# A Project Report

On BEAT UP (Web Application)

Submitted in partial fulfillment of the requirement for the award of the degree of

# Master of Computer Applications



(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

Under The Supervision of Name of Supervisor: Dr. Sanjay Kumar Designation: Professor

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SCHOOL OF COMPUTING SCIENCE AND ENGINEERING DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING GALGOTIAS UNIVERSITY, GREATER NOIDA INDIA (December ,2021)



# SCHOOL OF COMPUTING SCIENCE AND ENGINEERING GALGOTIAS UNIVERSITY, GREATER NOIDA

#### CANDIDATE'S DECLARATION

I/We hereby certify that the work which is being presented in the thesis/project/dissertation, entitled "BEAT UP" in partial fulfillment of the requirements for the award of the <u>Bachelor of Technology</u>submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of September, 2021 to December,2021, under the supervision of Dr Sanjay KumarProfessors, Department of Computer Science and Engineering/Computer Application and Information and Science, of School of Computing Science and Engineering, Galgotias University, Greater Noida

The matter presented in the thesis/project/dissertation has not been submitted by me/us for the award of any other degree of this or any other places.

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This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Supervisor Dr. Sanjay Kumar

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#### CERTIFICATE

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**Signature of Project Coordinator** 

**Signature of Dean** 

Date: November, 2013 Place: Greater Noida

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# **Abstract**

This project is about the mp3 music player application advancement utilizing Web Application. The greatest contrast between the music player and existing applications is that it is totally free for clients to utilize. It will integrate the benefits of existing music. Low Cost-effective. Also, it will be kept improved based on user feedback.

The functions of playing music's and multimedia have become essential in one device as a smart phone since the smart phone appeared. It is very convenient, but it contains controversial arguments about sound quality, so many smart phone users use the music player application. By using these music applications, relationship between music playing and sound quality. However, those applications are not perfect, so it is hard to choose a good application. This thesis is about the advantages of the sound quality of music player applications that are currently sold in Android Market through Right people start to think about the Mark Audio Analyzer program, and plans to suggest android music player application system design by analyzing applications by covering disadvantages of these applications. It will be an Online Music Application where a user can listen to their favorite music anytime and anywhere and can create a playlist. We will be using the API for this. So that user can listen to the variety of their favorite songs without any problem.

Most of us listen songs almost every day so, if you want to listen your favorite song either you have to take their expensive monthly or yearly subscription or you have to login to different apps which will not be possible after a certain time. So, we are designing this web application in which most of the above problems would overcome.

The tools and technology we are using to make this web app for you are: HTML, CSS, JAVASCRIPT, BOOTSTRAP, and MYSQL.

#### Introduction

Nowadays, we are living in a digital environment where everything is availableonline. So, people before use to carry Walkman to listen to music also in that they use to install the songs and after that they could listen to the selected music. So, everything uses to be very precise and limited but as the technology got improved it eased the life of people as if someone has to listen up to music, they have infinite variety of songs. Our Application Beat UP is the one that could provide a user with unlimited variety of songs anytime & anywhere.

Our product is a web-based music player that allows users to listen to their favorite music using a server program on their home computer and a web-based client to connect to that server and stream the music. So, we would be using an integrating API of Sound Cloud so that you have the variety of Songs to listen. And User has to Sign Up/Sign In and after that he could use our Web Application.

# Features of Beat-Up: -

- View the music library sorted by various aspects such as: Artists, Album, Genre, Song Title, and make Playlist.
- Create, save and modify playlists through the web client.
- Play mp3's streamed from the user server to the web client.

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# Literature Survey

This is a limited literature review, written for a Foundations of Educational Technology course at the University of Arkansas. The assignment was intended to give us the experience in researching and writing a literature review, but did not give us the time to complete an exhaustive review. However, I am posting it to give others the opportunity to read and perhaps comment upon my conclusions. Hopefully the future will offer further opportunities (i.e. time!) to further research this topic.

There have been many efforts to explore the possibilities that music technology offers in education, in spite of the synchronous nature of music performance (Dammers, 2009). This limited review includes thirty-four peer-reviewed research articles that investigate different ways music technology can be integrated into music education. From "traditional" uses such as online research (Barry, 2003), streaming audio/video (Cox, 2005) and traditional music notation software (Schroth, Helfer, &Dammers, 2009) to Skype lessons (Dammers, 2009) and Dance eJay (Gall & Breeze, 2005 and Mellor, 2008), the results are categorized and discussed. From the results, it is clear that while technology does offer many possibilities for the music educator, the paradigm of music research must be shifted to clearly state study objectives and to include audio/video material, as well as relevant sheet music in order for educators to truly absorb the information and gauge the efficacy of the use of the technology.

In recent years, a growing literature on music copyright, piracy and the search for new effective business models has emerged [Figure 2.1]; yet little has been done to examine and understand the opportunities and challenges posed by online music services for music recording companies. Ted Mico from the label Interscope Records suggests: 'As far as ad-supported [music], it is a very, very new business. It's got to mature ' (Weisenthal, 2008). It is in this spirit that I build upon the existing research.

illustration not visible in this excerpt

# **Technological Development**

To understand the current changes the music industry is undergoing, it is necessary to take a brief look at the technological background. Online music services are generally surrounded by digitalization, convergence and web 2.0. Scholars such as Jenkins (2004) have defined media convergence as an altered relationship between

existing technologies, industries, markets, genres and audience. Digital media convergence is driven by web 2.0, which is a key technology in web development. It facilitates participation, communication, as well as discloses social and economic opportunities to businesses to capitalise on electronic communities (O'Reilly, 2005). The advances in digital technology make artists and consumers less dependent on the recording industry to create, distribute and consume music (Kusek & Leonhard, 2005).

In this context, file sharing services using participatory architecture [Napster] and web distribution platforms such as iTunes emerged. The company behind iTunes, Apple Inc., has taken advantage of the early stages of the digital age. Their business model is around a legal online store where you can buy songs or albums in a digital format (Kirkpatrick, 2006). iTunes has further proven to be a success both for the retailer and record labels. These shifts in the media landscape impose opportunities and threats to recording companies and likewise to the music culture.

# Music Industry

Key subjects in the music industry range from music production to music policy and consumption of popular music. A key publication in the field of cultural aspects of the industry is the book published by Frith (2004), who examines popular music in the age of technological change and who brings up the question of music ownership determination. Complementary to the cultural dimensions, Vogel (2004) and Hull (2004) explore the structure of the entire music industry. They both elaborate the framework by looking at the economic and financial perspectives. Important for the reader are the three main income streams in the economic model: music publishing, live appearances, and the sale of recordings. Giving a brief overview, the music recording industry is dominated by the 'big four' major record labels – Sony Music Entertainment, Universal Music Group, EMI and Warner Music Group. Their combined market share is 74.2 % of global recorded music sales (Informa Telecoms & Media, 2008). Independent labels comprise the rest of the pre-recorded music market, with global retail sales of recorded music totalling nearly \$ 30bn in 2007 (IFPI, 2008).

