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"Emotion-Based Music Player Using Facial Recognition"

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Abstract: Music is an important entertainment medium. With the advancement of technology, the optimization of manual work has gained a lot of attention. Currently, many traditional music players require songs to be manually selected and organized. Users need to create and update a play-list for every mood, which is time-consuming. Some of the music players have advanced features like providing lyrics and recommending similar songs supported the singer or genre. Although some of these features are enjoyable for the user, there is room to improve in the field of automation when it comes to music players. Selecting songs automatically and organizing these supported the user's mood gives user's a far better experience. This can be accomplished through the system reacting to the user's emotion, saving time that might are spent entering information manually. Emotions are often expressed through gestures, speech, facial expressions, etc. For the system to understand a user's mood, we use facial expressions. Using the mobile device's camera, we will capture the user's countenance.

Keywords: Music, Emotions, Music Players, Users, Songs**.**

I. INTRODUCTION

This system is an emotion-based music player. It's a useful tool for the system will determine emotions and create play-lists for the user, based on the emotion captured. The application also allows the user's to easily customize the playlists. It recommends songs for the user that may fit their current emotion, helping the user automate the initial song selection. As soon as the user opens the application, the device's camera opens and begins capturing images. The system will determine emotions and create play-lists for the user based on the emotion captured. The application also allows the user's to easily customize the playlists. It recommends songs for the user that may fit their current emotion, helping the user automate the initial song selection. The recommendations are based on the previous information about the user's preferences and usage.

II. MOTIVATION OF PROJECT

Our motivation in this work is to use emotion recognition techniques to generate additional inputs for music recommended system's algorithm, and to enhance the accuracy of the resulting music recommendations. A music player should be intelligent and act according to user's preferences. A music player should help users organize and play the songs automatically without putting much effort into selection and re-organization of songs. The Emotion-Based Music Player provides a better platform to all the music listeners, and ensures automation of song selection and periodic updating of play-lists. This helps users organize and play songs based on their moods.

III. PROBLEM STATEMENT

Music listeners have a troublesome time creating and segregating the playlist manually once they have many songs. It is also difficult to stay track of all the songs. Users need to manually select songs whenever supported interest and mood. The user also has difficulty re-organize and playing music when the play-style varies. Currently, in the existing application, music is organized using a play-list, and play-list songs cannot be modified or altered in one click. Users need to manually change or update each song in their playlist whenever. Currently, there are no applications that allow users to play songs on-the-go without selecting songs manually or from a play-list.

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IV. PROPOSED SYSTEM

a) Hardware Requirements:

Sr.no	Resources	Configuration
1.	Processor	Intel i5 core
2.	Speed	1.1 GHz
3.	Ram	4 GB
4.	Hard Disk	25 GB 4

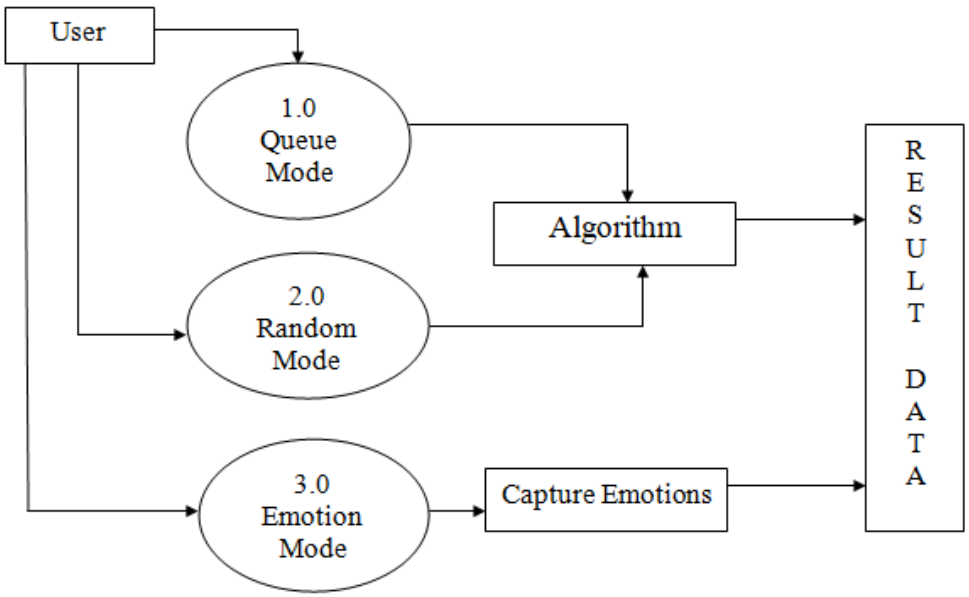
b) Software Requirements:

