Emoji Based Songs Recommendation System

A Minor Project Report

in partial fulfillment of the degree

Bachelor of Technology
in
Computer Science & Artificial Intelligence

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SCHOOL OF COMPUTER SCIENCE & ARTIFICIAL INTELLIGENCE

CERTIFICATE

This is to certify that this project entitled**"EMOJI BASED SONGS RECOMMENDATION SYSTEM**"is the bonafied work carried outby**K.SHARVANI,V.VARSHITHA,B.NISHMITHA** as a Minor Project for the partial fulfillment to award the degree **BACHELOR OF TECHNOLOGY** in **COMPUTER SCIENCE & ARTIFICIAL INTELLIGENCE** during the academic year 2022-2023 under our guidance and Supervision.

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ABSTRACT

The aim of emoji based songs recommendation system is to enhance the user experience of retrieving song lists from a database by providing a novel and playful interaction method. In this, we have developed asystem that allows users to input emojis representing various moods, genres, or themes and in response,the system fetches a curated list of songs that match the selected emojis. This Emoji songs recommendation system not only makes the song discovery more enjoyable but also create to a wide audience by removing language barriers. Users can explore music in amore visual and emotive way, finding songs that resonate with their feelings and preferences through a simple emoji selection. Users can express their current moods, feelings or desires by selecting emojis, and in response, the system generates tailored song suggestions that align with chosen emojis. The system is expected to be useful for a variety of purposes, such as helping users to discover new music that they might enjoy, creating personalized playlists for different moods and occasions, and enhancing the listening experience by providing users with information about the songs they are listening to. This feature would be a valuable addition to any database of songs. It would allow users to search for songs more quickly and easily, discover new songs, and make the database more user-friendly and accessible.

ORGANIZATION OF THESIS

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   2.1. RELATED WORK
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3. DESIGN
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8. FUTURE SCOPE

CHAPTER 1
INTRODUCTION

1.1 EXISTING SYSTEM :

Currently, there isn't an existing system specifically designed for emoji-based song recommendations. That's what makes this concept so exciting and fresh! It's a brand new way to discover music that perfectly matches our emotions or preferences expressed through emojis. Imagine being able to simply type in a combination of emojis that represents how you're feeling at the moment, and instantly getting a playlist tailored to those emotions. Whether it's a heart-eyed emoji for a romantic ballad, a dancing emoji for an energetic track, or a peaceful emoji for a calming melody, the possibilities are endless! It adds a playful and interactive element to our music exploration, making the process even more enjoyable.By using emojis as a language to communicate our musical tastes and emotions, we can discover hidden gems and connect with songs that resonate with us on a deeper level. It's like having a personalized DJ who understands our mood and curates the perfect soundtrack for every moment.

1.2 PROPOSED SYSTEM:

In a world where music is a universal language that speaks to our hearts and emotions, emojis have the power to enhance our musical experiences. They go beyond being a digital language and serve as a universal expression of emotions, transcending linguistic barriers and cultures. Our project aims to leverage this universal emotional language to discover different songs and enjoy music in a unique way.
Emojis can be used to represent different moods or themes in tracks, allowing us to connect with the music on a deeper level. Whether it's a happy face for an upbeat song, a crying face for a heart-wrenching ballad, or a fire emoji for a track that gets us pumped up, emojis add another layer of emotion and enjoyment to our musical journey. So let's explore the world of music together and see how emojis can make our listening experiences even more exciting. Emojis have become such a fun and creative way to express ourselves, and incorporating them into our music experience takes it to a whole new level. Imagine scrolling through your favorite music app and seeing a collection of emojis that represent different genres, moods, or even instruments. It adds a visual element to our musical journey and helps us discover new songs that align with our current emotions or preferences