Moving on to the impact on the industry, the Internet has drastically altered the production, distribution, and consumption of music (Molteni & Ordanini, 2003). This is in confirmation with Shuker (2001), who takes an early view onto the impact of technologies including online delivery and debates about mp3[4] and file sharing platforms. Recommendations made by the Department for Culture, Media & Society (2000) in the UK about a legislative framework for online copyright

protection and Trustmark development have not been implemented, respectively not improved the situation of the music industry. Thus the industry is in a state of flux ever since. As a result, companies are moving towards more diversified business strategies and seeking new revenue streams such as ring tones and merchandising to deal with the industry's expanded ecology (Leyshon et al., 2005). This development is rounded up by Passman (2006), who gives information on the industry's major changes in response to today's rapid technological advances and uncertain economy. Evidence from a recent report by Pfeiffer (2007) suggests that music companies should forget about digital rights management in the short term as it is not going to last. The trends of the market further point towards the problem of declining physical sales, which is connected to illegal downloading, as well as to substitution effects through music available on popular websites such as MySpace and YouTube (Pfeiffer, 2007). These facts are complemented by the conclusion that a new generation of music subscription services, social networking sites and new licensing channels is emerging. Despite the fact that the sector is still overshadowed by a huge amount of unlicensed music distributed online, music companies embrace new revenue models, offering consumers more choice, based on first-hand industry figures presented by the IFPI (2009), which is acting as an umbrella organisation for the music industry.

# Parallel Industries

The shift occurring in the music industry can also be found in parallel industries. In his book, Papathanassopoulos (2002) provides a clear, concise account of the dynamics and realities of the changing face of television in Europe. Conventional broadcasting sustains a shift towards narrowcasting, whereby video on demand reinforces the trend of digitalisation and disintermediation. This progression may well result in displacement of traditional video and DVD's (Zhu, 2001). Usage-based pricing pay-TV, Video on Demand] can thus be used to exploit the consumer surplus and subscription-based services will further personalise television (Papathanassopoulos, 2002; Buonanno, 2008). The future of press, radio, cinema, and television, and those of the Internet to come, is going to merge into a large online cloud, which seizes upon the statement from Zhu (Buonanno, 2008). These studies are confirmed by CEO Robin Kent, who feels certain about the changeover to more targetable, narrowcast media: 'Mass is still mass, but we're nearing the tipping point' (Bianco, 2004: 2).

# Copyright and Piracy

Illegal music services like Napster or Kazaa had been around long before a choice of music catalogue was legally provided. As a result, the well-known anomaly of the digital music world was reinforced - legal services constantly play catch-up with illegal services, and the enforcement of copyright persistently lags advances in technology (PRS for Music, 2009).

Facing these problems, the recording industry is trying to protect their intellectual property rights by lobbying legislators and law enforcers to make individuals liable for any copying they do (Marshall, 2004: 200). The current issues and perspectives on copyright law are comprised by Towse (2002), who is a key author in the field of economics and copyright. Towse (2004) further suggests the music industry must look to market-based incentives, rather than relying on the strength of copyright protection to survive in the digital era. Supplementary, Frith and Marshall (2004) draw attention to the relation between music's ubiquity and the economics of remuneration of musicians. Despite the increasing strength of copyright protection, unauthorised use of music is growing. It is fostered by the emergence of new technologies, but charging for every individual use under consideration of the fair use policy of music is not a solution (Frith & Marshall, 2004).

According to an estimate by the IFPI (2009: 22), unauthorised file sharing accounts for over 40 billion files in 2008. A comprehensive literature review of music piracy is provided by Peitz and Waelbroeck (2003). They introduce several key issues facing both consumers and copyright holders with respect to how copyrights are to be protected and how violations of copyrights should be treated. Other research has focused on the economic and social impacts of peer-to-peer networks and the shift in power from record labels to independent artists and consumers (Hughes & Lang, 2003). One of the first academic reviews of the effects of online piracy on the music industry is given by Liebowitz in 2003. He describes and empirically assesses most of the possible factors leading to a drop in sales. He concludes, without using direct information on music downloads, that most factors have some influence but that the sharp fall in sales has to have another catalyst - mp3 downloading (Liebowitz, 2003). This is followed by an analysis of the role of music downloading on the downturn in CD sales (Peitz & Waelbroeck, 2004). They conduct a cross-section analysis for 16 countries over the period 1998 -2002, where they found a rather large decline in sales. But the growth in illegal downloading could not have been responsible for more than a quarter of the decline that occurred in 2002. The study merely covers a short time period, where it appears very difficult to generalise findings about piracy. Oberholzer-Gee and Strumpf (2007) provide further analysis by using actual download and sales data. They found that the effect of downloads on sales is 'statistically indistinguishable from zero ' (2007: 25) in the US. They were only monitoring the Open Source Napster Platform, thus it is questionable whether the collected data is representative of the entire peer-to-peer network.

However, other studies argue that the extent of file sharing remains substantial (Liebowitz, 2006). One underlying reason is the uninhibited supply of music in file sharing networks, which 'seems to be virtually limitless' (PRS for Music, 2009: 3). Yet, another study by Bhattarchajee et al. (2003) found the existence of piracy across all music categories according to a questionnaire related to students' attitudes towards online music. The price of music is found to have significant effects on piracy too. Their forecast predicts an increasing influence in subscription-based and a-la-carte models such as iTunes. Complementing these studies, Zentner (2005) found that countries with greater Internet capacities have higher losses in music sales. In subsequent empirical studies, Stevans and Sessions (2005) and Zentner (2006) found that people, who regularly download music over the Internet, buy more CD's than others. It strengthens the idea that other causes than substitution are underlying the drop in music sales.

The diversity of data collected and methodologies used by the [empirical] studies make it difficult to compare the presented literature results. One important aspect is specified by Dejean (2009), who argues that some studies seem to have overestimated, whereas others might have underestimated the impact of digital piracy due to the problem of endogeneity between illegal downloads and purchased music.

# Online Revenue Strategies

Although record companies paint a dark picture, the music industry is still very much alive and prosperous; in recent years music consumption continues to be on a high level thanks to the opportunities presented by the Internet. Graham et al. (2004: 1087) note that in former times the traditional business model of the industry remained relatively stable: 'artists create music, record labels promote and distribute it and the fans consume it'. However over the years, the Internet and the growing popularity of file sharing are challenging the traditional distribution model that has relied on physical products such as CD's. A major impact on the recording industry is caused by supply chain disintermediation. The disintermediation triggered by the Internet is well described by Graham et al. (2004).

