

PURBANCHAL UNIVERSITY

Biratnagar Nepal



A Project report on
“MUSIC PLAYER”

In the partial fulfillment for the requirement of the 4th Semester Project-IV (BIT 256 CO) in the completion of **Bachelor of Information Technology (BIT)** degree at **KIST college of Information Technology**, under **Purbanchal University**.

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CERTIFICATE

This is to certify that the project work entitled “**MUSIC PLAYER**” is carried out by **HAWANA TAMANG (5413), JASTIN RAJ MAHARJAN (5435), ROHAN MISHRA (5423)**, bona fide students of **KIST COLLEGE OF INFORMATION AND TECHNOLOGY** in partial fulfillment for the award of **BACHELOR IN INFORMATION AND TECHNOLOGY** of the **PURBANCHAL UNIVERSITY, BIRATNAGAR NEPAL**, during the year **2023**. It is certified that all corrections indicated for internal assessment have been incorporated in the report submitted in the department library. The project report has been approved, as it satisfied the academic requirements in respect of the project work prescribed for the said degree.

The details of the students are as follows: -

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Course: - BIT (Bachelor's in Information Technology)

Semester: - 4th Semester

Subject: - Project-IV

Subject Code: - BIT 256 CO

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**KIST COLLEGE OF INFORMATION TECHNOLOGY
KAMALPOKHARI, KATHMANDU**



Examiner's Certification

The Project Report
On
"MUSIC PLAYER"

Developed by

**Hawana Tamang
Jastin Raj Maharjan
Rohan Mishra**

Is approved and is acceptable in qualify form.

Internal Examiner

Name: Roshan Shrestha
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External Examiner

Name:
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ACKNOWLEDGEMENT

It is with greatest satisfaction and euphoria that we are submitting our project report entitled “**MUSIC PLAYER**”. We have completed it as a part of the curriculum of **PURBANCHAL UNIVERSITY**.

We also take this opportunity to express a deep sense of gratefulness to our **BIT Coordinator Mr. Deepak Khadka** and **BIT Lecturer Mr. Roshan Shrestha** for their amiable support, valuable information and guidance which helped us in completing this task throughout its various stages. We are indebted to all members of **KIST College**, for the valuable support and suggestion provided by them using their specific fields’ knowledge. We are grateful for their cooperation during the period of our project.

Finally, we would also like to express our gratefulness towards **Purbanchal University** for designing such a wonderful course structure. It will help us to get more knowledge in the field of Information Technology & help us to have a bright future in the field of technology.

We hope our university will accept this attempt as a successful project.

Last but not the least, our sincere thanks to our parents, teaching and non-teaching staffs of our college and my friends.

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ROHAN MISHRA (345502)

STUDENT'S DECLARATION

We hereby declare that the project report entitled “**MUSIC PLAYER**” is a result of our own work. If we are found guilty of copying any other report or published information and showing as our original work, we understand that we shall be liable and punishable by **Purbanchal University**.

We further certify that this Project submitted in partial fulfillment of the requirement for the award of Bachelor in Information Technology (**BIT**) of the **Purbanchal University** is our original work and has not been submitted for award of any other degree or other similar title or prize.

S.N.	Name	Registration No.	Symbol No.
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TO WHOM IT MAY CONCERN

This is to certify that **Miss. Hawana Tamang, Mr. Jastin Raj Maharjan and Mr. Rohan Mishra of Bachelor in Information Technology (BIT)** has studied as per the curriculum of **BIT 4th Semester** and completed the project entitled “**MUSIC PLAYER**”. This project is the original work of **Miss. Hawana Tamang, Mr. Jastin Raj Maharjan and Mr. Rohan Mishra** and was carried out under the supervision of **Mr. Roshan Shrestha** as per the guidelines provided by **Purbanchal University** and certified as per the student’s declaration that project “**Music Player**” has not been presented anywhere as a part of any other academic work.

The detail of the student is as follows:

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Rohan Mishra
Semester : 4th
Subject Code : BIT 256 CO
Project Title : **Music Player**

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ABSTRACT

The purpose of the "**Music Player**" project is to revolutionize the way we engage with and enjoy music by leveraging computerized equipment and comprehensive software solutions. This system aims to provide an error-free, secure, reliable, and swift music management experience, liberating users from the hassles of manual organization and record-keeping. The project's software is readily available and user-friendly.

The **Music Player** system offers a seamless and immersive music playback experience, allowing users to focus on their enjoyment without being burdened by tedious administrative tasks. It enhances resource utilization within the music library, eliminating redundant entries and irrelevant information. Users can effortlessly store, access, and manipulate their music collections, ensuring that every note and track is readily accessible.

In essence, the project's objective is to automate the existing manual music management systems, empowering users to achieve optimal performance and deliver exceptional services to music enthusiasts.

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Chapter 1

Introduction

1.1 Introduction

The **Music Player** has been developed to address the challenges inherent in manual music playback. This software aims to eliminate, and in some cases, reduce the inconveniences associated with the traditional methods of playing music. Moreover, this player is designed to provide users with a seamless and efficient music listening experience.

The application has been streamlined to minimize errors during data entry, and it offers error messages for invalid inputs. No prior formal knowledge is required for users to operate this player, making it exceptionally user-friendly.

The Music Player, as described above, offers a path to error-free, secure, reliable, and rapid music management. It enables users to focus on enjoying their music rather than worrying about the intricacies of playback and organization. This, in turn, enhances the utilization of music resources.