CHAPTER 2
LITERATURE SURVEY

2.1 RELATED WORK:

- The paper is about the text of a scholarly paper, which includes the current understanding along with great findings, as well as theoretical and methodological contributions to particular topic. And we humans interact or explore all the different ways with music recommendation systems. Facial expressions are such a powerful way to understand someone's current mental state, and its really cool that the viola-Jones algorithm is used to detect and analyze those expressions in the music player app. And the idea of using wearable devices with sensors like GSR and PPG to measure our physiological response is a really promising approach to recommend music based on our emotions. Emotions are such a fundamental part of who we are.
- Researchers used pretrained networks like Resnet50, vgg19, Inception V3, and Mobile Net to recognize emotions. They replaced the fully connected layers of these networks with their own layers. One study achieved a 96% success rate on average for emotion recognition tasks. Another study developed a model that worked well with low-resolution images and introduced a hybrid filtering approach. This approach improved accuracy to 0.95. Capsule Networks were also proposed to enhance accuracy by addressing unnecessary information in face images.
- The different systems and algorithms were used for face detection, recognition, and expression detection. The use of anaconda and python 3.5, along with viola-Jones and haar cascade algorithms, proved effective for face detection. Additionally, the combination of KDEF dateset,VGG 16 and CNN model achieved an accuracy of 88 % for face recognition and classification. Another system utilized python 2.7 , Open CV, and CK/CK+ databases, achieving an accuracy of approximately 83% for facial expression detection. It was noted that the extended cohn-kanade(CK+) databases is valuable for prototyping and bench marking facial expression detection system but more data is needed for robustness in various scenarios.
- Researches have proposed a different approach to classify human emotional states. They focus on basic emotions and use algorithms to analyze facial curves and predict emotions. This process involves learning methods and can be computationally expensive. Haar- cascade and OpenCv are used to study facial structure and visualize data. Removing facial properties in real-time can be challenging, but there are some system that can create playlist based on emotion

2.2 SYSTEM STUDY :

1. Java Programming Language:

   Java is a versatile, object-oriented, high-level programming language that is widely used for building software applications. It is known for its platform independence, security features, and extensive libraries, making it an excellent choice for developing a variety of applications, including web and desktop applications.
2. Eclipse IDE (Integrated Development Environment):

   Eclipse is a popular, open-source integrated development environment that provides tools and features for software development. It offers a code editor, debugger, and other utilities for programming in various languages, with a focus on Java development.
3. Emoji:

   An emoji is a small digital icon or symbol used in electronic communication to represent emotions, objects, ideas, or concepts. Emojis are often use to convey feelings, moods, and expressions in a visually concise and universally understandable manner.
4. Music Database:

   A music database is a structured collection of music tracks, metadata, and related information, such as artist names, genres, release dates, and more. It serves as the source from which emoji retrieves song recommendations.
5. Emoji-to Emotion Mapping:

   Emoji-to-emotion mapping involves associating specific emojis with particular emotional states or sentiments. In this mapping is crucial to understand the user's emotional input and suggesting songs that match the expressed emotions effectively.
6. Recommendation Algorithm:

   A recommendation algorithm is mathematical or computational method used for analysis of the user data and generate song suggestions. This employs recommendation algorithms to match user input with songs in the database
7. Metadata:

   Metadata encompasses additional information about the suggested songs in the database, such as song title, artist, album, release date, and genres etc.
8. database Query:

   A database query refers to the process of searching the music database to find songs that match the user's input and uses queries to identify and retrieve relevant songs for recommendation.

In summary, these elements play integral roles in the emoji-Based songs Recommendation System project, to develop an interface for the users to listen songs that are recommended by the selected emojis

CHAPTER 3
DESIGN

3.1 REQUIREMENT SPECIFICATION

The primary objective of this project to develop a user-friendly and engaging song re-travel system thatleverages emojis to provide a novel and intuitive interface for accessing songs from a database. This system, referred to as "Emoji based songs recommendation" aims to:

1. Enhance User Experience: Create an innovative and fun way for users to interact with a music database by allowing them to give input emojis to convey their current moods, preferences, or emotional states, the thereby making song re-travel a more enjoyable and personalized experience.
2. Language-Barrier Removal: Eliminate language barriers by enabling users to express themselves through universally understood emojis, ensuring that individuals with varying language proficiency can easily navigate and access the song database.
3. Personalization: Develop a recommendation system that utilizes the database and deliver the selected emoji song suggestions that align with the user's input.
4. Efficiency and Accessibility: Streamline the process of finding songs from a vast music database, saving users time and effort in searching for music that resonates with their current emotional states or preference's.
5. Innovation: Showcase the creative use of emojis as a bridge between emotions and music data, demonstrating the potential for novel user interfaces in the context of digital media and content discovery.
6. Demonstrate Java and Eclipse: Showcase the capabilities of Java as a programming language and the Eclipse IDE as a development environment for building practical and efficient software solutions.

In summary, the project objective is to develop a user-centric, and enjoyable, while also addressing language diversity and personalization in the music discovery process.

DESIGN OF PROJECT :

This design provides a structured framework for developing the Emoji based songs recommendation System, ensuring that it meets its objectives of user-friendly for users to enjoy the recommended songs as per their given emoji as an input.