As a consequence of disintermediation, there is potential for the music industry in reversing the effects of online music piracy and revenue chain disintermediation by

providing more legal music to customers online (Gopal et al., 2006; Leyshon et al., 2005). Yet another dimension is put forward by Kusek and Leonard (2005), that the Internet is presenting new ways of allowing customers to have a once in a lifetime musical experience. These changes provide new opportunities for unsigned artists and labels, in particular taking advantage of peer-to-peer networks and legitimate online downloading services (Gordon, 2005; Vaccaro & Cohn, 2003). Likewise, Barrett (2003: 10) emphasises the need to find a way to close the ' music gap ' between legal and illegal sources. His recommendations advise fighting digital piracy through a free, on-demand music service paid for by advertising revenue, rather than pursuing legal actions that ignore the realities of today's entertainment market. This development highlights the importance for record companies to realign their supply chain activities to come up with innovative ways of satisfying customers (Kusek & Leonard, 2005; Graham et al., 2004). According to Anderson (2006), who coined the phrase 'the long tail', the Internet has broken the established equilibrium. It allows the production and spreading of specific and rare content. The so called niche strategy raises the profitability of products, which were not available in traditional distribution channels.

It is criticised by some scholars, who are referring to sales data showing the importance of blockbuster hits (Elberse 2008). A recent analysis uncovered the 'hit-heavy, skinny-tail 'distribution for legal online music consumption, which concurs with the critiques (PRS for Music, 2009: 2).

# **Case Study Design:**

The research approach of this dissertation is probably best described as a descriptive case study. According to Yin (2003: 13), a case study is an 'inquiry that investigates a contemporary phenomenon within its real-life context'. In this dissertation's context, it is appropriate to use a case study in order to find an answer to the question 'What are the opportunities and challenges posed by online music services for the music recording industry?'

There are many different angles to look at online music services. In effect, the study is focusing on the recording industry's perspective. A case study is beneficial, because it allows the combination of different research methods and the use of multiple sources of evidence, with the aim of supplementing findings and dovetailing different aspects of an investigation. This approach embraces empirical and qualitative primary data and assembles it with secondary material [Figure 3.1]. Findings, based on complementarity of data and triangulation, are likely to be

much more convincing and accurate, and also address the potential problem of constructed validity (Yin, 2003: 99; Collis & Hussey, 2009).

More in detail, the phenomenon is being addressed by contextualising the background surrounding online music services in the first two chapters. It is followed by an online questionnaire, which is intended to establish the background and capture trends of the phenomenon, respectively of music consumption and purchasing behaviours. The case of Last.fm has been selected for the consumer study, because it is a popular service [see introduction] and thus offers a diverse demographic structure. Also their social network character facilitates participation in the online questionnaire, and the advanced user search function is helpful for a random sampling method. These features, as well as easy access to users, are advantageous compared to other services and ensure to obtain reliable results that are representative of a large proportion of Last.fm users. This is complemented by expert interviews, which are specifically directed towards the perspective of the recording industry and by secondary interview material, which presents an additional angle from the online music service sector.

#### **CONSUMER SURVEY**

'How are consumer attitudes and purchasing behaviours of online music service users changing?'

As described above, this question is analysed by doing a consumer survey on Last.fm. 'Surveying is a method that is used to get information about certain groups of people who are representative of some larger group of people of interest to us' (Berger, 2000: 189). Taking into account that the self-completion online questionnaire should only take five minutes to complete and include questions about user's attitudes towards online music and their purchasing behaviours, it is categorized into four sections: demographic, online music consumption, buying behaviour, piracy and ownership. For the questionnaire, see Appendix D.

Probability sampling has been used to select participants – it is perfectly suited for making inferences from a questionnaire's sample to answer part of a research question (Wimmer & Dominick, 2000: 82). The sampling frame was limited to users of Last.fm, who are at least eighteen years of age. By having used stratified random sampling as a technique, the frame was divided into a number of subsets, whereby a random sample was drawn from each of the strata (Saunders et al., 2007: 221). The stratification variable was age, dividing the sample into six discrete strata: 18-24, 25-29, 30-34, 35-39, 40-45, 45+. Having applied systematic random sampling on each stratum, every third user has been invited to participate

single cluster response rate (Collis & I		

# **Required Tools**

# **Required Tools:** ¬

# Required Language:

- HTML
- CSS
- JavaScript
- API -Sound Cloud

# Others tools-

- CANVA for prototype
- Draw.io for ER-Diagram

# **Required Tools:**

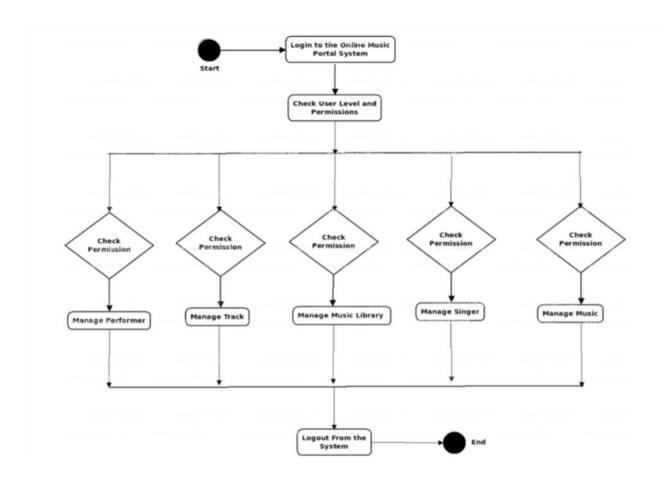
• Hardware Requirements-

Processor RAM Disc Space Pentium II , Pentium III, Pentium IV or higher 64 Mbor Higher 130 Mb.

• Software Requirement-

Operating System DatabaseWin-98, Win-XP, Linux or any other higher version Ms Access

# ER DIAGRAM



# CHAPTER-5 GANTT CHART





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# **Module Description**

This project is about the mp3 music player application advancement utilizing Web Application. The greatest contrast between the music player and existing applications is that it is totally free for clients to utilize. It will integrate the benefits of existing music. Low Cost-effective. Also, it will be kept improved based on user feedback.

The functions of playing music's and multimedia have become essential in one device as a smart phone since the smart phone appeared. It is very convenient, but it contains controversial arguments about sound quality, so many smart phone users use the music player application. By using these music applications, relationship between music playing and sound quality. However, those applications are not perfect, so it is hard to choose a good application.

So, for the UI (User-Interface) that comes under Frontend Development.

**Frontend- Development** – Where the Developer is responsible for the UI (User Interface) of the Application. Front-end web development is responsible for the look and feel of a website. This means how colors, type, icons, and images appear. Increasingly, front-end development has to account for how a website looks on all devices, from desktop to tablet to phone. Typical programming languages include HTML, JavaScript, and CSS. Front-end developers keep up with cutting-edge trends in web design and development to make sure websites are optimized for users and search engines — and with security best practices in mind.

**Backend-Development** -refers to the server-side development. It focuses on databases, scripting, website architecture. It contains behind-the-scene activities that occur when performing any action on a website. It can be an account login or making a purchase from an online store. Code written by back-end developers helps browsers to communicate with database information.



# About Technologies We Used: -

#### HTML: -

The Hypertext Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. We used it for the Structure of the Web Application.

