Project Phase IV Report

On

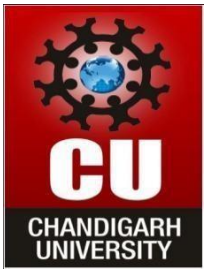
Ridhim

Submitted for the requirement of

Project course

BACHELOR OF ENGINEERING

COMPUTER SCIENCE & ENGINEERING



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SYSTEM IMPLEMENTATION

4.1 TECHNOLOGIES USED

KOTLIN

Kotlin is a modern programming language that runs on the Java Virtual Machine (JVM) and can be used to develop Android applications. Kotlin was developed by JetBrains and released in 2011, and it has since gained popularity as an alternative to Java for Android development.

Kotlin is a statically typed language that is interoperable with Java, which means that developers can use Kotlin and Java code together in the same project. Kotlin offers many features that make it more concise and expressive than Java, such as type inference, null safety, lambdas, extension functions, and coroutines.

XML

XML stands for eXtensible Markup Language. It is a markup language used to store and transport data. XML is similar to HTML in that it uses tags to structure data, but it is not intended for use in displaying data in a web browser. Instead, XML is used as a format for exchanging data between different applications and systems.

XML is a flexible and extensible format that allows developers to define their own tags and structure data according to their needs. XML tags are enclosed in angle brackets (< >), and they are used to define the structure of data.

FIREBASE AUTH

Firebase Auth is a service provided by Google's Firebase platform that enables developers to add authentication and authorization to their applications with minimal effort. Firebase Auth provides several authentication options, including email and password authentication, phone number authentication, social authentication (using services like Google, Facebook, Twitter, and GitHub), and anonymous authentication.

Firebase Auth simplifies the authentication process for developers by providing a client-side SDK that integrates with the Firebase backend. This SDK handles user authentication and securely stores user data, including user IDs, passwords, and other authentication tokens. It also provides an API for developers to manage user accounts and handle authentication events.

Firebase Auth provides a secure authentication process that includes hashing and salting user passwords, as well as supporting multi-factor authentication (MFA) to add an extra layer of security to user accounts. Firebase Auth also integrates with other Firebase services, such as Firebase Realtime Database, Cloud Firestore, and Cloud Functions, to enable developers to create secure and scalable applications with ease.

Firebase Auth also provides built-in UI components that developers can use to create a custom authentication flow in their applications. These components provide a user-friendly interface for signing in and signing up, as well as password reset and email verification workflows.

4.2 IMPLEMENTATION OF SOLUTION

The project required a lot of thinking on how and what features should be implemented. Keeping all the basic necessary requirements a project should have as well as bringing out some less executed concepts, we have summarized some features the app contains as follows:

4.2.1 Feature 1: User Login

One of the main features of the Ridhim application is the login- based authentication. The user registers himself/herself and logs in using his/her user-id and password. After logging in, a dashboard will be appeared which will persist until andunless a user either logs out. When you Log out, the user won't be able to see the contentand again you come in the login page.

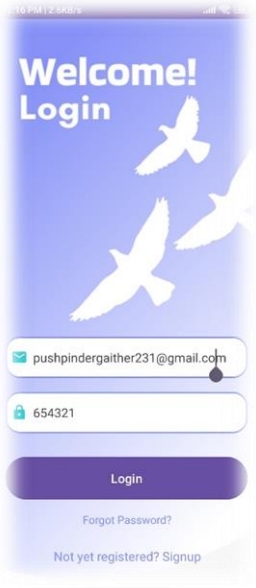


Figure 1: USER Login authentication

4.2.2 Feature 2: Interactive GUI

As You can see the GUI of the application is very fascinating. The user will like to use the application and will enjoy the music.