Sr. No.	Resource	Configuration
1.	Operating System	Windows 10
2.	Coding Language	Python
3.	Software	PyCharm

V. TABLE OF CONTENT

VI. DETAILS OF DESIGN WORKING AND PROCESS

1.Block Diagram



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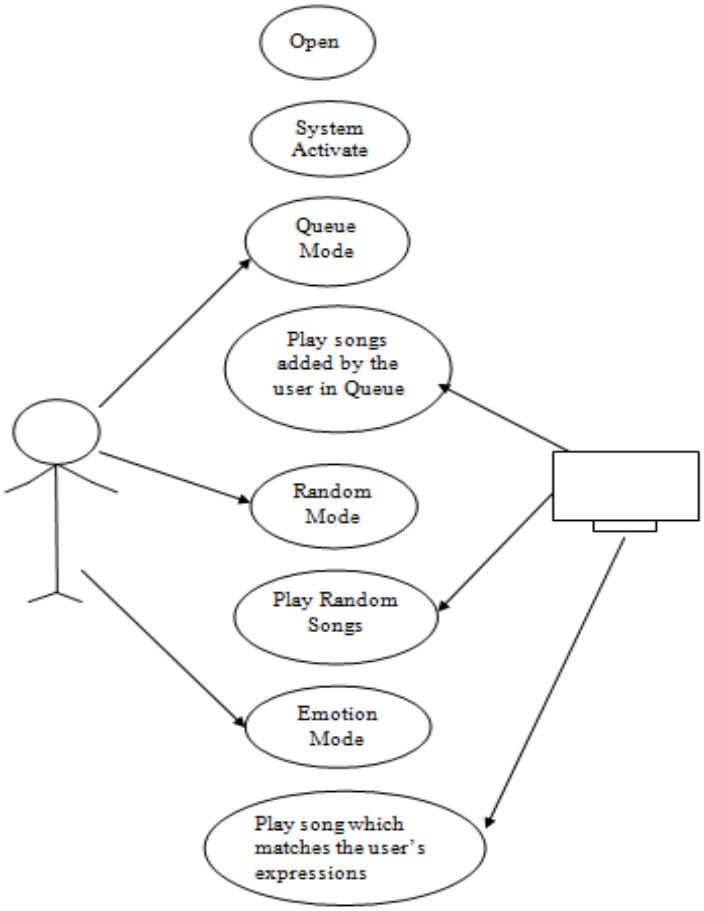
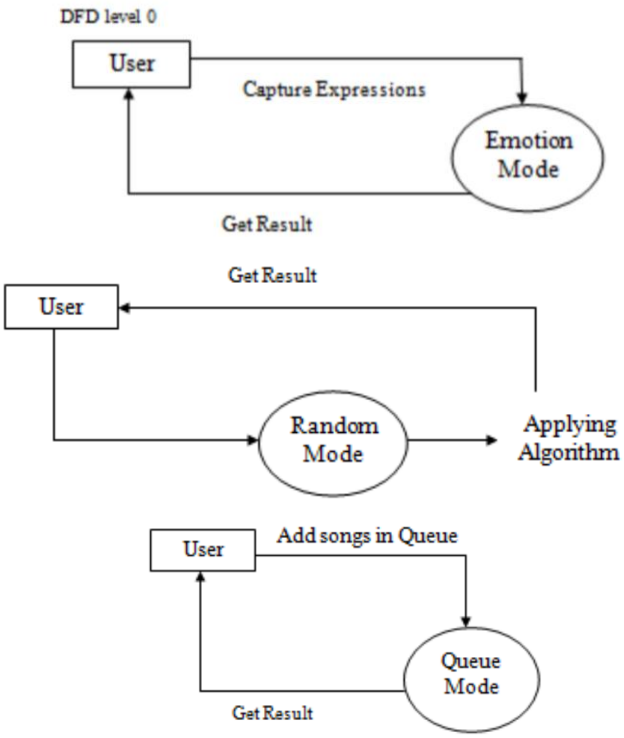
2. Use Case Diagram