# **CSS: -**

We used CSS for the designing of our Web Application .Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by

specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

# JavaScript: -

JavaScript was initially created to "make web pages alive". The programs in this language are called scripts. They can be written right in a web page's HTML and run automatically as the page loads. Scripts are provided and executed as plain text. They don't need special preparation or compilation to run. For the functionality we used JavaScript.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has dynamic typing, prototype-based objectorientation, and first-class functions. It is multi-paradigm, supporting eventdriven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

The ECMAScript standard does not include any input/output (I/O), such as networking, storage, or graphics facilities. In practice, the web browser or other runtime system provides JavaScript APIs for I/O.

JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. The most popular runtime system for this usage is Node.js.

Although Java and JavaScript are similar in name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design.

# <u>API: -</u>

An application programming interface (API) is a connection between computers or between computer programs. It is a type of software interface, offering a service to other pieces of software. A document or standard that describes how to build or use such a connection or interface is called an API specification. A computer system that meets this standard is said to implement or expose an API. The term API may refer either to the specification or to the implementation. We have used SoundCloud API for it to Fetch the data from it.

# Connectivity (Frontend to Backend)

Essentially, an API is a description of how a software product can be interacted with. Precisely what does that mean? Let's assume that a car is a software component.' Since it is capable of doing so many things, its API would have included data on those capabilities.

How you can end up making it do some these things is also included. You accelerate by putting your foot down on the gas pedal and accelerating. There is no need for this API to explain what is happening inside the engine when the accelerator is pushed inward.

There are many advantages to learning to drive an electric vehicle, such as not needing to learn a completely different set of skills. The API definition is abstract and removes the car from the equation by defining the what and how of information. Consider that the name of a particular API may ask for both the interaction specifications and what software component you are actually interacting with.

An open API may sound familiar if you're familiar with the term "web services" from the early 2000s. When it comes to open APIs, web services are a specific type of open API, one that adheres to a strict set of requirements, including the fact that they can be described in Online Services Description Language. As part of a provider architecture, web services were intended to be used (SOA).

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# Design & Implementation

Consumer service is provided by units, which include shopping carts, easy-to select products, and an online payment process. All such feature allows the website to be fully integrated with the application by offering all of the necessary features.

In addition, they'll tell you how to hire a personal assistant to assist you with home renovations. A digital tour of the accommodation is delivered to the clients so that he can clearly understand the layout and how his house will look after the changes are made and that there is no possibility of misapprehension or misinterpretation. There really are aesthetically appealing packages available for this purpose.

#### ANALYSIS AND DESIGN OF THE SYSTEM

1) Music listening behavior – Analyzing the of Features. The majority of those polled (40%) hear music for much less than 60 minutes a day, while 22% listen for more than two hours a day. When it comes to music, 40% of Indians prefer English, making it the most popular language in the country. Second spot goes to Hindi with 39%, and third place goes to Punjabi with 17% of the total vote count. Other regional languages make up the remaining 4%. More than three-quarters of those polled, or 73%, said they listen to music on digital platforms like streaming services. TV and radio are used by 16 percent and 11 percent of the respondents respectively to hear music. It is a clear sign of the migration of music consumption away from traditional media such as radio and t.v and toward online services. 2) Radio and Podcast: Radio and podcasts are available from a number of music streaming services. In order to reach a broader audience, these features have been included. Listening to podcasts is a good way to keep app users interested. However, research shows that only a small Major Project-BT4069 percentage of consumers actually take advantage of these features. 30% of survey participants hear podcasts and radio, while 70% never use this characteristic at all. 3) Notifications: Brands frequently notify users to their customers about new music, artists, and albums that have been decided to add to their applications. In fact, only about 9 percent of customers truly find these alerts useful technique to explore current and fresh songs by rating it a 5. 24 percent of participants stated that they didn't even find them helpful at all and rated it 0. Because of this low rating, it's clear that alerts about songs aren't tailored to the preferences of the users. 4) On Screen lyrics: When a song is playing on Brands, you can choose to see the song's

lyrics. The purpose of this characteristics is to make it easier for users to read song lyrics whereas listening to them. In contrast, 49% of users dislike this feature. The lyrical content feature is used by 18 percent of users. One-eighth of those polled claimed that the app they use to listen to music does not provide access to song lyrics. 5) Playlist Preference: Throughout playlists are a variety of playlists that can be accessed by anyone using a music app. Allowing customers to create playlists gives them the ability to gather songs of their choice into a single collection. Most people seek to make their own music tracks on the app and hear to them, while only 42 percent prefer listening to the in playlists. 6) Preferences of Features: People were asked which of the above-mentioned significant parts they would most like to see included in the app. Comparisons were made of all the most popular parts. According to the survey, 36 percent of participants prefer to search for their favorite song by hand. About 33% of those polled said they prefer listening to music from of the playlist they've formed on the app instead of searching for them. To hear to in-app playlists, 28 percent of participants said they prefer to browse the app first.

# Web Design

Selecting and designing the technology of the site and see the prototypes: Sketches and prototypes are included.

When you've chosen the right company and sent them your ideas and the site's outline, they'll begin working on the design and checking this through the ideas you've already expressed. Though the agreed-upon channels you can then move on to the next phase of building a website, where you'll need to select technology solutions for the webpage.

While some clients prefer working, sites progressively Static and another seems to want to interactively Dynamic and other free OpenSource solutions provide work agreed to sign and between adaptively and dynamically dynamic.

Depending on the time, expense, and the client's own vision, he or she selects the best option from a list of options provided by the company.

# Tools and technologies:

Web designers use a variety of different tools depending on what part of the production process they are involved in. These tools are updated over time by newer standards and software but the principles behind them remain the same. Web designers use both vector and raster graphics editors to create webformatted imagery or design prototypes. Technologies used to create websites include W3C standards like HTML and CSS, which can be hand-coded or generated by WYSIWYG editing software. Other tools web designers might use include mark up validators[8] and other testing tools for usability and accessibility to ensure their websites meet web accessibility guidelines.

# Skills and techniques:

Marketing and communication design

Marketing and communication design on a website may identify what works for its target market. This can be an age group or particular strand of culture; thus the designer may understand the trends of its audience. Designers may also understand the type of website they are designing, meaning, for example, that (B2B) business-to-business website design considerations might differ greatly from a consumer targeted website such as a retail or entertainment website. Careful consideration might be made to ensure that the aesthetics or overall design of a site do not clash with the clarity and accuracy of the content or the ease of web navigation,[10] especially on a B2B website. Designers may also consider the reputation of the owner or business the site is representing to make sure they are portrayed favorably.

# User experience design and interactive design:

User understanding of the content of a website often depends on user understanding of how the website works. This is part of the user experience design. User experience is related to layout, clear instructions and labeling on a website. How well a user understands how they can interact on a site may also depend on the interactive design of the site. If a user perceives the usefulness of the website, they are more likely to continue using it. Users who are skilled and well versed with website use may find a more distinctive, yet less intuitive or less user-friendly website interface useful nonetheless. However, users with less experience are less likely to see the advantages or usefulness of a less intuitive website interface. This drives the trend for a more universal user experience and ease of access to accommodate as many users as possible regardless of user skill. Much of the user experience design and interactive design are considered in the user interface design.