Whether you have an extensive music library or a small collection, managing music information, including titles, artists, playlists, and playback history, can be challenging. Every music player caters to different needs, and we have designed our Music Player to adapt to your unique requirements. It is designed to assist in organizing your music strategically and ensures that you have access to the right information and details to meet your musical goals. For those music enthusiasts always on the move, our player includes remote access features, allowing you to manage your music library anytime, anywhere. Ultimately, this player empowers you to better manage your music resources.

1.2 Objectives

- The platform aims to offer a user-friendly search feature based on song ID for easy and efficient song retrieval.
- It is dedicated to maintaining detailed records of music tracks and their associated information for a comprehensive music library.
- The primary goal is to enhance the efficiency of managing music library records, ensuring accurate and up-to-date data.
- The platform strives to provide users with comprehensive song information to enhance their overall listening experience.
- It seamlessly logs daily music interactions, ensuring accessibility and clarity in tracking user preferences and history.
- The platform is committed to maintaining well-organized records of songs, artists, albums, and playlists for ease of navigation.
- It aims to streamline the addition and removal of songs from the library, improving resource allocation and user satisfaction.
- The platform's data and analytics capabilities support informed decision-making regarding music selection and playback, optimizing the user experience.

1.3 Problem Statement

In an era defined by digitalization and an ever – expanding online music landscape, there exists a pressing need for a comprehensive and user – centric music system that seamlessly integrates various music sources, offers personalized recommendations, and ensures accessibility for all users. The current state of music consumption presents several challenges and shortcomings:

- **Fragmentation of Music Sources:** Users often find themselves juggling between multiple platforms, such as local music libraries, streaming services, and radio stations, leading to a fragmented and inconvenient music listening experience.
- **Personalization Gaps:** While recommendation algorithms are prevalent in music streaming platforms, they may not always provide accurate and relevant music suggestions, leading to user dissatisfaction and a lack of music discovery.
- **Accessibility Barriers:** Many music systems lack accessibility features, making it difficult for individuals with disabilities to fully enjoy and interact with the music content.
- **User Engagement:** Ensuring consistent user engagement and retention is a challenge, especially when competing with the vast array of entertainment options available online.
- **Privacy and Data Security:** With the collection of user data and preferences, concerns about data privacy and security are paramount, requiring robust measures to protect user information.
- **Cross-Platform Compatibility:** Users desire a music system that works seamlessly across various devices, operating systems, and screen sizes.

1.4 Features

- **Login System:** Provides user authentication to ensure only authorized users can access the system.
- **Online Server-Based Music Player:** User can access and play music from a central online server. Music files are stored remotely, reducing the need for local storage.
- **Local Music Player:** Users can also play music stored locally on their devices. Supports playback of audio files stored on the user's computer or device.
- **Radio Stations (Live Streamer):** This features access to different radio stations for live streaming. Users can listen to real-time broadcasts from these stations.
- **Playlists:** Allows users to create and manage playlists for online music system. Users can add, remove, and reorder songs within playlists. It also supports the creation of custom playlists.
- **Search:** Enables user to search for specific songs, albums, or artists. Provides a user-friendly interface for easy navigation through music libraries.
- **Playback Controls:** Offers standard music playback controls such as play, pause, next, previous etc.
- **Cross-Platform Compatibility:** Accessible on various devices and operating systems, such as windows, macOS, Android.

1.5 Scope

Scope of project in building a computerized music player system was to include features that cater to the needs of music enthusiasts. The system allows users to organize, play, and enjoy their music collections seamlessly. It provides a user-friendly interface for managing playlists and searching for songs.

A music player encompasses a range of functions and features designed to enhance the experience of listening to audio files. At its core, a music player is tasked with playing audio files in various formats while providing a user-friendly interface for navigation. Users can create and manage playlists and browse their music libraries effortlessly. Cross-platform compatibility ensures accessibility across different devices, and offline playback options cater to those on the go. Additionally, integration with online streaming services broadens the scope of music players, allowing users to access vast music libraries. Synchronization features keep music collections consistent across devices, while customization options, such as themes and playback modes, allow for a tailored user experience. Supporting various audio file types, displaying lyrics and metadata, and incorporating podcast and radio streaming features further enrich the versatility of music players. Some even offer playback history tracking and statistics to enhance the overall listening experience. Thus, the scope of a music player extends beyond mere audio playback to encompass a wide array of functionalities catering to diverse user preferences and needs.

1.6 Advantages

- The platform is incredibly easy to use, making it accessible to users of all technological backgrounds.
- It offers a high-quality sound experience, ensuring that users can enjoy their favorite music with excellent audio quality.
- The platform maintains an organized music library, simplifying the process of discovering new tracks and managing personal collections.
- It provides valuable data on music preferences and trends, aiding in making informed business decisions.
- Users can create customizable playlists, allowing them to curate their own musical journeys.
- The platform is compatible across various devices and operating systems, ensuring users can access their music wherever and whenever they want.
- User-friendly interfaces make navigation and exploration of the platform a seamless and enjoyable experience.

1.7 Team Structure and Roles

The member assigned with these particular responsibilities.