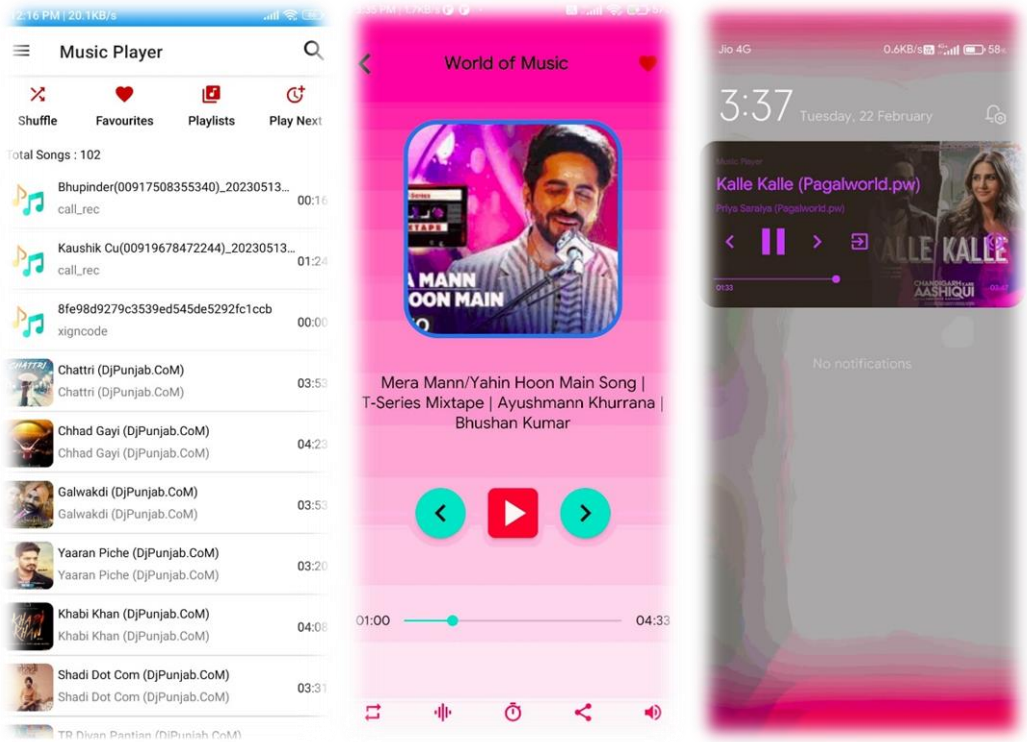


Figure 2: Interactive GUI

4.2.3 Feature 3: User Sign-up

One of the most common features most applications have is the sign-up feature. This application allows a user to create their account and proceed with further operations.

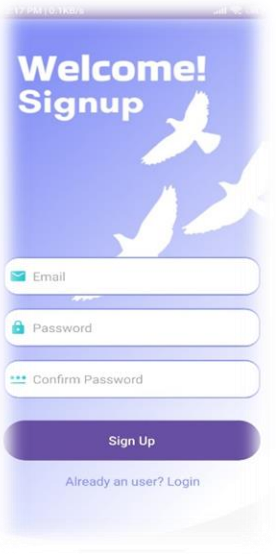
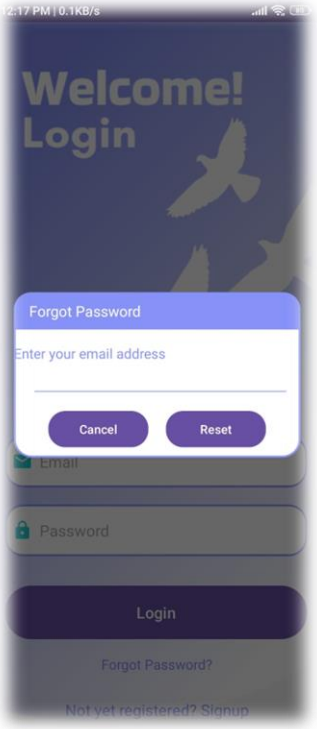


Figure 3: Sign-up option

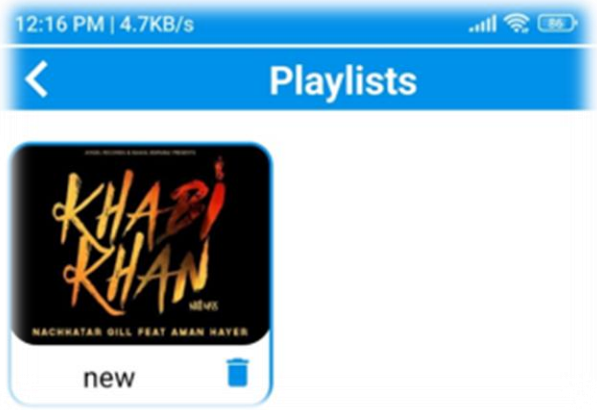
4.2.4 Feature 4: Different option in Ridhim Application