3.Data flow diagram



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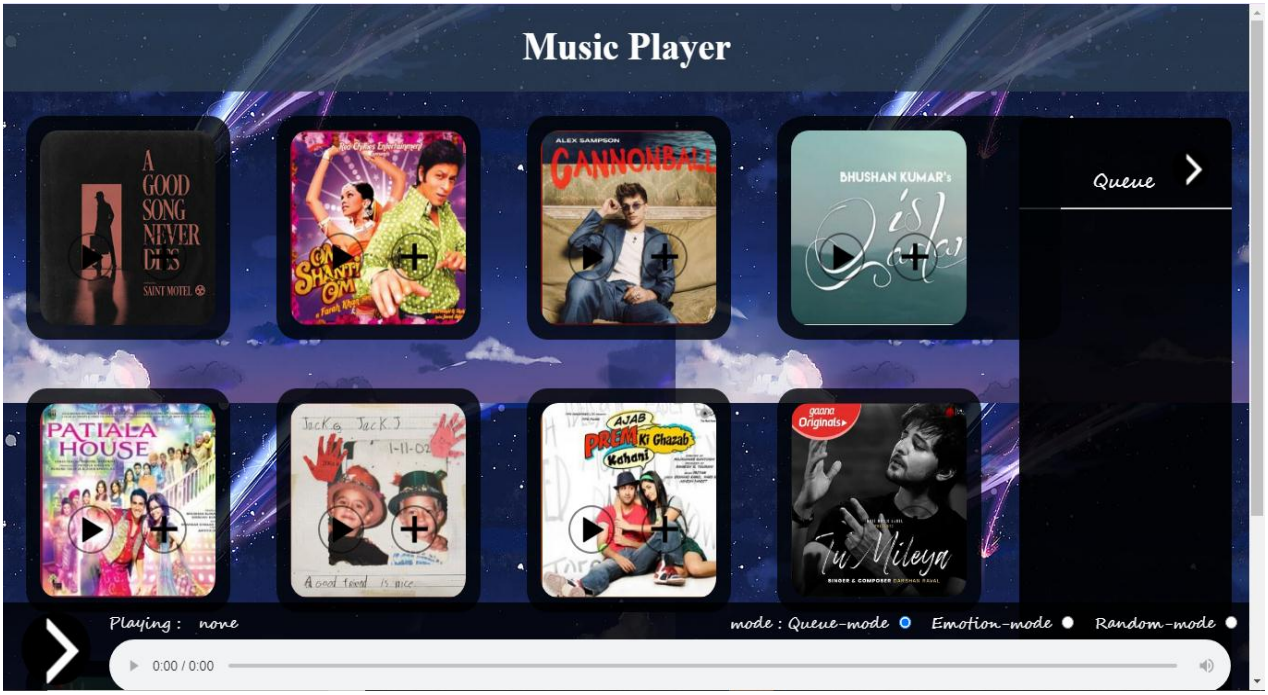
VII. WORKING