Members	Study &Analysis	Designing	Coding	Debugging	Documentation
Hawana Tamang	Hawana Tamang	Hawana Tamang	Hawana Tamang	Hawana Tamang	Hawana Tamang
Jastin Raj Maharjan	Jastin Raj Maharjan	Jastin Raj Maharjan	Jastin Raj Maharjan	Jastin Raj Maharjan	Jastin Raj Maharjan
Rohan Mishra	Rohan Mishra	Rohan Mishra	Rohan Mishra	Rohan Mishra	Rohan Mishra

1.8 Gantt Chart

S. N	Task	Week1	Week2	Week3	Week4	Week5
1	Planning					
2	Analysis					
3	Designing					
4	Coding					
5	Testing					
6	Documentation					

Total time: 5 weeks (1.15months)

Chapter-2

System Design

2.1 Algorithm

Step 1: Start

Step 2: Select Login or Register

Step 3: If Register

Enter full name, username, email, password, re-confirm password then go to step 4

Else go to step 4

Step 4: If login

Enter username, password and select login.

Step 5: If server based online music player, then go to step 5.1.

Step 5.1.: Select Music label in the top, it shows list of online songs.

Step 5.2.: Select a song to be played.

Step 5.3.: Select pause button to pause the song.

Step 5.3.: Select next button to change the song.

Step 5.4.: Select previous button to listen the last played song.

Else go to step 6

Step 6: If local offline based music player, then go to step 6.1.

Step 6.1.: Select local label from the left panel

Step 6.2.: Select add button to add the songs to the table.

Step 6.3.: Select song from the table to listen

Step 6.4.: Select pause button to pause the song.

Step 6.5.: Select next button to change the song.

Step 6.6.: Select previous button to listen the last played song.

Else go to step 7

Step 7: If radio stream player, then go to step 7.1.

Step 7.1.: Select radio label from the left panel.

Step 7.2.: Select play to listen the live stream.

Step 7.3.: Select stop to pause the live stream.

Step 7.4.: Select random radio stations to listen the live stream.

Step 7.4.1.: If BBC radio station, then go to Step 7.4.2.

Step 7.4.2.: Select BBC radio station from the panel

Step 7.4.3.: Select play to listen the live BBC news.

Step 7.4.4.: Select stop to stop the live stream.

Else go to Step 7.5.

Step 7.5.: Select random radio station to listen the live stream

Step 7.5.1.: If Hits Fm 91.2, then go to step 7.5.2.

Step 7.5.2.: Select Hits Fm 91.2 from the panel.

Step 7.5.3.: Select play to listen the live streaming Hits Fm.

Step 7.5.4.: Select stop to stop the live stream.

Else go to Step 7.6.

Step 7.6.: Select random radio station to listen the live stream.

Step 7.6.1.: If Radio Kantipur station, then go to step 7.6.2.

Step 7.6.2.: Select Radio Kantipur from the panel.

Step 7.6.3.: Select play to listen the live stream.

Step 7.6.4.: Select stop to stop the live stream.

Else go to Step 7.7.

Step 7.7.: Select random radio station to listen the live stream.

Step 7.7.1.: If Mirchi Radio station, then go to step 7.7.2

Step 7.7.2.: Select Mirchi Radio from the panel.

Step 7.7.3.: Select play to listen the live stream.

Step 7.7.4.: Select stop to stop the live stream.

Else go to Step 8.

Step 8.: Select create playlist to create a new playlist.

Step 9.: Select Genres from the left panel to show the list of songs with their respective genres

Step 10: Select Albums from the left panel to show the songs on the singer albums.

Step 11: Select Artists from the left panel to show the artists of the song.

Step 12: Select search bar to search the specific song present in the server.

Step 13: If want to explore Genre panel, then go to step 13.1

Step 13.1.: Select Dance Beats to show the list of songs with genre Dance Beats

Step 13.2.: Select Electro Pop to show the list of songs with genre Electro pop.

Step 13.3.: Select Alternative Indie to show the list of songs with genre Alternative Indie.

Step 13.4.: Select Hip Hop to show the list of songs with genre Hip Hop.

Step 13.5.: Select Classical Period to show the list of songs with genre Classical Period.

Step 13.6.: Select Hip Hop Rap to show the list of songs with genre Hip Hop Rap.

Else go to Step 14.