Like Forgot Password, Playlists, Favourite songs etc are there. So, let us discuss all the option one by one

1. Forgot Password: In this we are able to recover the password and save it in database.

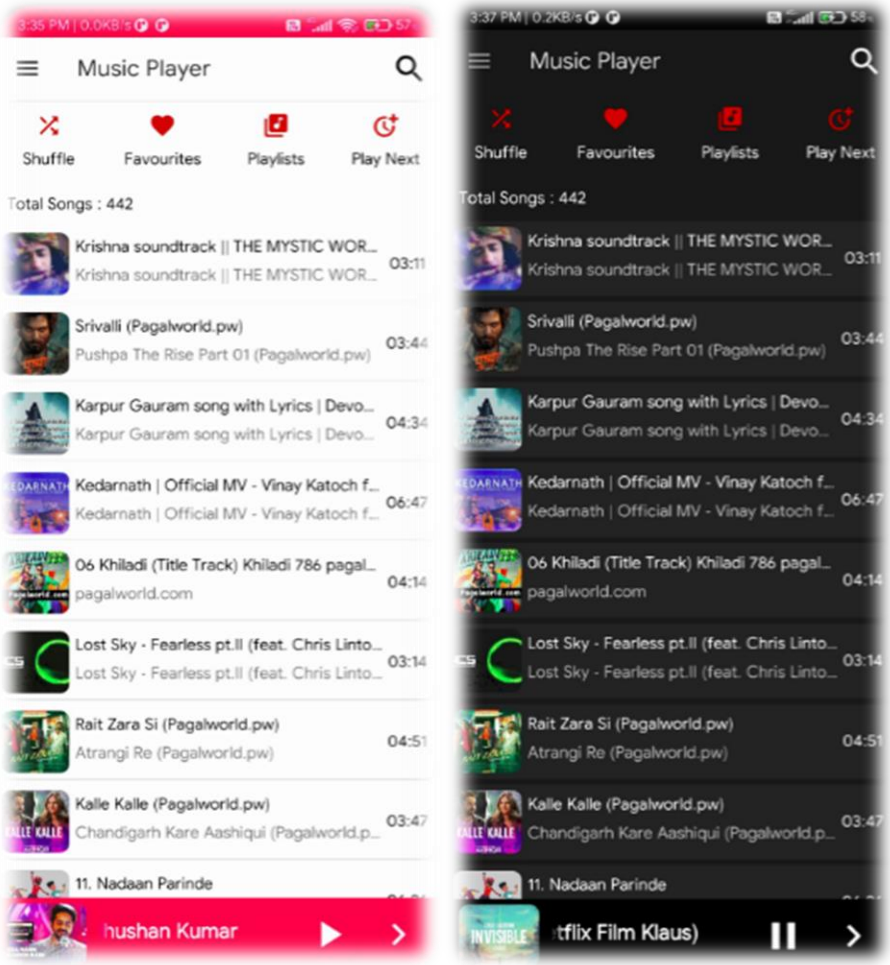


2. Playlist: In this we are able to create our playlist for non stop music listening.



3. Favourite Songs: In this we are able to add our favourite songs to listen them again.

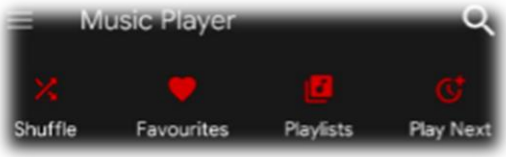
4. Dark Theme (Using Black Theme in Settings) : In this we are able to change the themes as required.

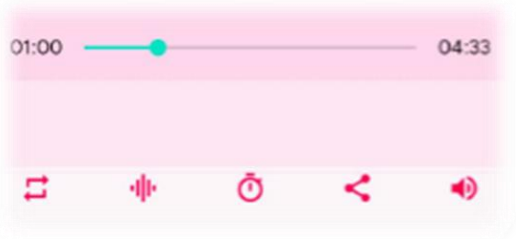


- Background Playing with Custom Notification: In this we are able to change the song in notifications only.