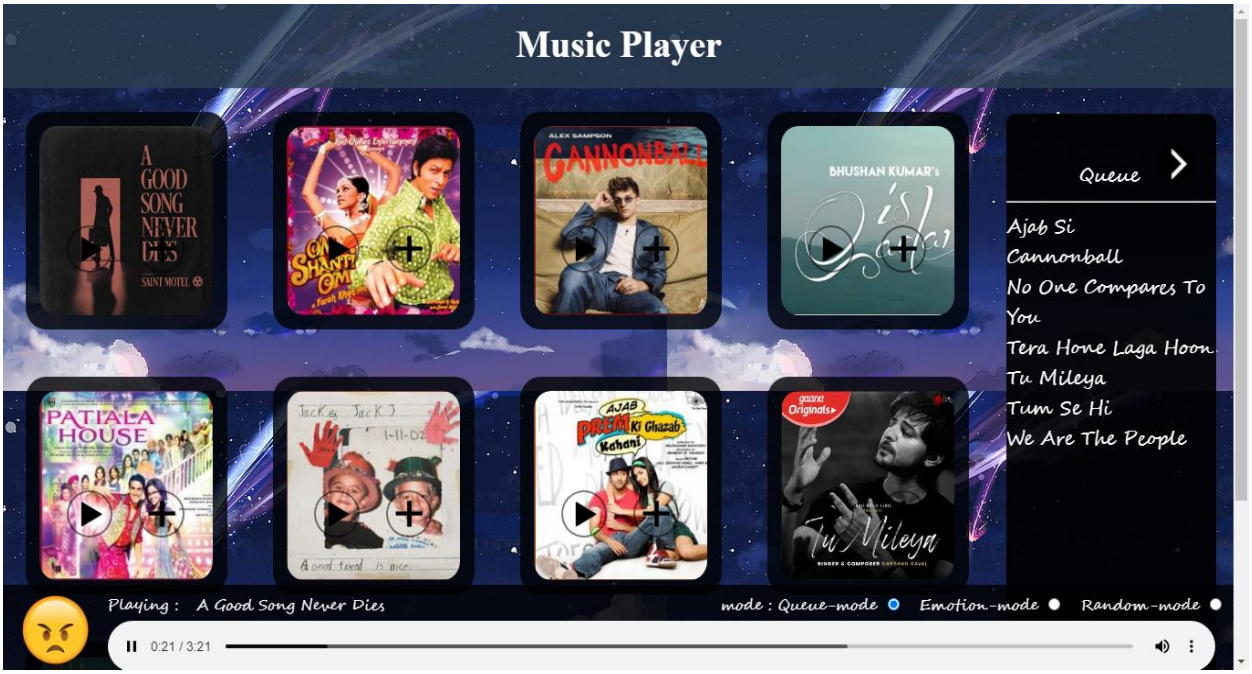
1) Main Page:

This is the main page of the web application. In this all the songs are displayed. There are 3 modes at the right bottom corner. You just have to click the mode you want. Songs will play as per your given mode. The given queue box contains the songs user will add for the queue mode



2) **Queue Mode** (Add songs in a queue)

In this mode you have to add the songs you like by clicking the add (+) button. Songs will be displayed in the queue box containing the songs you added. The given snapshot is playing the songs present in the queue added by the user.