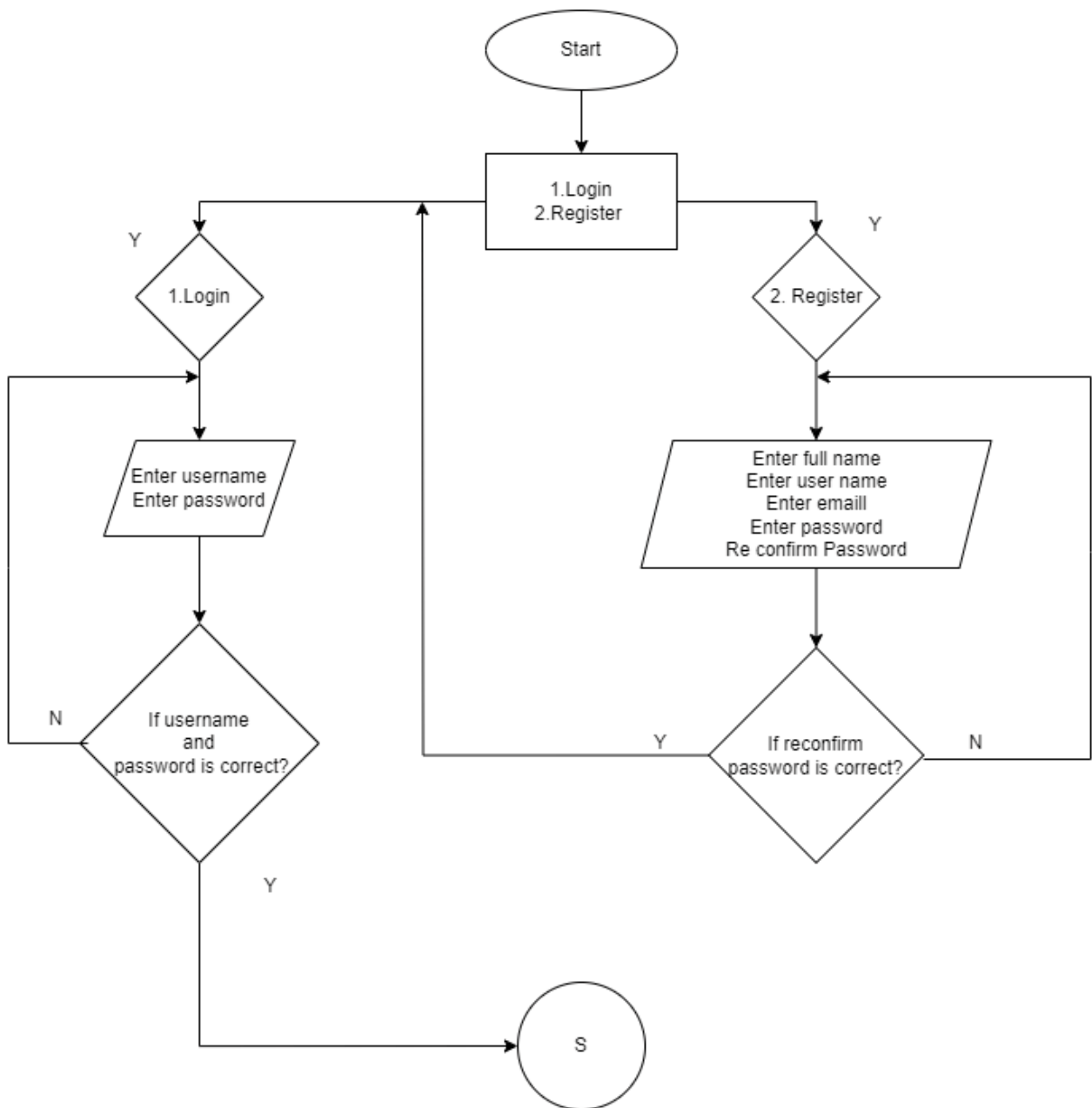
Step 14: Select exit button

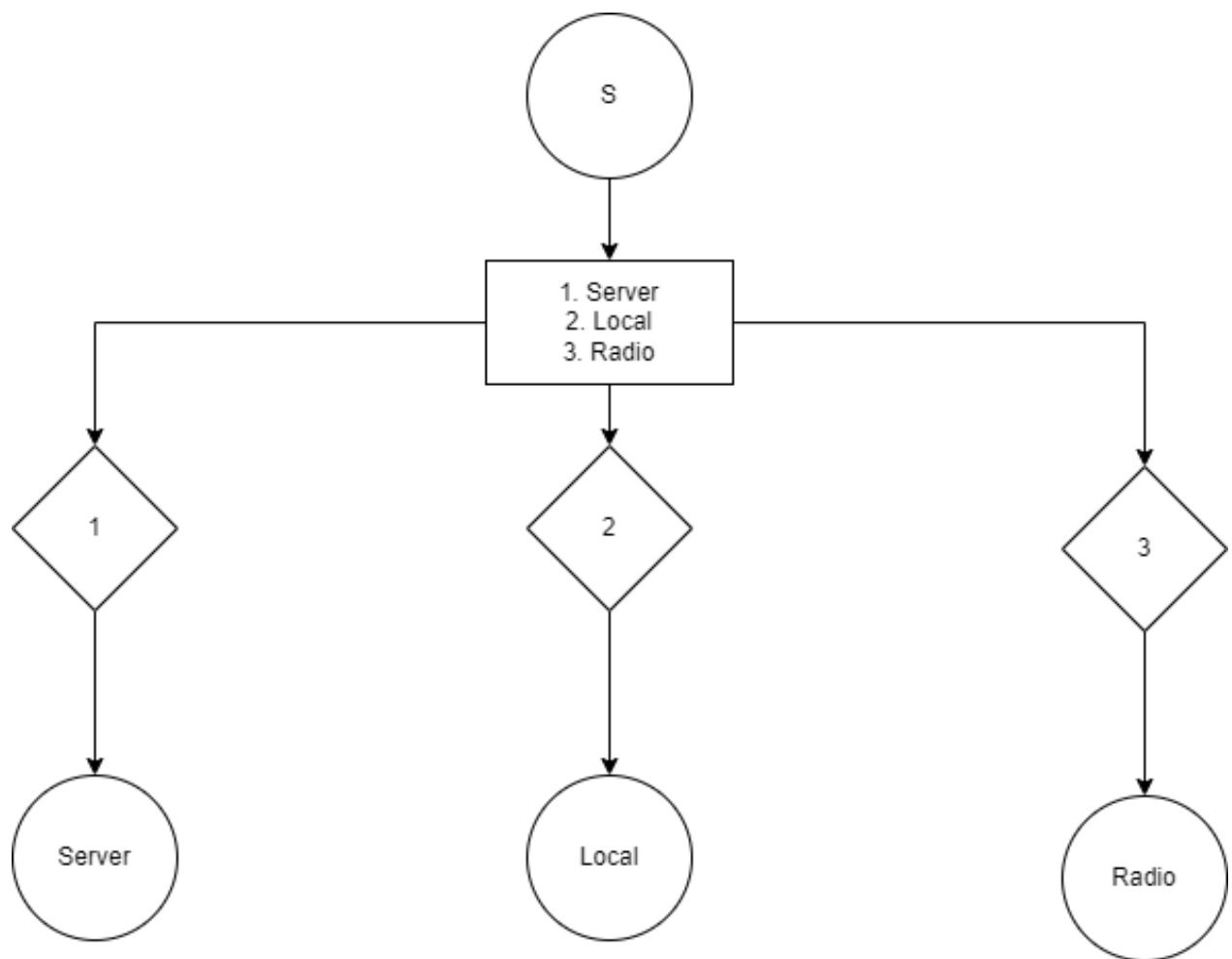