Advanced interactive functions may require plug-ins if not advanced coding language skills. Choosing whether or not to use interactivity that requires plug-ins is a critical decision in user experience design. If the plug-in doesn't come pre-installed with most browsers, there's a risk that the user will have neither the know how or the patience to install a plug-in just to access the content. If the function requires advanced coding language skills, it may be too costly in either time or money to code compared to the amount of enhancement the function will add to the user experience. There's also a risk that advanced interactivity may be incompatible with older browsers or hardware configurations. Publishing a function that doesn't work reliably is

potentially worse for the user experience than making no attempt. It depends on the target audience if it's likely to be needed or worth any risks.

# Purpose Of The Application

The need of diversifying their revenue streams displays a challenge for recording companies. Having mentioned the problems in the digital age, it is important to find new strategies for the music industry in order to maximize revenues. This process is related to many adjacent issues, such as debates about new technologies, copyright protection and the illusion of music for free. In fact, the prosperous phenomenon of online music services is worth being looked at. Geoff Taylor, CEO of British Phonographic Industry, says that 'the industry has worked hard to license new services, they are great music discovery tools and a new way for artists to get paid and drive new sales' (Topping, 2009). On that note, the dissertation is focused on the prospects for the music recording industry. This dissertation is an attempt to address the issue of

'What are the opportunities and challenges posed by online music services for the music recording industry?'

By music recording industry, which includes the four major labels that dominate recorded music – Sony Music Entertainment, Electric and Musical Industries [EMI], Universal Music Group and Warner Music Group – as well as independent labels, primarily the sales of music CD's and DVD's and digital downloads are meant.

# **Research Objectives**

The main objective of the research is to investigate opportunities and challenges surrounding the development of online music services from the angle of the music recording industry. The objective can be broken down into two sub-questions.

First, how are consumer attitudes and purchasing behaviours of online music service users changing? This implies the question whether or not ownership still matters?

Second, what are the perceived opportunities and challenges surrounding the development of online music services?

In order to answer the questions stated above and achieve the objective, the research will be done by doing a case study. The phenomenon and adjacent issues are going to be explained in the literature review. After that, the

background of these services and the trends in attitudes and purchasing behaviours of service users will be established by doing an online questionnaire on the music community Last.fm. Last.fm has more than 37.3 million monthly unique users and seven million tracks in its music catalogue, and combines the advantages of an online service with social community features (Jones, 2009; Miller, 2009). Even more interesting is its artist royalty programme and its extensive affiliate list, which makes the community distinct from other services. Finally, interviews with experts from within the industry are going to yield perceived opportunities and challenges surrounding online music services from an industry's point of view. The results are not only of interest to music recording companies, but can equally be extended to the entertainment industry on a global scale, at least to some extent. The research could contribute significant knowledge to the changes happening in the digital era and therefore is of interest to the area of Media Management. Nevertheless, the dissertation is not set up to solve the challenges facing the music recording industry. It is set up to give an insight into the issues outlined above.

# System Design & Implementation

Consumer service is provided by units, which include shopping carts, easy-toselect products, and an online payment process. All such feature allows the website to be fully integrated with the application by offering all of the necessary features. In addition, they'll tell you how to hire a personal assistant to assist you with home renovations.

A digital tour of the accommodation is delivered to the clients so that he can clearly understand the layout and how his house will look after the changes are made and that there is no possibility of misapprehension or misinterpretation. There really are aesthetically appealing packages available for this purpose.

# ANALYSIS AND DESIGN OF THE SYSTEM

- 1) Music listening behavior Analyzing the of Features. The majority of those polled (40%) hear music for much less than 60 minutes a day, while 22% listen for more than two hours a day. When it comes to music, 40% of Indians prefer English, making it the most popular language in the country. Second spot goes to Hindi with 39%, and third place goes to Punjabi with 17% of the total vote count. Other regional languages make up the remaining 4%. More than three-quarters of those polled, or 73%, said they listen to music on digital platforms like streaming services. TV and radio are used by 16 percent and 11 percent of the respondents respectively to hear music. It is a clear sign of the migration of music consumption away from traditional media such as radio and TV and toward online services.
- 2) Radio and Podcast: Radio and podcasts are available from a number of music streaming services. In order to reach a broader audience, these features have been included. Listening to podcasts is a good way to keep app users interested. However, research shows that only a small Major Project-BT4069 percentage of consumers actually take advantage of these features. 30% of survey participants hear podcasts and radio, while 70% never use this characteristic at all.

- 3) Notifications: Brands frequently notify users to their customers about new music, artists, and albums that have been decided to add to their applications. In fact, only about 9 percent of customers truly find these alerts useful technique to explore current and fresh songs by rating it a 5. 24 percent of participants stated that they didn't even find them helpful at all and rated it 0. Because of this low rating, it's clear that alerts about songs aren't tailored to the preferences of the users.
- 4) On Screen lyrics: When a song is playing on Brands, you can choose to see the song's lyrics. The purpose of this characteristics is to make it easier for users to read song lyrics whereas listening to them. In contrast, 49% of users dislike this feature. The lyrical content feature is used by 18 percent of users. One-eighth of those polled claimed that the app they use to listen to music does not provide access to song lyrics.
- 5) <u>Playlist Preference:</u> Throughout playlists are a variety of playlists that can be accessed by anyone using a music app. Allowing customers to create playlists gives them the ability to gather songs of their choice into a single collection. Most people seek to make their own music tracks on the app and hear to them, while only 42 percent prefer listening to the in playlists.
- 6) <u>Preferences of Features:</u> People were asked which of the above-mentioned significant parts they would most like to see included in the app. Comparisons were made of all the most popular parts. According to the survey, 36 percent of participants prefer to search for their favorite song by hand. About 33% of those polled said they prefer listening to music from of the playlist they've formed on the app instead of searching for them. To hear to in-app playlists, 28 percent of participants said they prefer to browse the app first.

# Case Study on Music Application

Like most college students, much of my life is accompanied by a soundtrack: whether that's hanging out with friends, traveling, or even walking to class. With music playing 24/7, it's easy to get tired of certain songs and playlists. That's when the quest to find new music begins: while Spotify's algorithm generates personalized playlists, I rarely add these songs to my playlist. Texting my friends, although requiring the most effort, always yields the best results — new music that I actually like.

Talking about music is more than simply a way to find new jams — it's a continuous conversation point that makes me feel intimately connected with my friends even when we aren't together, because of how personal songs can be. For Gen Z, who grew up using music streaming services, music is heartbeat of our lives — certain songs remind us of glimmering memories, and most importantly, the people who make those memories shine so bright.

# STEP 1: Diagnosing the Problem

Music is a method of connection, and while apps like Spotify allow you to follow friends on the app, passively sorting through their playlists is our only way to interact with their account. When listening to music, people want to be able to connect with their close friends, so that they can find new music through them and interact with them digitally in a very personal manner. People currently can't do that well because

They can't see when their friends are listening to music on the app.