Design Overview:

The system is dived into the following major components:

1. Login/Sign up:

This screen will allow user to login/sign up into the chat bot.

2. User Interface:

The UI will allow users to input emojis, view recommended songs.

3. Back-end Design:

The songs mappings according to the emoji given as an input.

1.login/Sign-up- Which includes:

Login Screen: Where user can enter the username and password, it retrieves to the chat-bot.

Sign-up Screen: Where user can enter his/her email, phone number, username, and password for sign-up It retrieves to the login screen.

2. User interface- Which includes:

A Label: To enter an emoji.

A table View: To view the recommended songs list with other details related to that emoji.

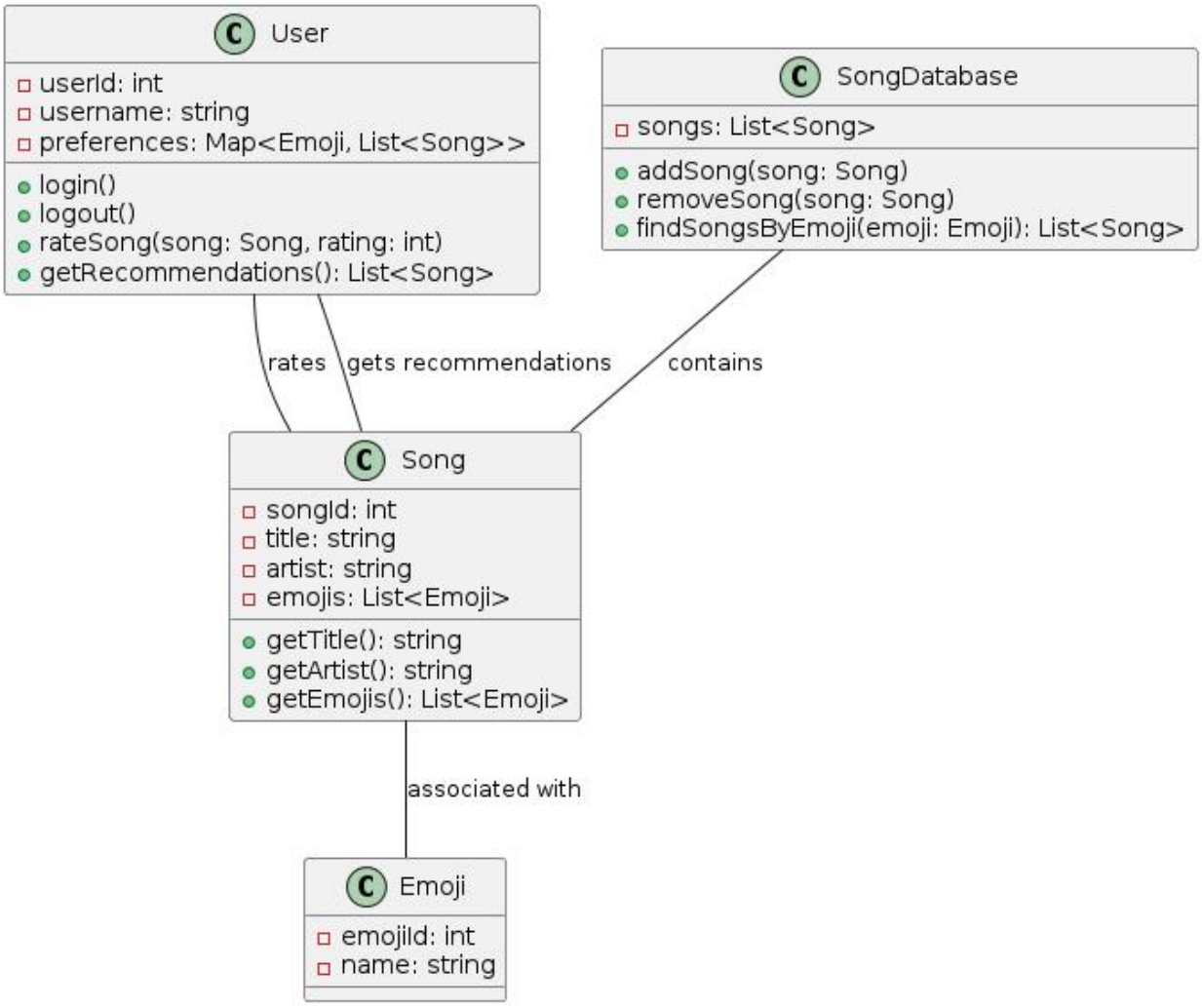
A search Button: To get the song results.