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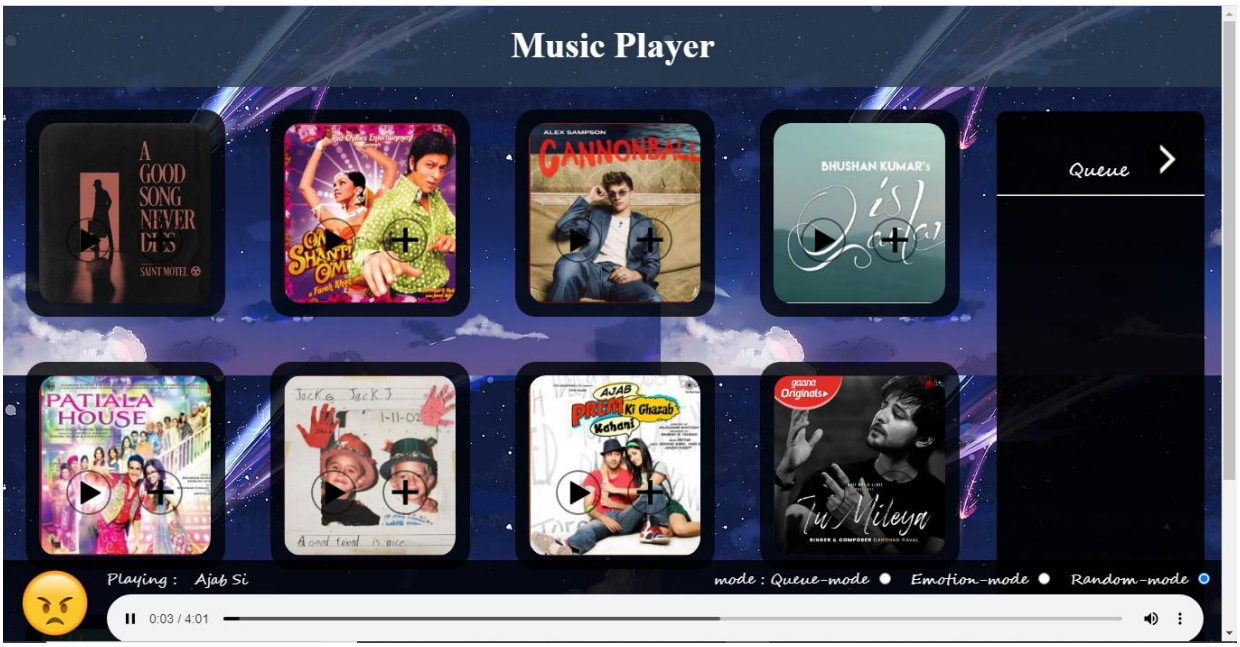
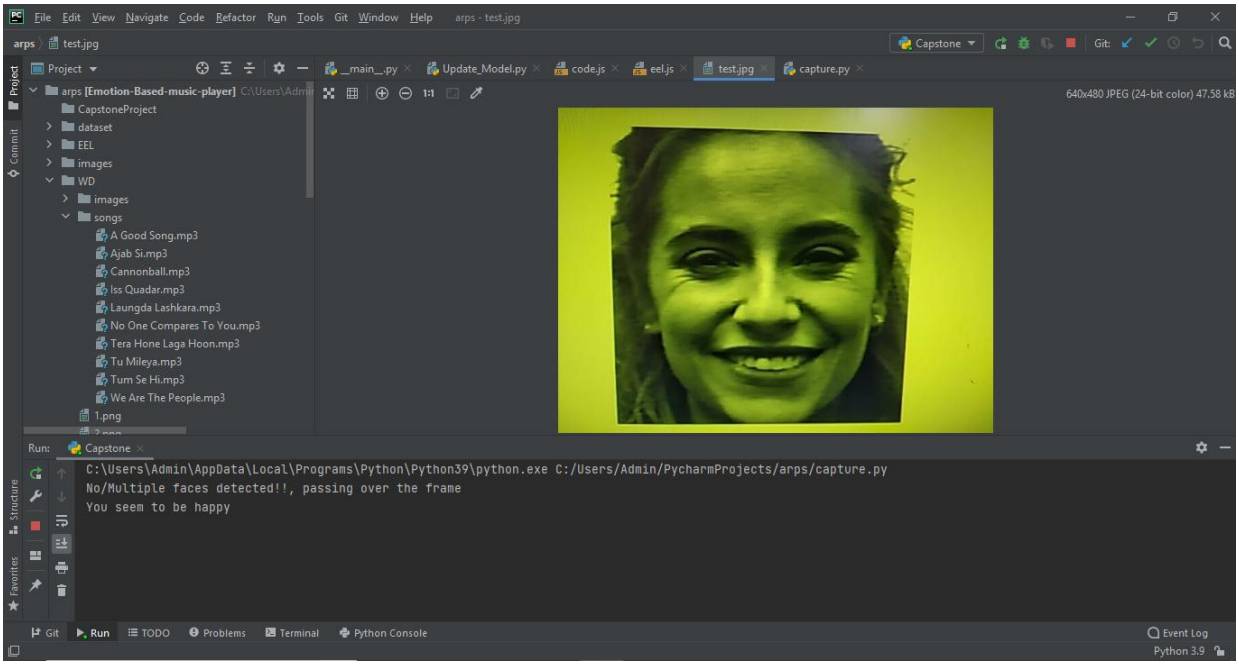
3) Random Mode:

In this mode songs will be played randomly from the application.



4) Emotion Mode

This is the main mode of this application. In this, camera captures the expression of the user and then provides it to the application. The application matches the given test picture with the datasets provided by the developer. Then the application plays the song which matches the user's emotion or expressions.



