = 1;
    }
    else{
        audioElement.pause();
        masterPlay.classList.remove('fa-pause-circle');
        masterPlay.classList.add('fa-play-circle');
        gif.style.opacity = 0;
    }
})

// Listen to Events
audioElement.addEventListener('timeupdate', ()=>{
    // Update Seekbar
    progress = parseInt((audioElement.currentTime/audioElement.duration)* 100);
    myProgressBar.value = progress;
})

myProgressBar.addEventListener('change', ()=>{
    audioElement.currentTime = myProgressBar.value * audioElement.duration/100;
})

const makeAllPlays = ()=>{

Array.from(document.getElementsByClassName('songItemPlay')).forEach((element)=>{
    element.classList.remove('fa-pause-circle');
    element.classList.add('fa-play-circle');
})
}

Array.from(document.getElementsByClassName('songItemPlay')).forEach((element)=>{
    element.addEventListener('click', (e)=>{
        makeAllPlays();
        songIndex = parseInt(e.target.id);
    })
})

```

```

        e.target.classList.remove('fa-play-circle');
        e.target.classList.add('fa-pause-circle');
        audioElement.src = `songs/${songIndex+1}.mp3`;
        masterSongName.innerText = songs[songIndex].songName;
        audioElement.currentTime = 0;
        audioElement.play();
        gif.style.opacity = 1;
        masterPlay.classList.remove('fa-play-circle');
        masterPlay.classList.add('fa-pause-circle');
    })
})

```

```

document.getElementById('next').addEventListener('click', ()=>{
    if(songIndex>=9){
        songIndex = 0
    }
    else{
        songIndex += 1;
    }
    audioElement.src = `songs/${songIndex+1}.mp3`;
    masterSongName.innerText = songs[songIndex].songName;
    audioElement.currentTime = 0;
    audioElement.play();
    masterPlay.classList.remove('fa-play-circle');
    masterPlay.classList.add('fa-pause-circle');
})

```

```

document.getElementById('previous').addEventListener('click', ()=>{
    if(songIndex<=0){
        songIndex = 0
    }
}

```

```
else{
    songIndex -= 1;
}
audioElement.src = `songs/${songIndex+1}.mp3`;
masterSongName.innerText = songs[songIndex].songName;
audioElement.currentTime = 0;
audioElement.play();
masterPlay.classList.remove('fa-play-circle');
masterPlay.classList.add('fa-pause-circle');
})
```

Project link: <https://github.com/hrprem16/Spotify-Clone>

Conclusion

In the rapidly changing economy of the Internet, Spotify stands out as a leading innovator in the field of music streaming. Starting out in a large field of competitors, Spotify rose quickly to lead the industry in music streaming, and become the service of choice for millions of users.

This was achieved through a user-focussed business model that placed value on the attention of millions of users over the economic value of the music it was providing, or the monetary profits that might be gained. It was this shift away from a profit driven business model that allowed Spotify to grow a network economy and gain value as a business to advertisers and music artists alike.

By recognizing the value of the network, and the power that could be leveraged through focusing the network attention, Spotify was able to achieve success and attract a greater library of music to offer the users, which in turn increased the network and the power of Spotify.

However, Spotify's network of users exist within an ever-changing digital world where technology advances at a great rate, and competitors arise on a regular basis. To remain the top competitor in the market, Spotify must constantly develop their products and innovate their services to respond to the advancing needs of the audience. They have maintained their position as the top music streaming service only because they have been better at providing their large network with updated services and innovate products, and focusing their business model on the needs of the users.

In an economy where companies can rise rapidly, they can fall just as quickly at the mercy of a network of users. And it can be understood that companies like Spotify can only succeed as long as they can continue to find new ideas to meet the changing needs of the audience.

Reference link:

<https://github.com/hrprem16/Spotify-Clone>