3. Back-end Design-Which includes:

Emoji-Mapping: Mapping to match selected emojis with songs in the database.

Music Database: A Set up database (e.g., SQLite, MySQL) to store song information, including title, artist, author etc.

3.2 UML DIAGRAMS OR DFD:



SCREENS

The chatbot songs recommendation system contains 4 screens

Screen1-

LOGIN PAGE includes username and password text fields, a login button.

Screen 2-

SIGN UP PAGE includes email, phone number, username, password and a sign up button.

Screen 3-

HOME PAGE in this the user can enter the emoji and can click the search button to get the recommended songs.

Screen 4-

EXIT PAGE will whether the user want to exit or not.

CHAPTER 4
IMPLEMENTATION

4.1 MODULES:

The emoji based songs recommendation system is a project build by using java and swing as a starting point. We would need to break these steps down further and implement each part in detail.

i. Set up a Development Environment:

-Install Eclipse IDE and java.

-Create a new Java Swing project in Eclipse

ii. Create a Song Database:

-Set up a database to store song information, including title, artist, author etc.

iii. Design:

-Create a main window for the application.

-Add UI components like buttons, panels, and recommendation display areas.

-Create login, sign up and exit screens.

iv. Implement the Emoji Input:

-Integrate emoji selection, allowing users to choose emojis representing their mood or emotion.

v. Integrate the Database:

-Use SQL or a database library (e.g., JDBC) to interact with music database,

-Retrieve song information, including all the columns in the database.

vi. Display recommendations:

-When a user selects emojis and initiates a search, the system should retrieve and display recommended songs.

-Show song information.

4.2 OVERVIEW TECHNOLOGY

1. Java Programming Language:

   Java is a versatile, object-oriented, high-level programming language that is widely used for building software applications. It is known for its platform independence, security features, and extensive libraries, making it an excellent choice for developing a variety of applications, including web and desktop applications.