If logout then go to step 15

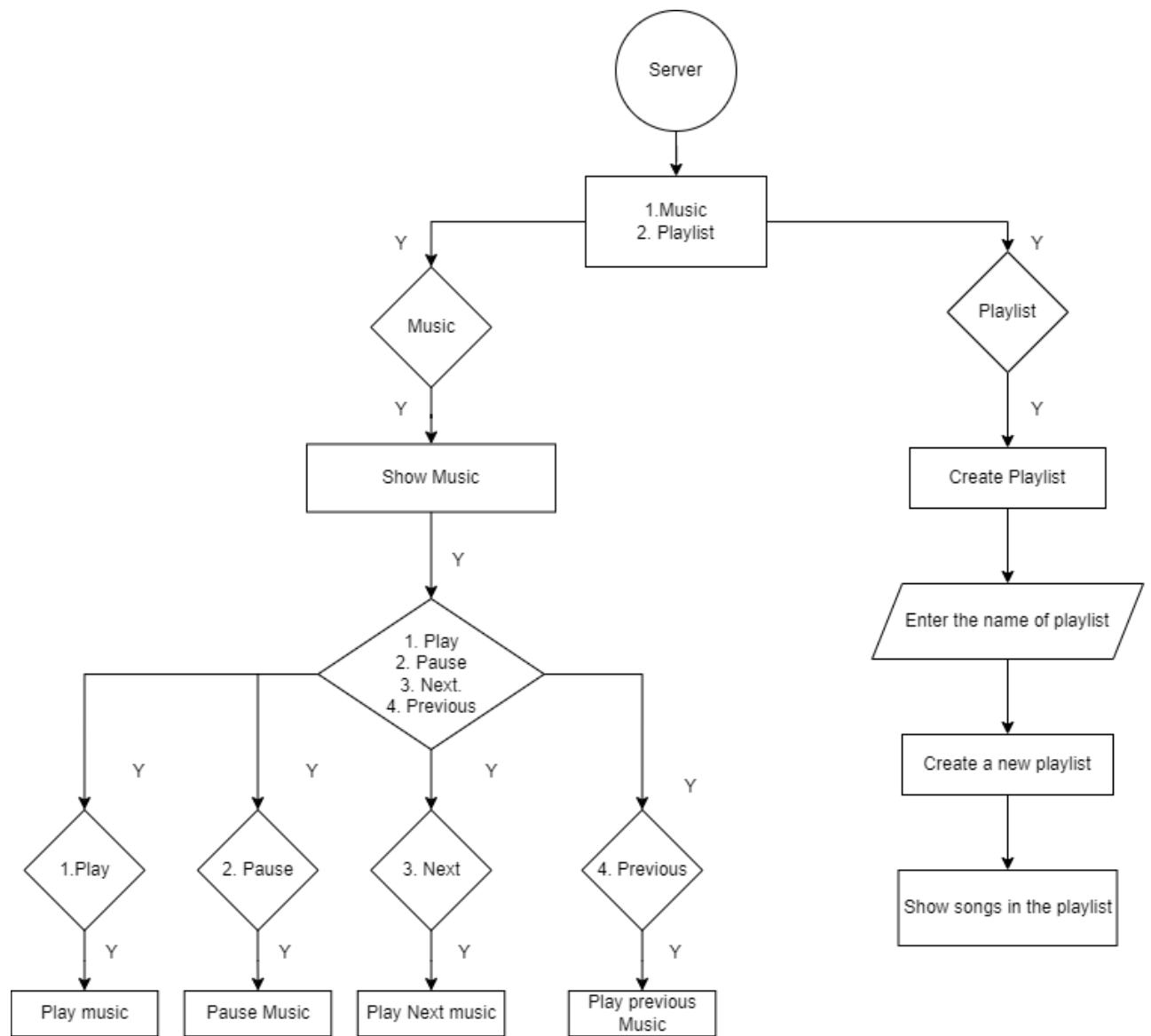
Else go to step 1