It requires a lot of effort to access their friends' accounts on the mobile app (they either have to look them up by name or press 5 buttons to navigate to their profile).

They cannot communicate with their friends through the app (they have to leave the app which requires much more effort and can seem unnatural).

# STEP 2: Researching the Problem

To pinpoint the exact issue users, face when it comes to interacting with friends on Spotify, I interviewed several Spotify users — namely, Abigail Boatmun, Nicole Silberberg, Vanessa Rivera, and Neha Blair. I chose each

user for their different use of and level of experience with the app to bring diverse perspectives to my research. After interviewing my users, I discovered the following:

- User's love finding new music is through friends, but find it difficult to do so because it is an effortful and unnatural process. Users usually have to switch apps to text their friends, sometimes use Shazam, and then type in song names one by one.
- Users want music sharing to be more casual. Many users are selfconscious about sharing their favorite songs because music can be very personal. Currently, sharing music only feels natural to users when it comes up in person, which is usually not when users are looking for new music.
- We love talking music with our friends most users indicated that they talk to someone about music at least once, daily.

#### Market Research

Currently, the primary way in which people suggest songs to their friends is by sharing the songs one by one, through text messages (either through buttons on Spotify or through the Spotify widget on iMessage).

# STEP 3: Finding Opportunity Areas

Next, I brainstormed ways in which we could improve the user experience for the pain points identified in step 2. I recruited my friends Amelia Robinson and Nina Brinker and lead a group brainstorming session. From this, I identified the following questions and solution spaces.

# The Questions

How might we facilitate communication about music in a casual, natural, and non-judgmental manner? How might we encourage people to share music with their friends who are looking for new music?

# 3 Solution Spaces

Make people feel less self-conscious about sharing music: change the norms, give users more agency over what they share, give users a platform to share to encourage music sharing

Messaging and interacting with friends live: notifications for friends' activity, in-app messaging, reward users for connecting with more friends, more frequently

Finding new music through friends: create a "suggested" feed with songs suggested by a user's friend, provide feedback for the songs they suggest with a reaction bar

#### The Initial Solution

Of the 90+ solutions Amelia, Nina and I brainstormed, the solution I chose was to create a playlist for every user composed of songs suggested for them by their friends\* on Spotify. This includes adding a button to suggest any song on Spotify to a friend. I initially came up with several additional sub-features for this solution to promote user engagement with my solution. For example, I aimed to create a game in which users would earn prizes for suggesting songs that their friends like. I also planned to include a reaction bar to give users more reaction options to a suggested song, beyond merely liking it. Lastly, I devised a status update feature, in which users could indicate if they are searching for new music, or what they are doing as they listen to new music (cooking, driving, showering, etc.).

# STEP 4: Design Implementation

Low-fidelity Sketches

The following images illustrate how I anticipated integrating these new features into Spotify's existing information hierarchy.

At this point, I decided to exclude feature 2 from the final design, due to it having low feasibility and impact if it is released at the same time as the suggesting songs feature. Users first need to become comfortable suggesting songs to friends, and Spotify could develop feature 2 (a points system to reward users for good suggestions) to bolster engagement with suggesting songs after. I also decided to eliminate feature 2 because from a business perspective it is unclear what rewards are plausible to give to users — for example, a month of premium for free or badges for certain achievements? Determining this is beyond the scope of this project as an individual designer.

# Medium Fidelity Mockups:

While I ultimately designed 5 flows, each with 3 different explorations, I chose to user test the following flows. I did so to get feedback on the most natural entry point for this feature and to gauge how users felt about less essential sub-features (reaction bar, status updates, organizing Spotted playlists in different ways, and the notification center).

# STEP 5: Testing the Feature

I user tested these flows with three users who have varying levels of familiarity with Spotify: Kaleigh Soucy, Julia Michelak, and Brennan O'Connor. I deduced the following trends and insights after user testing: Users were surprised to see a list of their friends upon clicking "See my Spotted."

The original "See my Spotted" banner ought to be rebranded such that users know they will be taken to the home base for Spotted, rather than the playlist itself. Also, users may expect to see their friends under a tab that explicitly states "Friends."

2. Users would like to see what their friends are listening to at a given moment.

Users were not excited about the prospect of seeing their friends' statuses on Spotify (nor were they enthusiastic about updating their own status because it would require too much effort). Being able to see what someone is listening to feels more personal to a user than being able to see what the user is doing while listening to music.

3. Users liked the home screen as the main entry point to this feature.

The home screen is where users go to see their relevant playlists, and an entry point to the Spotted feature would fit in well with the other types of playlists there (such as your daily discovery). They noted that this was more casual than integrating it into the bottom dock of the app, where it would feel like it needed to occupy 1/4 of the information space.

4. Users want notifications.

Users want some reminder about this feature to encourage them to check their Spotted playlist. They liked having a notification center to see a summary of the information there: who suggested what song, who liked what song, etc.

5. Users felt the ability to react to a song was unnecessary.

Users feel that the ability to suggest songs to users and to acknowledge suggestions by adding the song to their playlist or liking the song is sufficient in-app communication.

# STEP 6: Designing in Hi-Fi

# Chosen High Fidelity Flow:

I chose the flow illustrated below because it aligns the most with the pain points, I initially pinpointed in my people problem by giving users a place to suggest songs to make sharing music feel natural. I also chose this flow because it eliminates the reaction bar and status update features, and instead displays what users are listening to when you swipe to the "friends" section within Spotted — decisions I made based upon my user testing findings.

# Conclusion

With the COVID-19 pandemic, there is a heightened need for new ways to connect virtually. For many people in my generation, music is a medium for connection: it's intimate and reminiscent of time spent together. Spotted is a way to meaningfully redesign how users interact with music streaming apps by making them a platform for a distinct form personal connection, unlike the kind users gain from apps like Snapchat and Instagram. Spotted protects the privacy that people value having over their music by giving users agency to share only what they opt to share, while making music sharing casual by creating a platform specifically for that purpose.

There are several next steps that music streaming platforms could take to make their app more social. Spotted could be turned into a game (as feature 2 in my initial design proposed) to reward users for making good suggestions. Spotted could also be integrated into Spotify's existing unique features — like Spotify wrapped, by including data on whose suggestions a user liked the most and who suggested the most songs to them. Spotted would open Spotify to becoming a more social and engaging app that users spend more time on while they are listening to music (rather than something that exclusively plays in the background of their life). Spotted would solve 2 pervasive contemporary problems at once: facilitate finding new music while generating personal bonds to transform music sharing as we know it.

#### UI / UX

#### Problem:

The client company is a startup company that launched a music streaming service two years ago. The company's business strategy was to first build a user base by offering a free product and then evolve the feature set so they could monetize on a premium(paid) product. The product has been well received and has a healthy user base of free uses. Now the company reaches a point to convert the users to pay a monthly fee.

## **Project Goals:**

- 1. Create the opportunity for new users to subscribe to the premium product upon registration in the signup flow.
- 2. Create the opportunity for returning free users to become paid subscribers in the sign-in flow as well as within the product.