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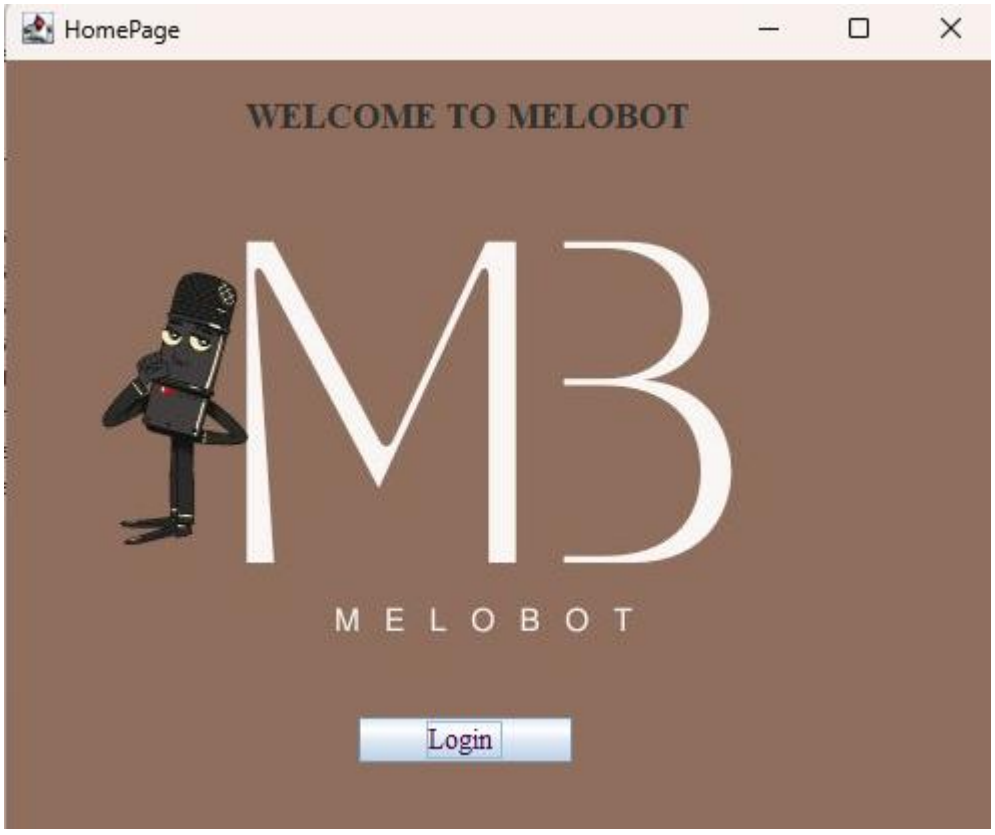
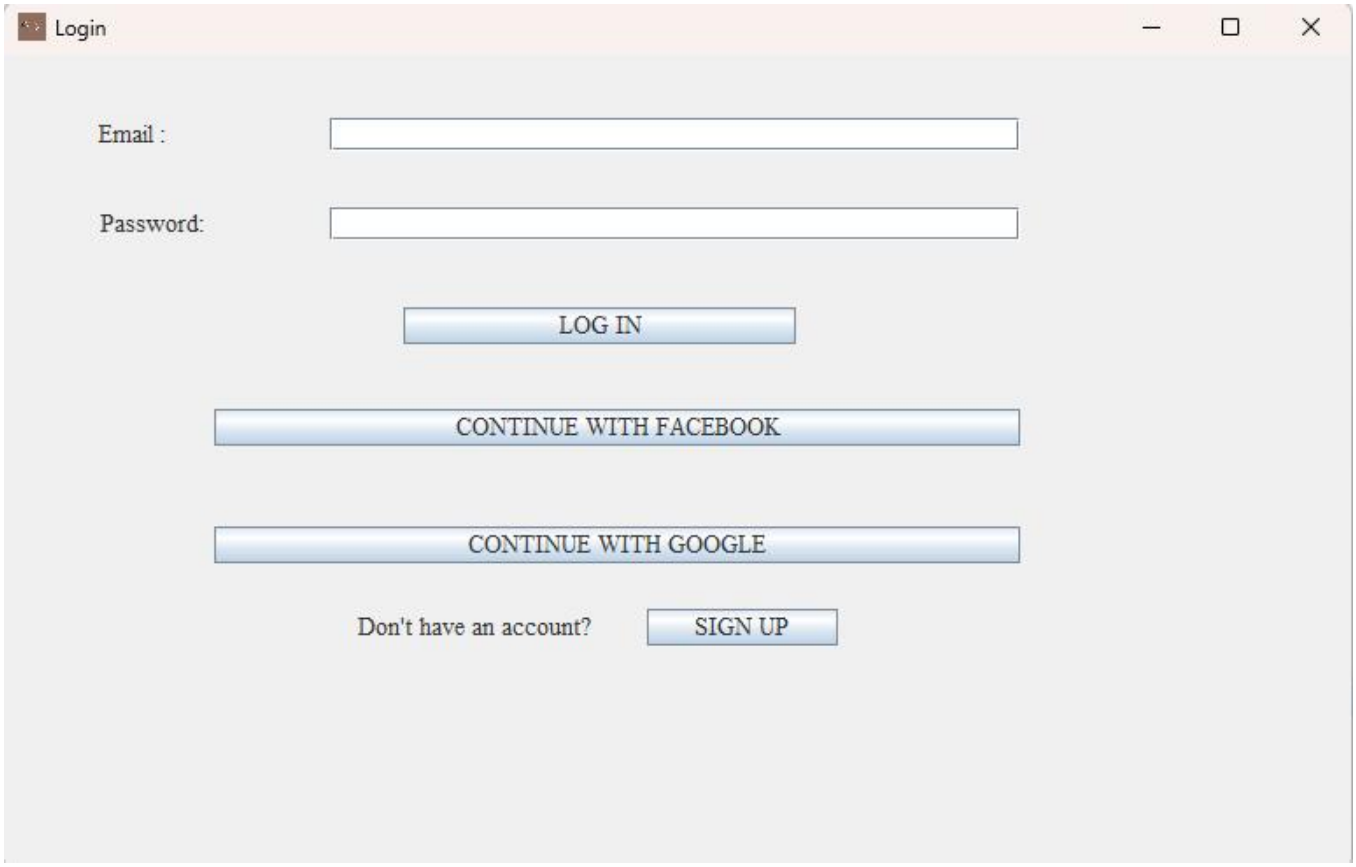
CHAPTER 5
TEST CASES