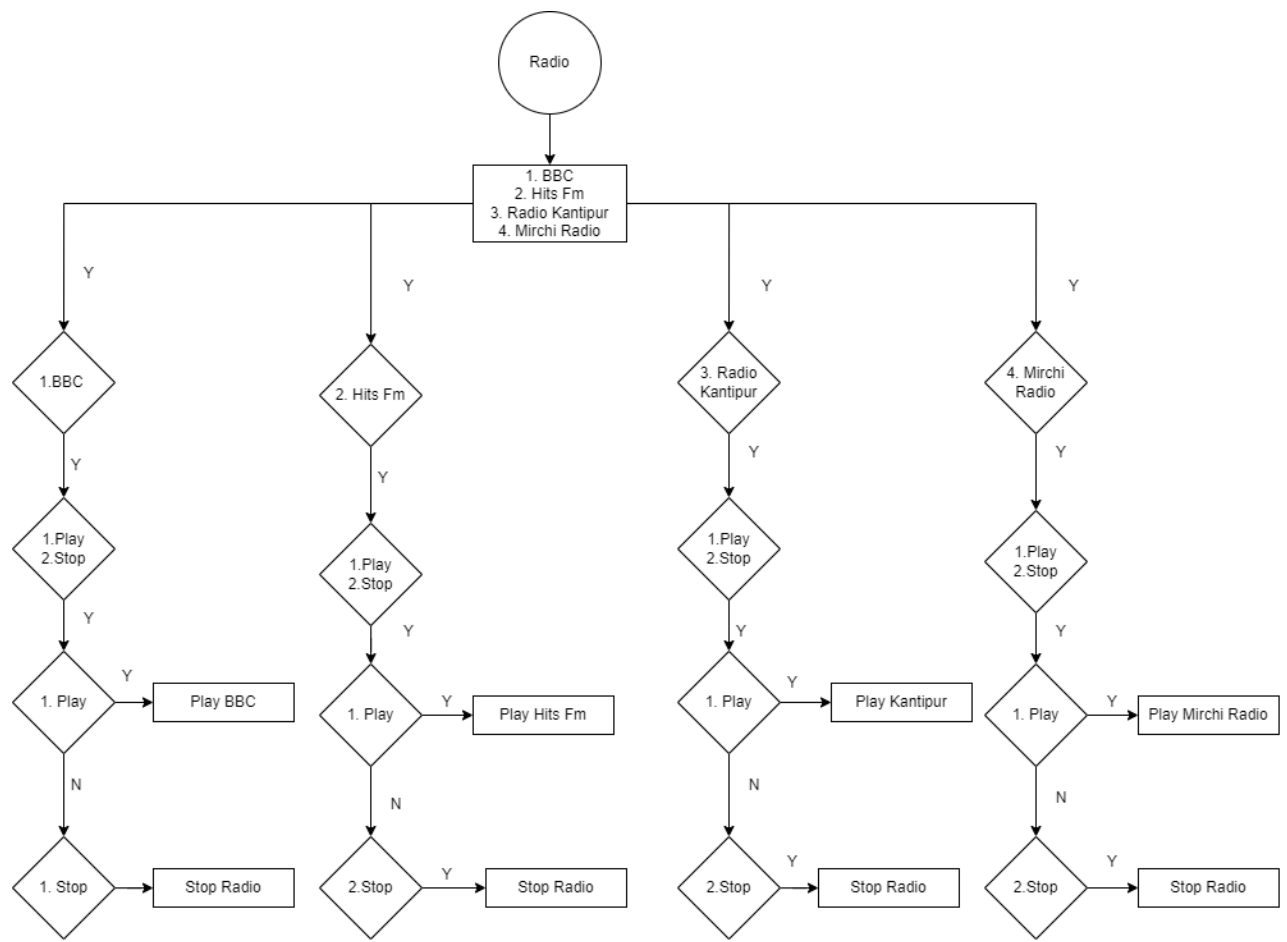
Step 15: Stop

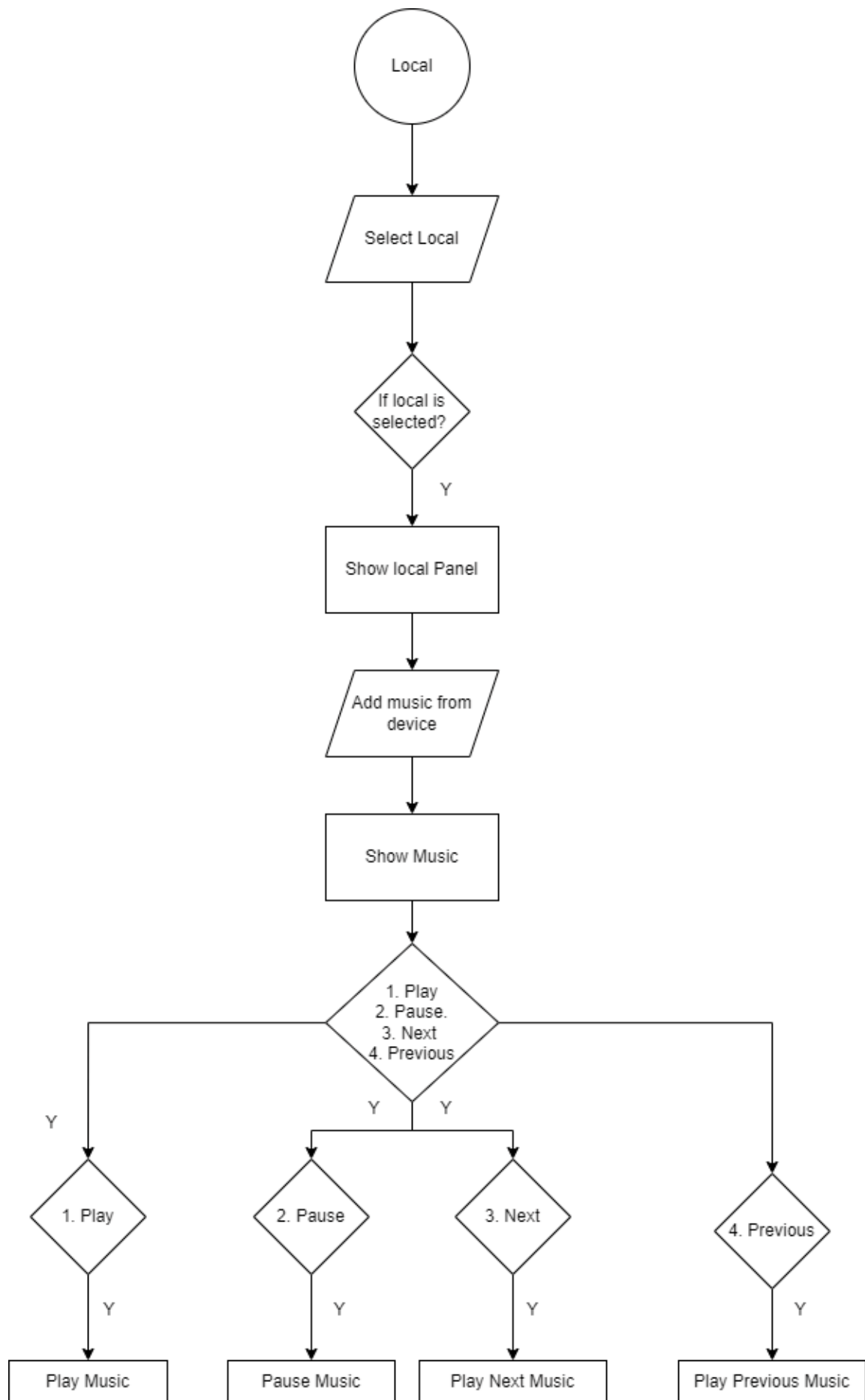