## Our Role:

We were the sole designer responsible for the UX research and UI design.

## **Discovery:**

## Understand Music Streaming Service

The project's objective is to create a paid music streaming service with better features than the free experience and giving users the opportunity to upgrade to a better product, users will pay the subscription fee and in turn, will lead to a profitable revenue stream. Therefore, secondary research is conducted to better understand the users from the streaming service and the music streaming service industry.

## Key takeaways:

1. The majority of today's music revenue is coming from streaming.

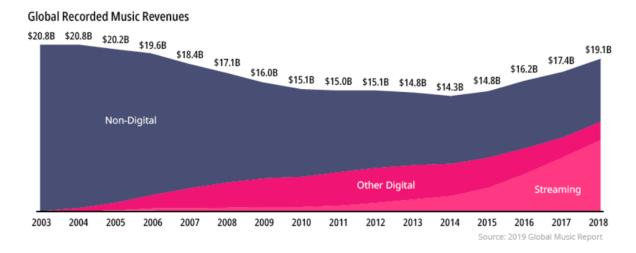


Photo credits: Global Music Report

2.According to GlobalWebIndex's study in 2019, 67% of online adults have used a music-streaming service in the past month. Gen Z leads the way with the highest average streaming times, accessing their favorite tracks across multiple platforms.



Photo credits: Globalwebindex

3. How music streaming services make money? There are two main identical models to generate revenue:

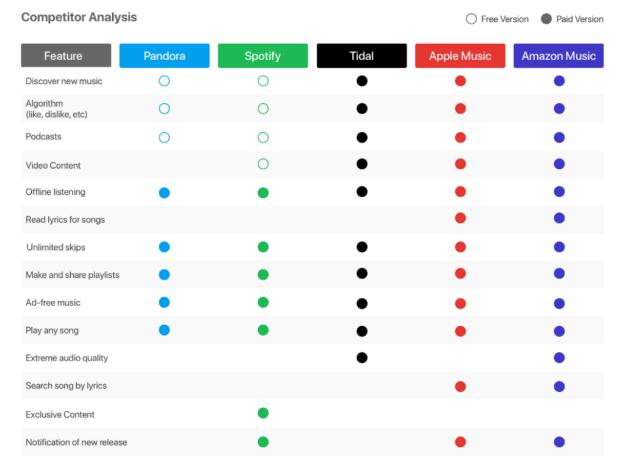
Paid Subscriptions: Advertising drives free users towards monthly subscription packages, which include various plan options.

Advertising: Advertisers pay for exposure, with ads played every 15 minutes for 30 seconds, and can also include sponsored playlists, and homepage takeovers.

## **Competitive Research:**

In order to know about what are competitors in the market offering the music streaming service, what are the features they offer, and how they convert the users? I analyzed the sign up as well as the conversion pushes of Spotify, Pandora, and Apple music, to understand what the methods they used to convert the users.

After understanding the user flow of sign up and upgrade, I compared the functionality of 5 other well-established competitors' music streaming services.



Competitor Analysis

From the competitor analysis, I knew that normally the music streaming platforms are offering the freemium version and they limit certain features such as "ad-free music" and "unlimited skips". Users would consider upgrading to the premium version in order to have a better user experience. Apple Music, Tidal, and Amazon Music provide a free range of trial experience but not the free version, after the trial period, users need to pay for continually use the service. In my case, as my client has built up the free users' base, so the business model of Spotify and Pandora are more close to what my client's project goal is.

# Who is using the product?

Based on the information provided by my client, the target users are:

18-24 years old.

Tech-savvy — they are on their phones for several hours a day Budget-conscious.

Music streaming service is a very important part of their lives.

In order to identify the opportunities to convert the free users, I sent out the interview invitations to my friends and recruited people from the social media that meet the characteristics of the target users and to understand what their goals, needs and the factors affect their decision in choosing the platforms and upgrading the service.

#### **Findings:**

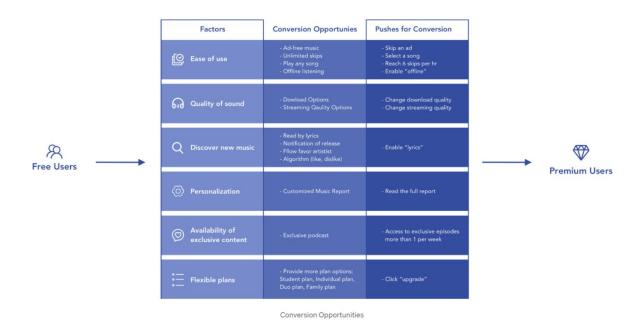
- 1.Respondents average spent 2–3 hours per day using the music streaming service.
- 2. Spotify is the most popular streaming service among those respondents.
- "it's human-driven rather than genre or category driven and it helps me a lot in discovering the music".
- "The annual report is customized for me. Spotify not only tells me what to listen to" but "what I have listened to and liked".
- "Spotify really cares their users, I have the habit of listening to music to fall asleep, the sleep timer feature is great, it's a tiny thing but it's just there when you need that."
- 3. When considering a music stream service, here are the factors that from most important to least important:
  - Price
  - Trust in brand
  - Ease of use
  - Quality of sound

- Ease of discovering new music
- Personalization
- Availability of exclusive music
- Flexible plans

## Define:

Identify the opportunities for conversation

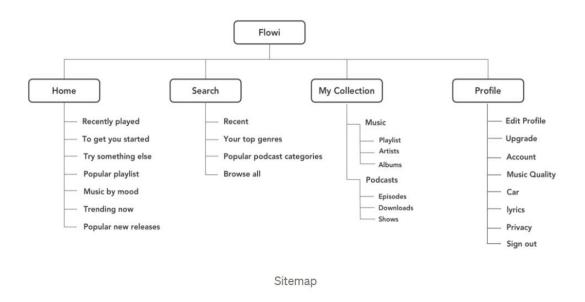
By analyzing the competitors, referring to the online user surveys, and conducting the interviews, I have identified the key factors that could be applied to provide a better product with paid features. To help me in explaining the relationship between the factors, conversation opportunities, and pushes for conversation, I created the below infographic: for example, through my survey, I found 56% of the users responded that the "quality of sound" is the main factor, then by offering the opportunities to change the download quality or streaming quality to motivate users to upgrade and the pushes notice will pop up when they tend to make a change.



# <u>Idea:</u>

## Sitemap:

After clarifying the relationship between the factors and the opportunities to bring in the conversion, I continued to create a detailed sitemap to serve as the guidance to design user flow.



User flow 1: Log in

Scenario 1: New user first time to download the app and tend to log in as the premium users.

Scenario 2: Returning free users login to the account and upgrade to the premium users.

User flow 2: Play music

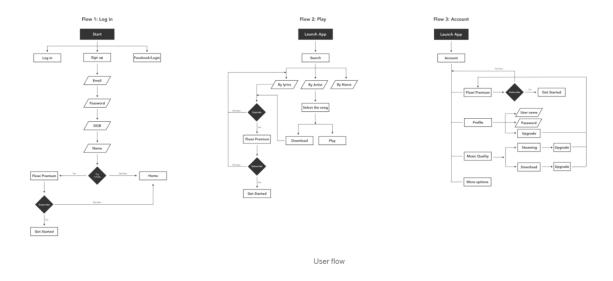
Scenario 1: The user heard a song on TV and wants to search it on the app.