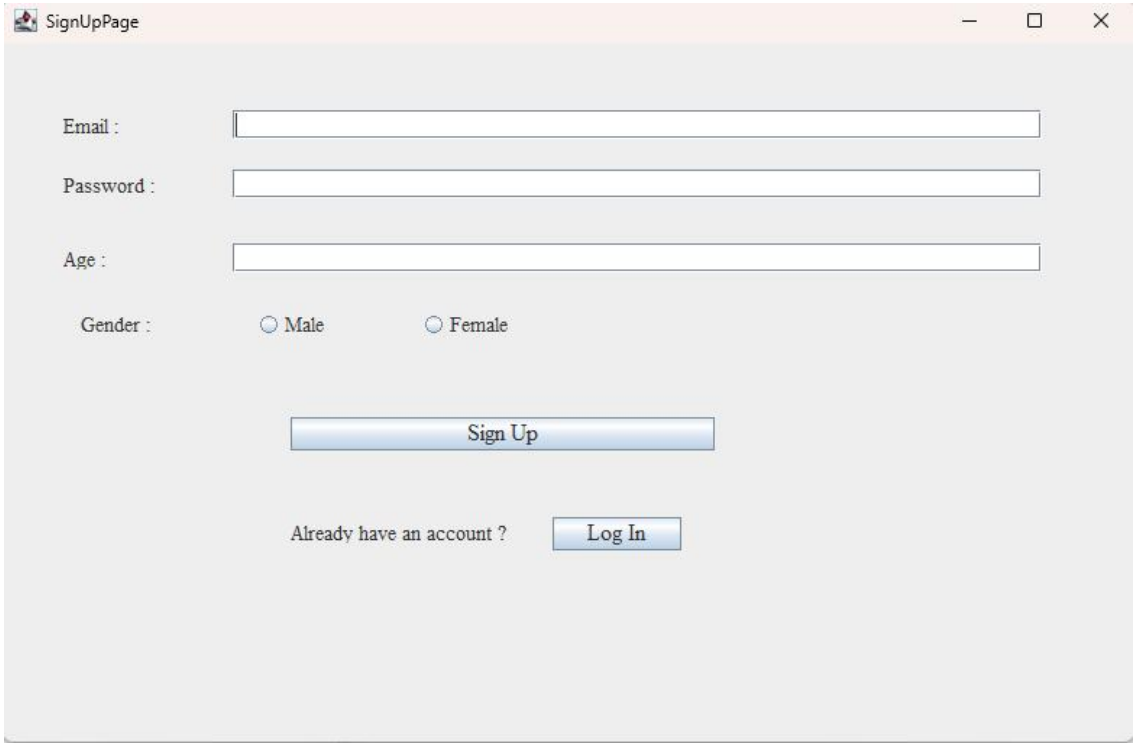
SCREEN 1: HOMEPAGE



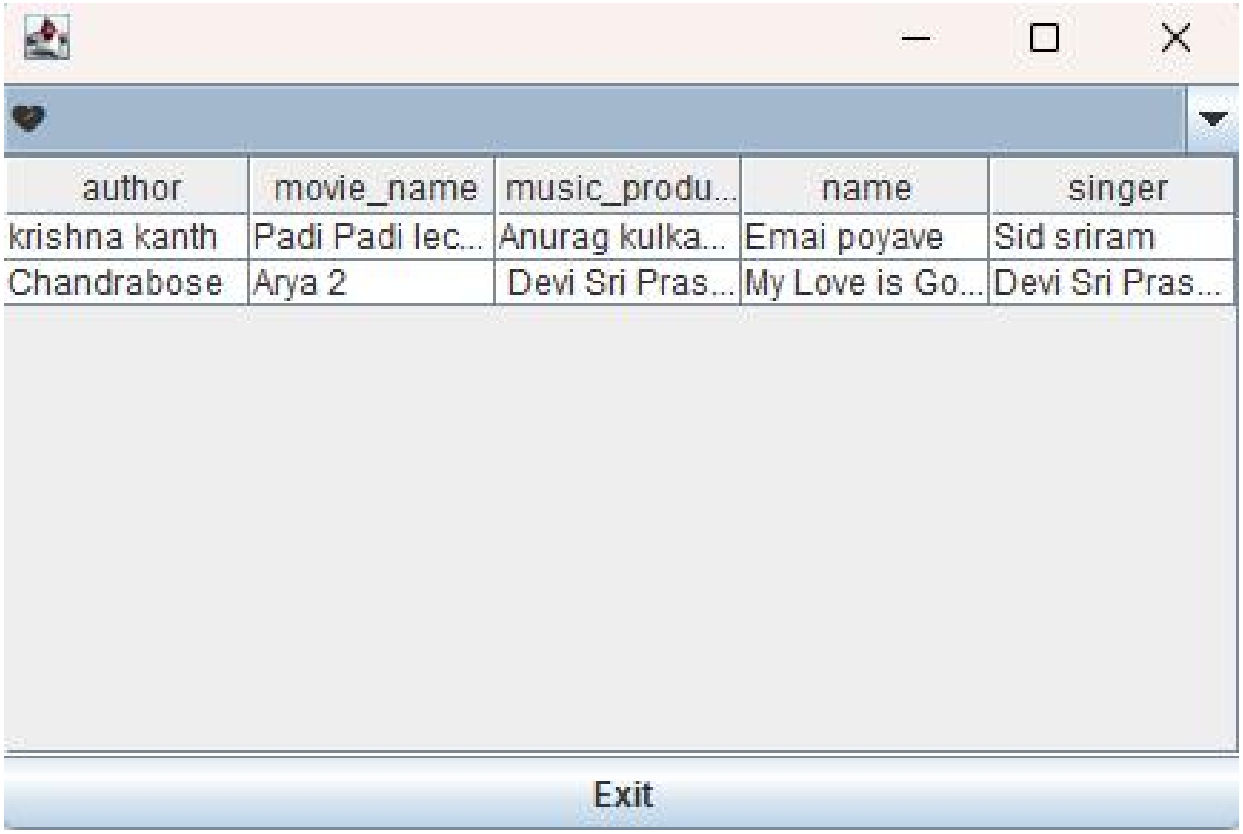
SCREEN 2: LOGINPAGE



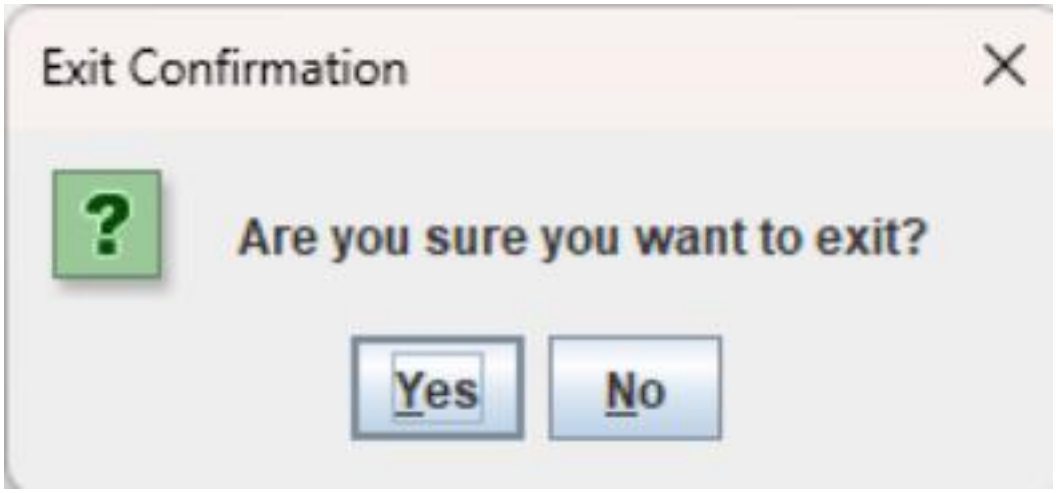
SCREEN 3: SIGNUP PAGE



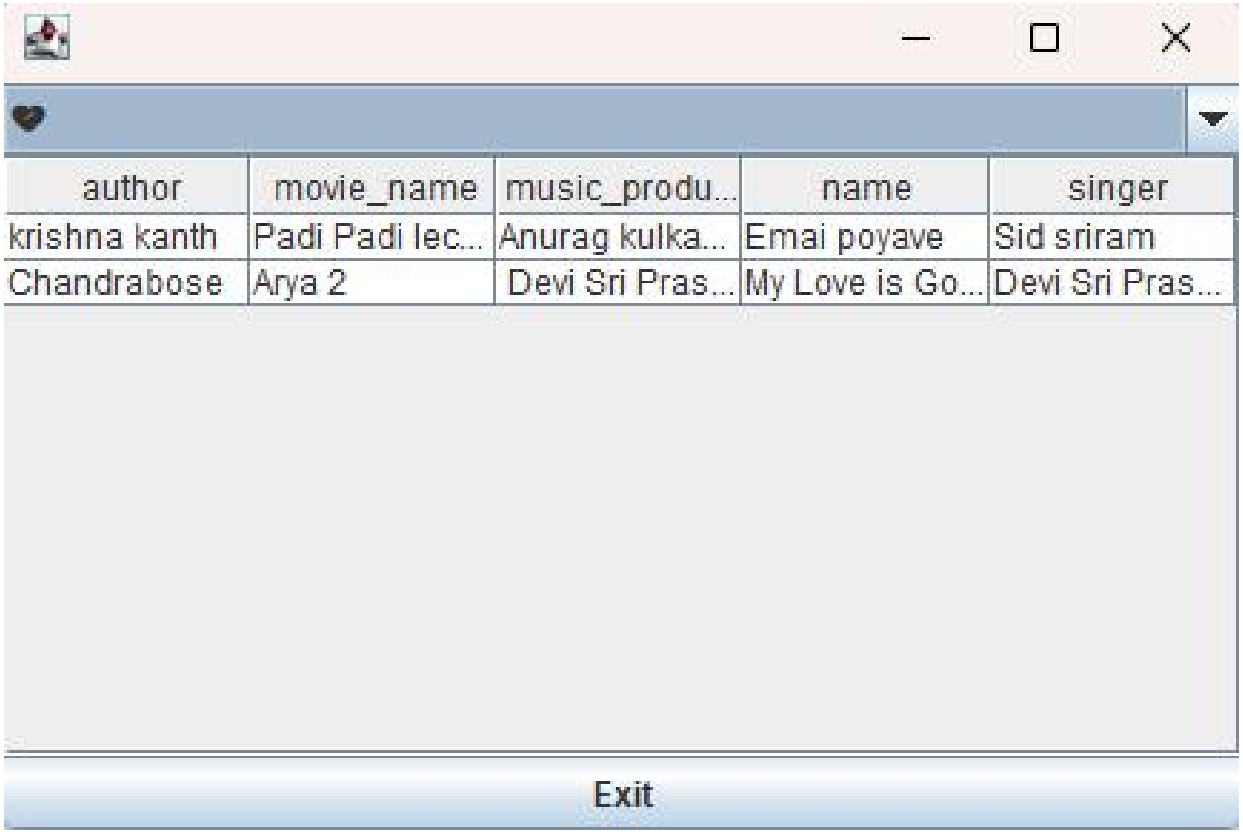
SCREEN 4: DISPLAY PAGE



SCREEN 5: EXIT PAGE



CHAPTER 6
RESULTS



CHAPTER 7
CONCLUSION

The emoji-based song recommendation system encompasses several key components to create a seamless and enjoyable user experience. It includes an intuitive interface for emoji input, an engine that matches emotions to songs, a comprehensive music database, a recommendation algorithm, and user profile management.With this system, users can effortlessly express their mood or emotions by selecting emojis that resonate with them. Based on these selections, the system generates a curated list of song recommendations that align with the chosen emojis. It's like having a personal DJ who understands your feelings and musical preferences!The beauty of this system lies in its ability to help users discover new songs that they may not have come across otherwise. By incorporating a well-structured song database and utilizing an efficient recommendation