AI BASED MUSIC PLAYER MOBILE APPLICATION

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ABSTRACT

The following article presents the results of research on the impact of machine learning in building a voice-controlled interface. The traditional music player requires human interaction to change the music track, this restricts the visually impaired from using the application. This project aims to develop an Ai-based music player mobile application, using Flutter and Alan API This allows the user to control the music via voice commands, allowing them to search for any song without having to touch the mobile screen. The idea is to minimize the touch interactivity between the user and the mobile. The application is built to run on both Android and iOS platforms.

Key words: machine learning; neural network; speech recognition.

I INTRODUCTION

Android OS is used by the majority of the smartphone market, a recent study concluded that the number of people using an android smartphone had surpassed 2 billion worldwide. To satisfy the needs of the android community, new applications are constantly being developed. Music player is one such application that is used by everyone. whether they are in the office doing work, doing some exercise or even bathing, people always like to listen to music.

Many developers and organizations throughout the world are frequently trying to develop music applications with improved functionalities and the latest technologies which will give the user a better experience. Machine earning powered voice-controlled music player is an application that tries to make the user's life better.

The aim of this project is to develop an Ai based music player mobile application, using Flutter and Alan API. The application allows the user to control the music via voice commands, eliminating the physical human touch.

The project aims to solve many problems and restrictions posed by the traditional music playing applications, by minimizing the touch interactivity between the user and the mobile. The application is built to run on both Android and iOS platforms.

II Existing System

Most of the prevailing music players support controls equivalent to play/pause, next song/fast-forward, previous song/fast-reverse, And volume up/down. iPod Shuffle conjointly supports a "shuffle" mode to play an indiscriminately way hand-picked song. Sansa Clip supports browsing voluminous songs. Milestone 312 supports a feature referred to as "Speak out" which associates a recorded message with an RFID tag so that the user will hear this message whenever the corresponding tag is scanned. If a variety of songs are shortlisted, then the sole choice for a user is to step through the songs sequentially. When different techniques like tooth-touch sound are accustomed choose songs, it'd be laid low with noise. All these music players use keyboard and show interfaces through that songs are selected, which is much not possible to be utilized by visually blind people.

III Proposed System

Once the application is open, the music player can be activated by using a hot keyword through voice recognition. The user can now speak out what he wants the application to do, like play a particular song or turn the shuffle on or off. Apart from these features, the music player provides many more features that the application can perform on the user's command. the music player will be created using Dart. For voice recognition, Alan's voice recognition API is used. The voice-controlled music player is an intelligent personal assistant human language interface, automation, and voice recognition software for android and iOS systems that allows you to interact with your music player using voice commands in English. so, instead of using a music player which has to be operated with physical touches over and over it is better to have a music player which acts as an artificial intelligence simplifying our problem and make it easy to operate.

Advantages:

- The visually impaired can access the music player without having to touch the interface.

- Truck driver's often meet with accidents since they use their mobile phone while driving, the proposed solution minimizesthe usage of mobile while driving.

- People at the gym, during their workout,won't have to take breaks in between justto change their music track.

IV Implementation

The following technologies have been used to build the proposed project.

Python

Python is a high-level, object-oriented, interpreted programming language. Python is a user-friendly language i.e. it is a simple, easy and readable programming language.Unlike other programming languages like HTML, CSS, orC, Python is a general-purpose language, which makes it compatible with most of the technologies. Python's syntaxenhances code readability with its usage of code indentation. The language is supported by a lot of inbuilt libraries as well as external libraries since it has a huge community.

Flutter

Mobile users expect their applications to have elegant designs, smooth animations and flawless performance. To achieve this developer, need to build new features faster than ever without compromising on design or performance.Google brings Flutter, which helps in building such applications. Flutter is a mobile UI framework that allows developers to build fast and expressive native apps on bothiOS and Android. This is because applications and interfaces built with Flutter are from one codebase, compiled directly to native code, use the GPU, and can access platform APIs and Services.

NoSQL

NoSQL databases (also called "non-SQL") do not store datain the form of tables, and the way they store data is different from relational tables. There are different types of NoSQL databases according to the data model. The main types are documents, key values, width columns, and graphics. They provide flexible solutions and can be easily scaled for largeamounts of data and high user loads.