5. Various other features are:

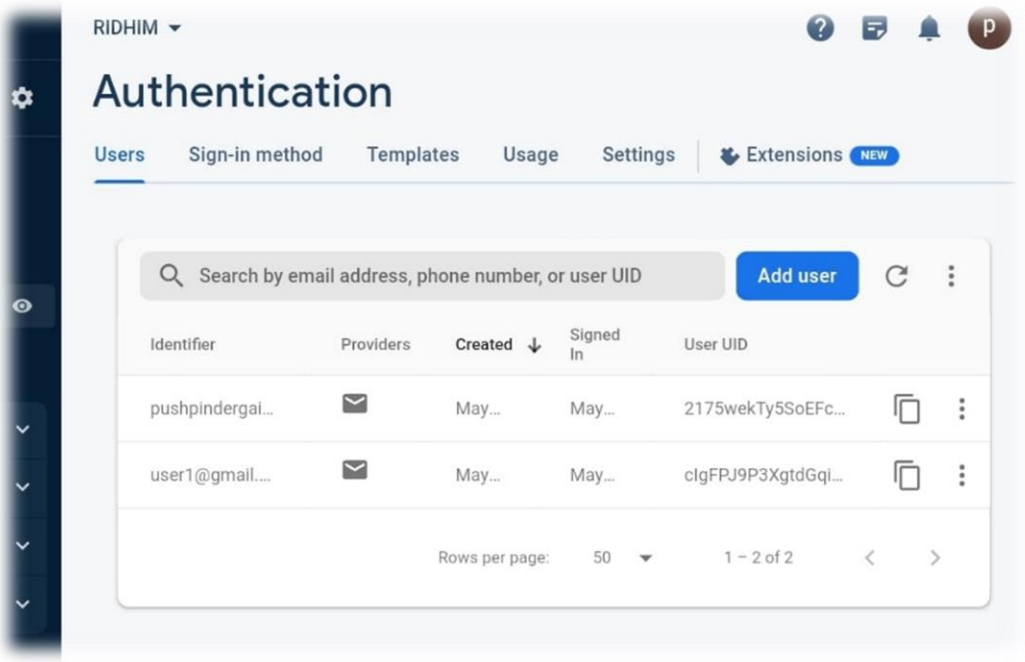
- Shuffle
- Playlists
- Play/Pause Audio Using EarPhones
- Play Next Feature (i.e. Now You Can Schedule Upcoming Songs)
- Custom Color Gradient According To Each Song Image
- Favourite Songs
- Create & Add Playlists
- Sleep Timer
- Audio Booster
- Built-in System Equalizer
- Audio Booster or Audio Amplifier
- Custom Themes
- Swipe to Refresh UI
- Decent UI with New Material Widgets

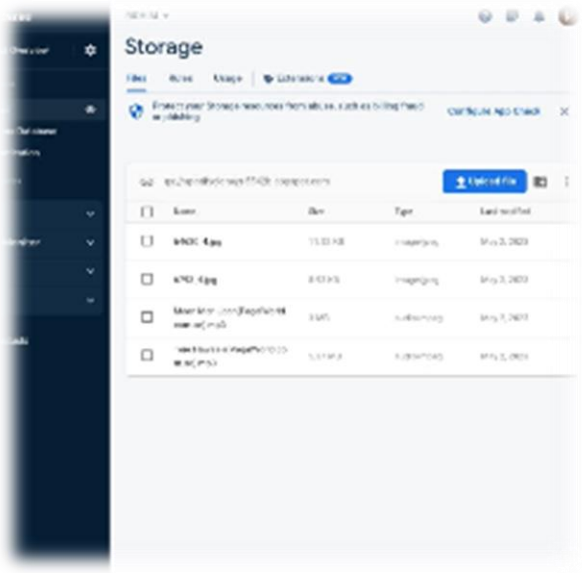




4.2.5 Feature 5: Data Storage

The app offers the features of user signup and login. After performing the desired operations and logging out from the app successfully, all the data, the user has created will not be lost and will persist in the database. The next time, the user logs in, he/she will be able to see the content created by them during the last login. We use the Firebase to access the data.