algorithm, users are exposed to a wide range of music that suits their mood and tastes.Implementing this system using Java Swing application in Eclipse would be a great choice. Java Swing provides a user-friendly and visually appealing interface, making it easy for users to navigate and enjoy the song recommendation experience.In conclusion, the emoji-based song recommendation system is a valuable addition to any music player application. It adds a fun and unique way for users to search for songs and enhances their music discovery journey. So, get ready to explore a world of music that perfectly matches your emotions and preferences with just a few emojis

CHAPTER 8
FUTURE SCOPE

The emoji-based song recommendation system has the potential to improve emotion analysis by incorporating advanced algorithms and techniques. By analyzing the emotions conveyed through emojis, the system can better understand the user's mood and provide more accurate song suggestions.Integrating with music streaming APIs would be a fantastic addition to the system. This would allow users to directly access and listen to the recommended songs within their preferred music streaming platform, making the experience even more seamless and enjoyable.Personalizing recommendations based on user preferences is key to creating a tailored and satisfying music discovery experience. By taking into account factors such as past listening habits, favorite genres, and artists, the system can offer song suggestions that truly resonate with each individual user.Compatibility with multiple platforms is crucial in today's digital landscape. Ensuring that the system can be accessed and enjoyed across various devices and operating systems would greatly enhance its usability and reach.Utilizing collaborative filtering techniques can further enhance the accuracy of song recommendations. By leveraging the collective preferences and behaviors of a community of users, the system can identify patterns and similarities to provide even more personalized and relevant suggestions.The continuous evolution of technology, especially within the Java ecosystem, opens up exciting opportunities for further development and improvement of the emoji-based song recommendation system. With each advancement, we can look forward to an even more refined and delightful music discovery experience.