2.2 Flowchart

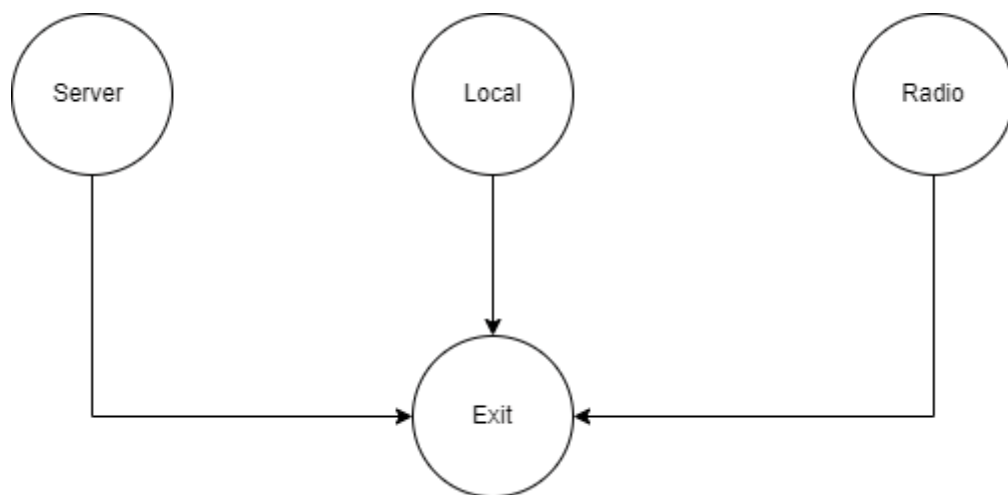
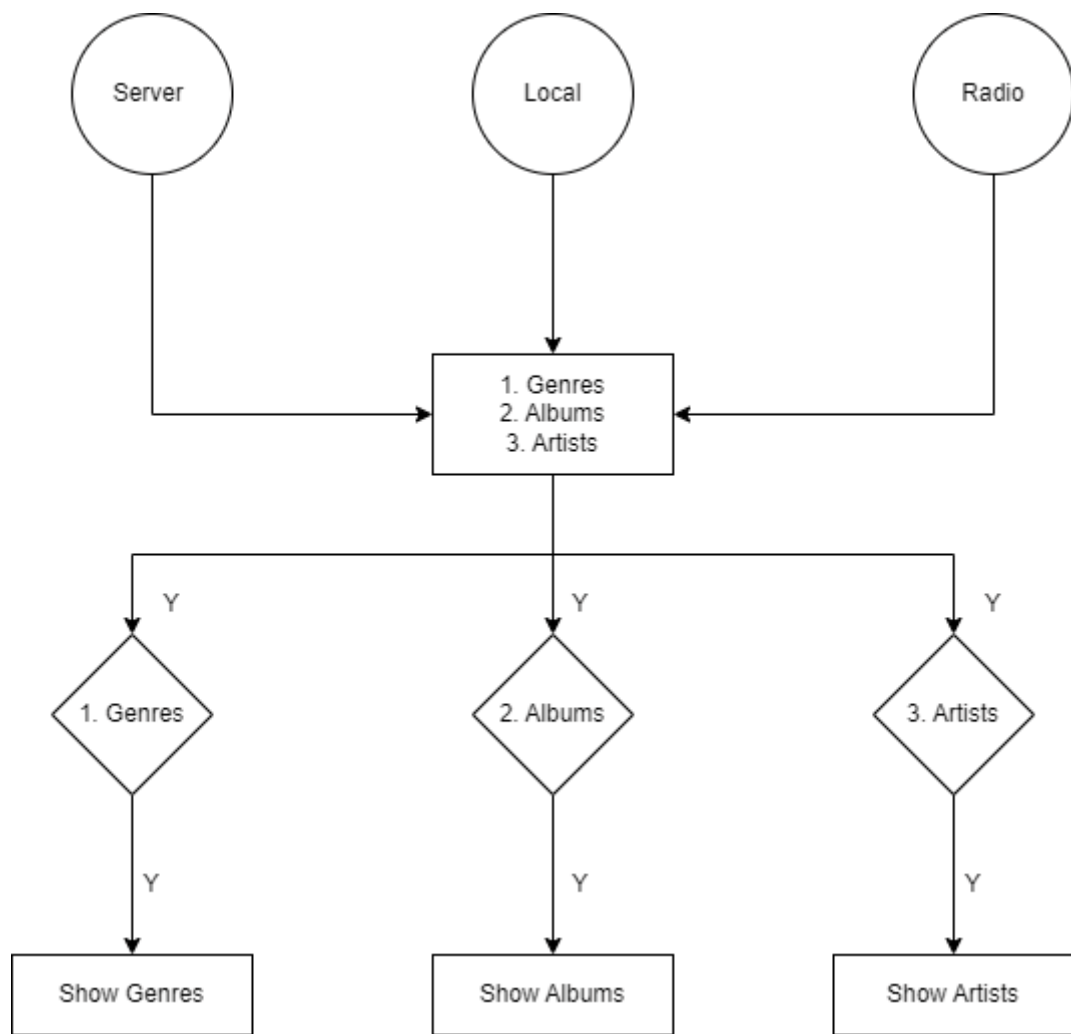