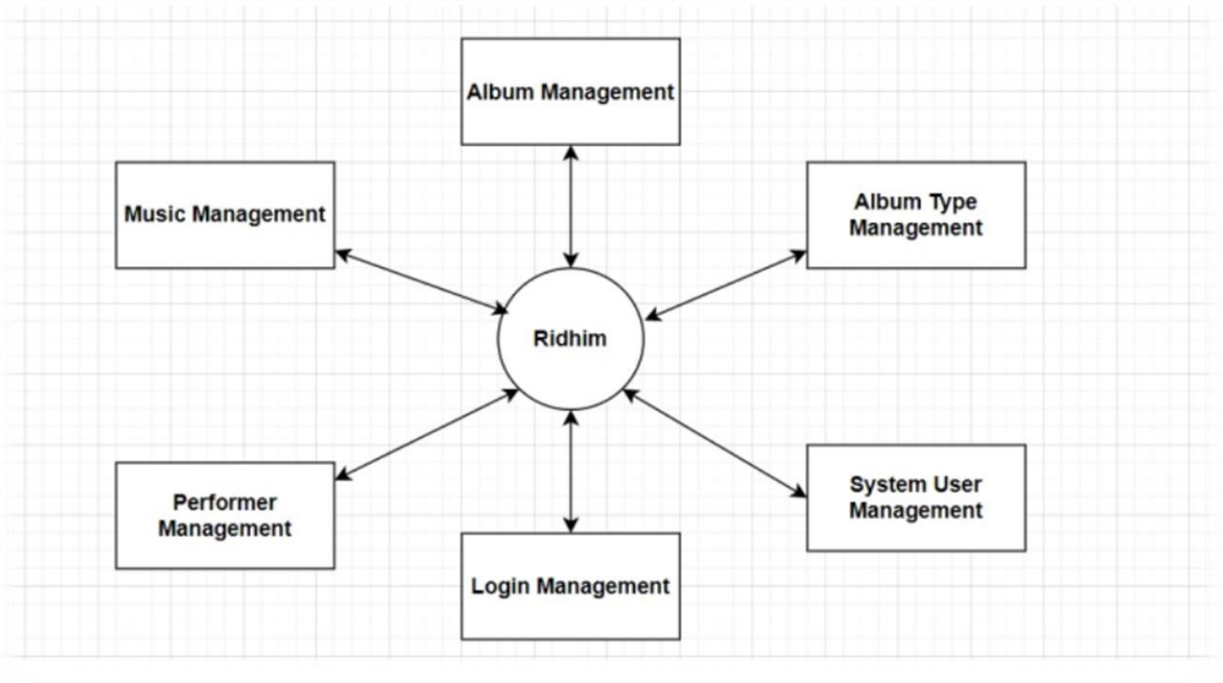




4.2 DESIGN FLOW

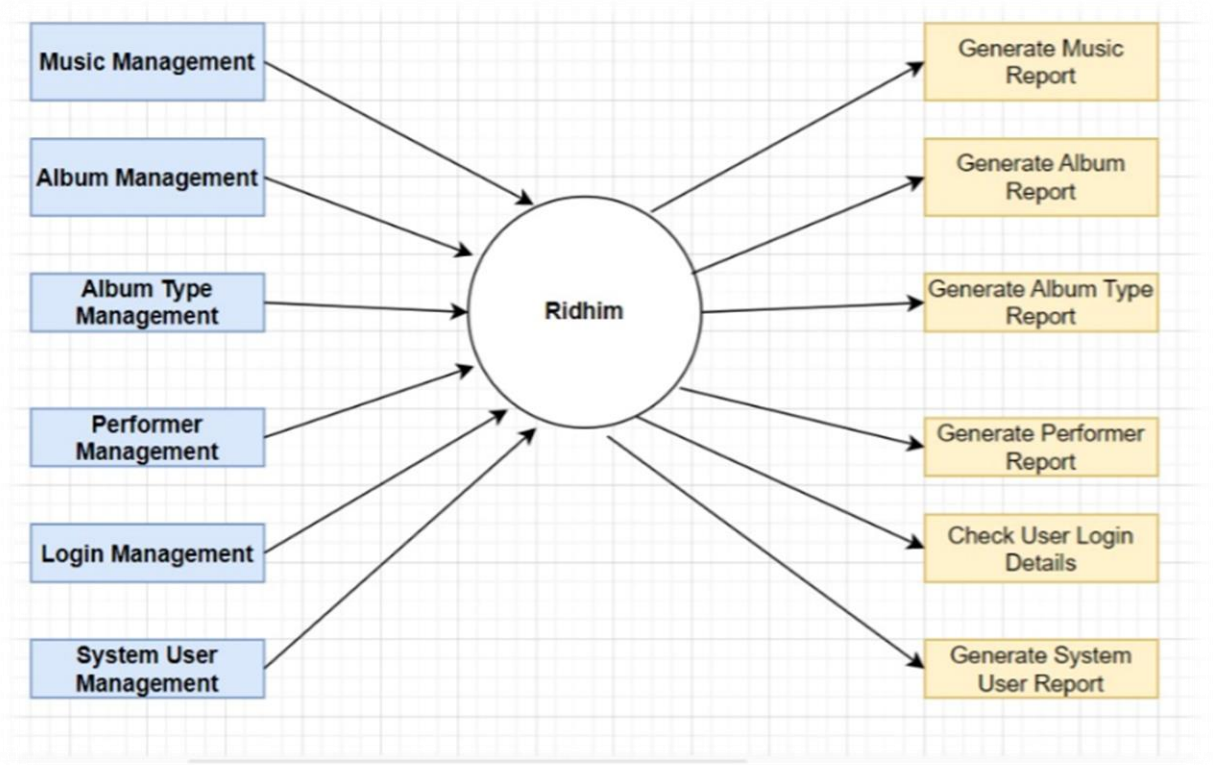