Here in this case the users expression matches to the happy state hence the application will play the song according to the happy state.

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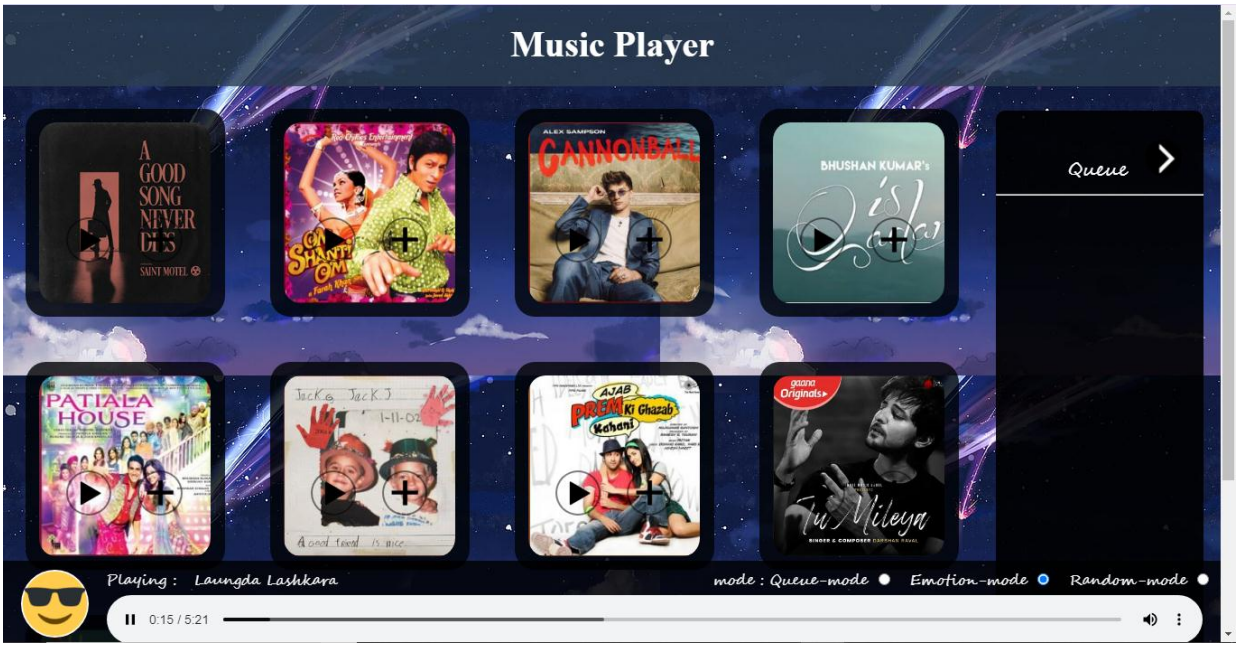

VIII. FUTURE SCOPE

Emotion Based Music player is a useful application for music listeners with an Internet connection. The application is designed to meet the following needs of the users as described below

1. Adding songs
2. Random songs
3. Updating songs
4. Personalized play-list
5. Recommendations
6. Capturing emotion using the camera

IX. CONCLUSION

Emotion Based Music Player is all about a player which plays songs based on our mood. Some of the music players have advanced features like providing lyrics and recommending similar songs supported the singer or genre. Although some of these features are enjoyable for the user, there is room to improve in the field of automation when it comes to music players. Searching the music according to our mood is quite difficult and we always want to save our time in little things and this application does the both things, It plays songs according to our Mood and saves our time to search the songs. The application has 3 mode: 1st is Queue which is default mode. You've to add the songs displayed on the page. 2nd is Random mode in which application plays the songs randomly. 3rd is Emotion mode, Application captures your emotions and plays the song according to your mood. This mode helps us to save our time rather than searching and creating playlist.

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- All music: https://medium.com/giglue/top-10-genres-of-music-industry-7f19cdb177cb
- Emotional recognition: https://en.wikipedia.org/wiki/Emotion_recognition

Books

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- Python Advanced Guide – Armando Fandango.