Scenario 2: The user plays a song and would like to download it and listen later on.

User flow: Account

Scenario 1: The user wants to change the streaming/download quality.

Scenario 2: The user wants to check the premium plan options.



## Wireframe:

The goal of this project is to convert free users to paid subscribers. In order to understand how to immerse the pushes for conversion in the user interaction, I moved on to creating wireframes in Sketch App and designed the opportunities for conversion.

## Things to notice:

A key function of music is immersion and users do focus work, like studying, writing, or something that involves intense concentration when listening to music, so the "Pushes" or "CTA" should be subtle and fully immerse in the app.

# Validation:

I used Invision to create prototypes and invited 5 participants to conduct the first round test using a moderated remote user testing method. It allows me to

recruit the users faster and easier while we need to keep the social distance at this moment. I sent out the Invision prototypes to the participants via Zoom.

## **UI Design:**

Once everything is validated and tested, I move forward to design the interface of the app. To help me with the UI design, I created a basic UI kit for the app containing examples of existing typography, color palette, icons. Then I created initial high fidelity designs. The targeted users of this app are Gen Z and they are drawn to simple lines and bold color patterns. So, in my design, I used the bright red as the primary color and kept the interface simple and clean.

# Wrap up:

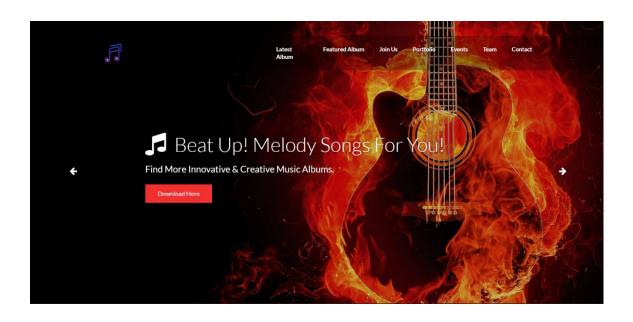
This project is focusing on converting the free users to the premium subscribers and this is also the bottleneck for many apps that need to transit to a new business model. Therefore, what I have learned in this project greatly help me to apply my knowledge to my future projects. I summarized the key takes away here:

- 1. In order to design the opportunities for upgrading, the key point is to understand what is CTA (call-to-action). The CTA is to induce people to take certain actions that present a conversion for a particular page or screen, for example, purchase, contact, subscribe etc. The design of CTA needs to consider the placement of the button and message writing and the design of the button.
- 2. The targeted users of this app are Gen Z and by conducting this design, I have more understanding of the characteristics of the Gen Z-ers. They are tech-savvy and crave stability, familiarity, and comfort. Thus in the design need to build up a consistent and reliable brand and highly value convenience and efficiency.
- 3. Design Mindset As described in the above conversion opportunities chart, there are several factors that can be used to generate the upgrade pushes, such as to provide the exclusive episodes and develop the lyrics feature. To

decide what to move forward requires the designer to be able to consider various perspectives and synthesize them in order to make decisions.



# Result & Output

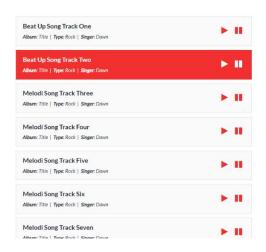




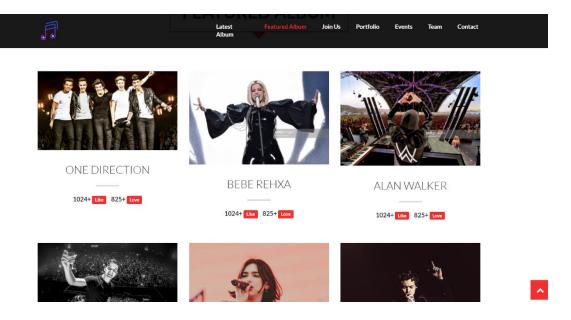
We sing the best  ${\color{red}\mathsf{Songs}}$  and now we control the world best  ${\color{red}\mathsf{Music}}.$ 

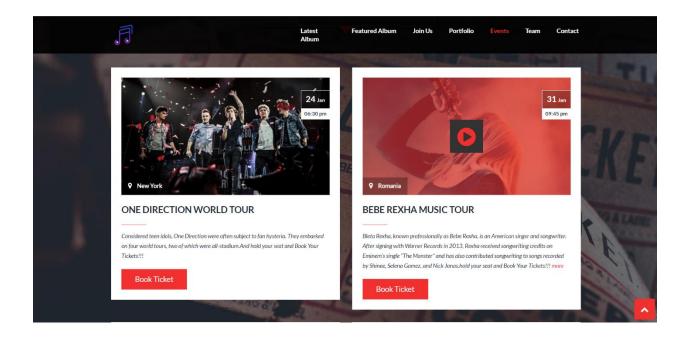


"Where words fail, music speaks"











# WHO WE ARE?



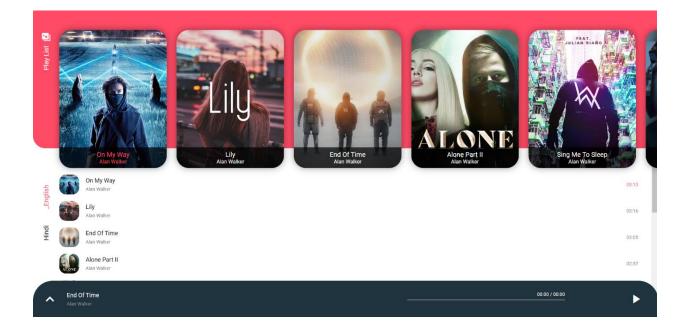
We are the medium through which you can listen upto infinite of music break free

#### Why choose us?

We Provide you with Royalty Songs Quality with a Good User-Friendly experinece where you can browse music without any Difficulty. Our Team has Designed this by keeping in mind so you can browse freely .

#### • Feature We Give?

View the music library sorted by various aspects such as: Artists, Album, Genre, Song Title, and make Playlist.



#### Conclusion

This project is about the mp3 music player application advancement utilizing Web Application. The greatest contrast between the music player and existing applications is that it is totally free for clients to utilize. It will integrate the benefits of existing music. Low Cost-effective. Also, it will be kept improved based on user feedback.

The functions of playing music's and multimedia have become essential in one device as a smart phone since the smart phone appeared. It is very convenient, but it contains controversial arguments about sound quality, so many smart phone users use the music player application. By using these music applications, relationship between music playing and sound quality. However, those applications are not perfect, so it is hard to choose a good application.

So, for the UI (User-Interface) that comes under Frontend Development.

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These are some of the references where we get the ideas.

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[4] www.venturebeat.com
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