- **DFD Diagram**

(Level 0) :



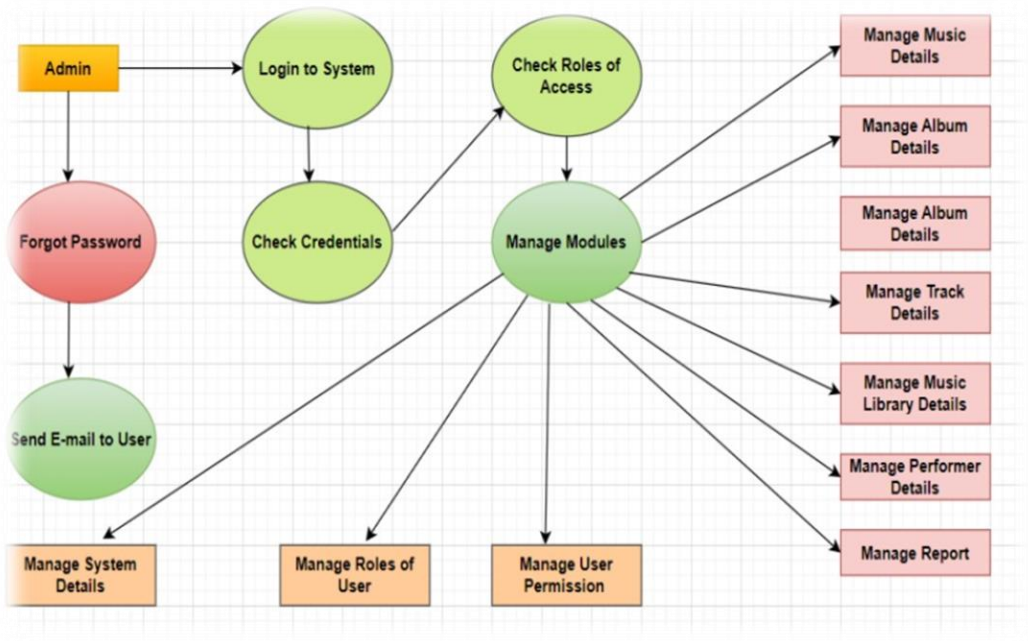
- **DFD Diagram**

(Level 1) :