This application includes three modules, where each module is defined to perform a different task. These modules are:

- User Activity
- Voice Recognition module
- Admin Module
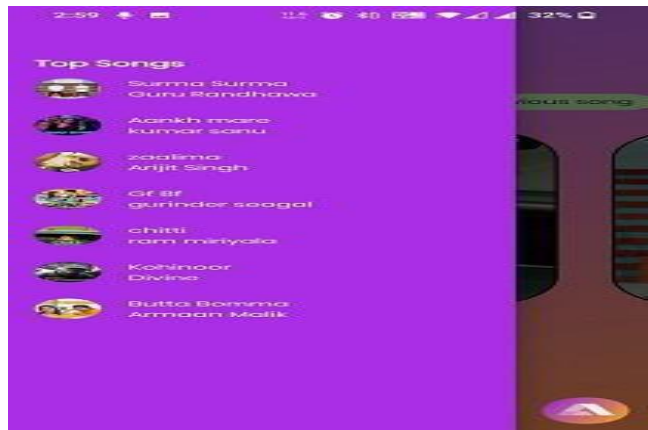
User Activity

The user would be able to log in and register in the app. The application would still be accessible to the user even withoutsigning in, signing in to the application would allow the userto use features like creating a Wishlist, playlist, and to keep track of the music. The user can interact with the music player and can navigate through the entire application just with voice commands. The user also can filter music by genre, which is possible with the help of a machine learningmodel. If the user is logged in, then he/she will be able to create a playlist or a Wishlist.

The user can also rate songs to be on the top list of the application.

Fig.4.1. Home page.

Voice Recognition

The voice commands that are received by the application need to be recognized by the server, an API is created to serve this purpose. The API works in terms of responses andrequests, it receives a response i.e. from the application. Theresponse is generated by a machine learning model which istrained on predefined intents.

Admin

Admin module allows the administration to access the application from the back-end, mainly uploading new songs, managing users, and ensuring the efficiency of the interface.
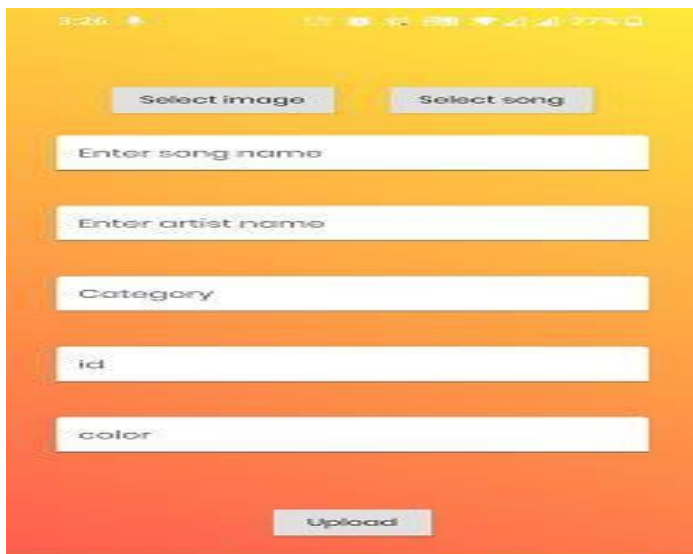

Fig.4.2. Admin page.

Working

After the user gives a voice command, the command is fetched by the application via the mic. The voice command is sent as a request to the Alan API, the voice command is matched against the predefined intents with the help of a machine learning model.
The matched intent results in a response by the trained model, this result is again converted into a response and is sent back to the application. The response is then received by the application and the action is performed according to i
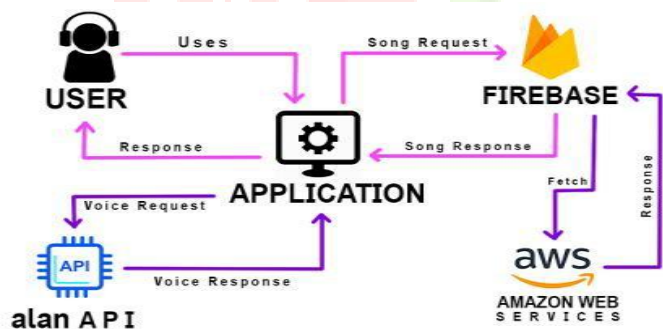

Fig.4.3. System Architecture.

V CONCLUSION

With the assistance of machine learning technology, it has become easy to figure out the relation and patterns among various data set that have undergone data cleaning and data transformation. The model outputs the response for voice commands given by theuser. The proposed solution overcomes the drawbacks of the traditional system, thereby helping people to enjoy music without any restrictions.

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