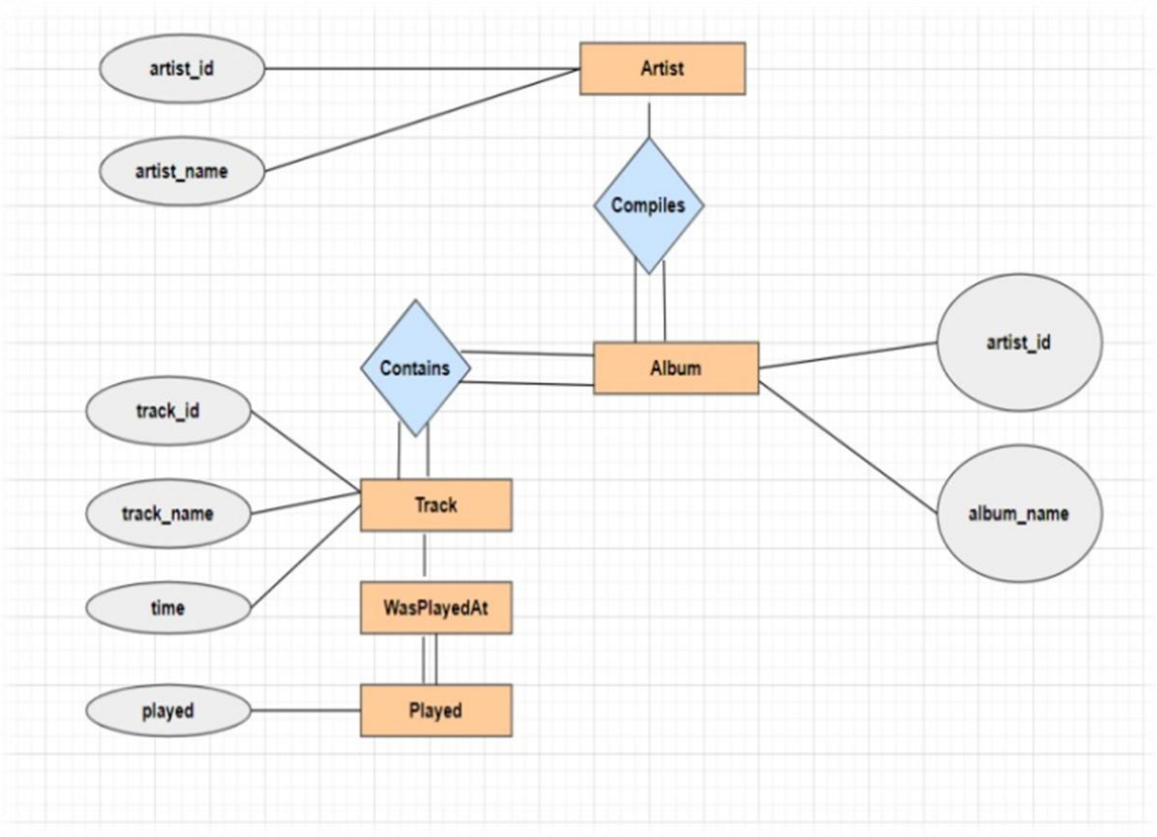


- **DFD Diagram**

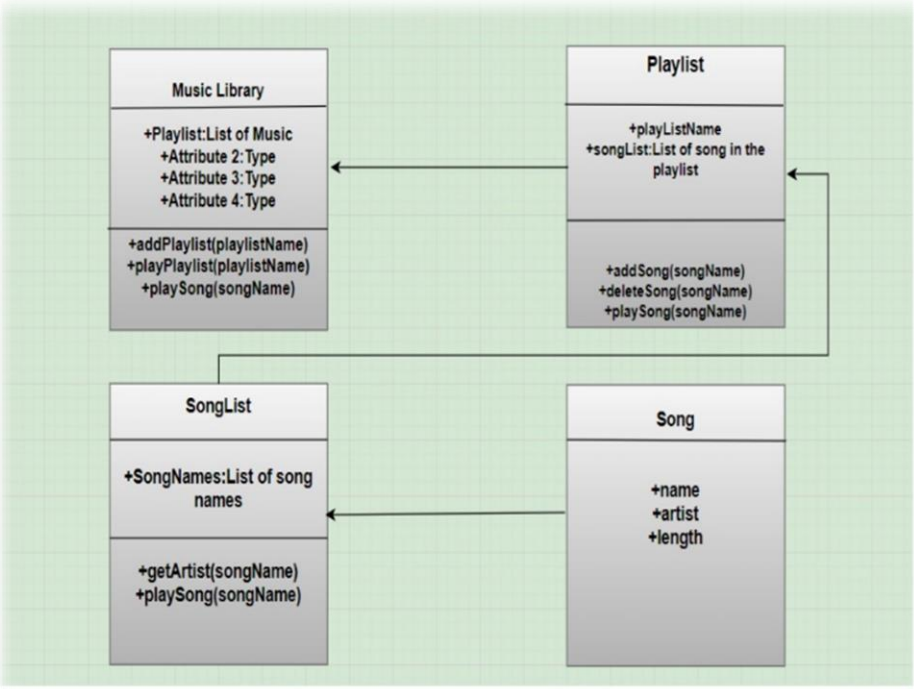
(Level 2) :



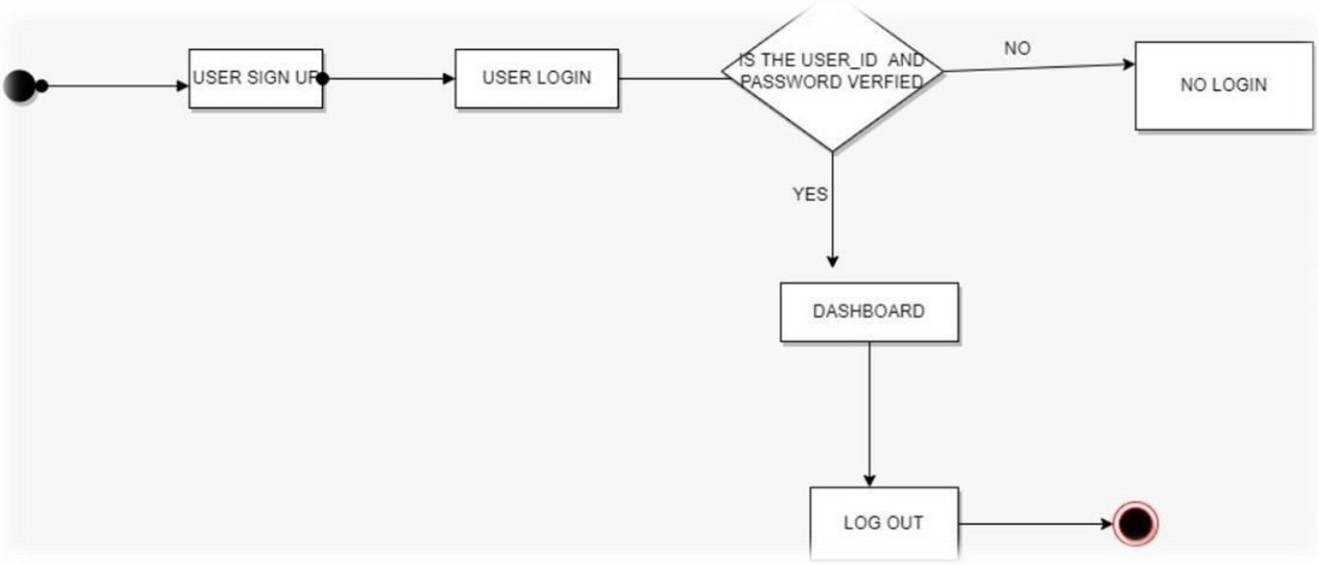
- **ER Diagram**



- **UML class Diagram**



- **Activity Diagram(Backend) :**



we examine that the project is feasible, We undertake project planning. The table below describe show we planned our project.

Table Project Plan

1	Task Name	Duration	Start	Finish
2	Planning	25 days	1/03/23	26/03/23
3	Design	20 days	27/03/23	16/04/23
4	Coding	15 days	18/04/23	09/05/23

Software Risk Management is a proactive approach for minimizing the uncertainty and potential loss associated with a project. Some categories of risk include product size, business impact, customer- related, process, technology, development environment, staffing (size and experience), schedule, and cost. Risk Management is a practice with processes, methods, and tools for managing risks in a project.

Risk identification is a systematic attempt to specify threats to the project plan. By identifying known and predictable risks, we can take a first step toward avoiding them when possible and controlling them when necessary. To perform the risk identification, we categorized the risk into different categories as:

1. Project Risk
2. Technical Risk
3. Business Risk
4. Known Risk
5. Predictable Risk
6. Unpredictable

Before designing any system, it is important that the nature of the business and the way it currently operates are clearly understood. The detailed examination provides the specific data required during designing in order to ensure that all the client's requirements are fulfilled. The investigation or the study conducted during the analysis phase is largely based on the feasibility study. Rather it would not be wrong to say that the analysis and feasibility phases overlap. High-level analysis begins during the feasibility study. Though analysis is represented as one phase of the system development life cycle (SDLC), this is not true. Analysis begins with system initialization and continues until its maintenance. Even after successful implementation of the system, analysis may play its role for periodic maintenance and up gradation of the system. One of the main causes of project failures is in adequate understanding, and one of the main causes of inadequate understanding of the requirements is the poor planning of system analysis.