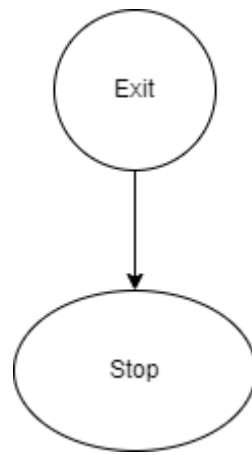












Chapter 3

Requirement Analysis and Implementation

3.1 System Requirements

Following hardware and software requirement should be met for flawless running of the system:

HARDWARE REQUIREMENTS:

MEMORY (RAM): 6.00 GB

SYSTEM TYPE: 64-bit OS, x64-based processor

STORAGE CAPACITY: 30 GB HDD

CPU: 2.30GHz

SOFTWARE REQUIREMENTS:

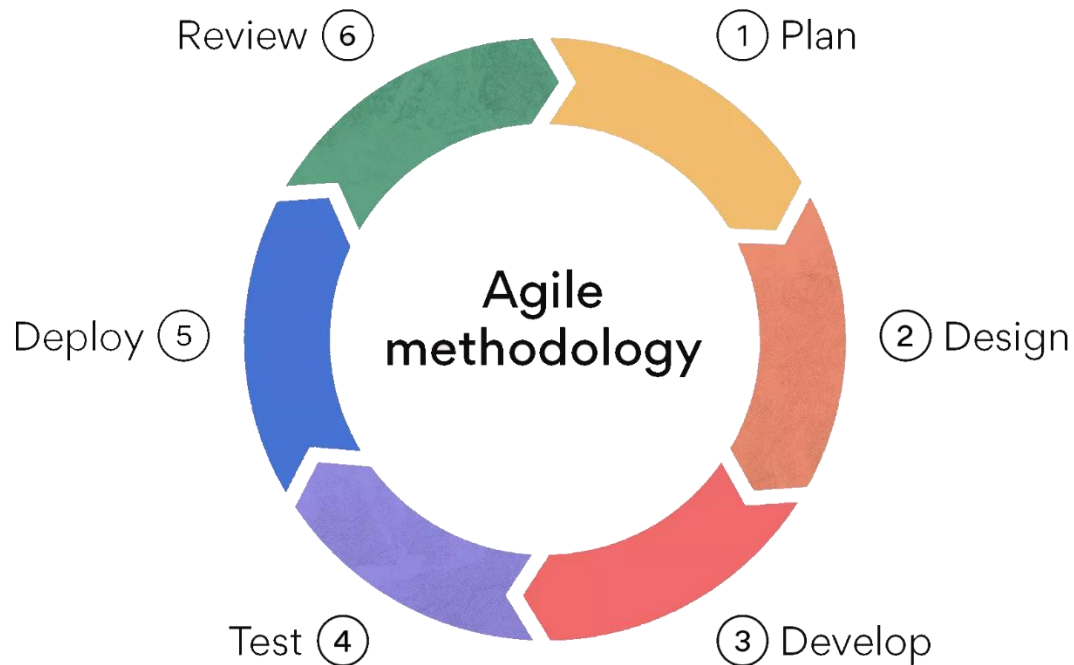
OPERATING SYSTEM: Windows 7 or Higher

Development Tools: Java 19, IntelliJ IDEA

Database: MySQL

3.2 System Methodology

AGILE METHODOLOGY



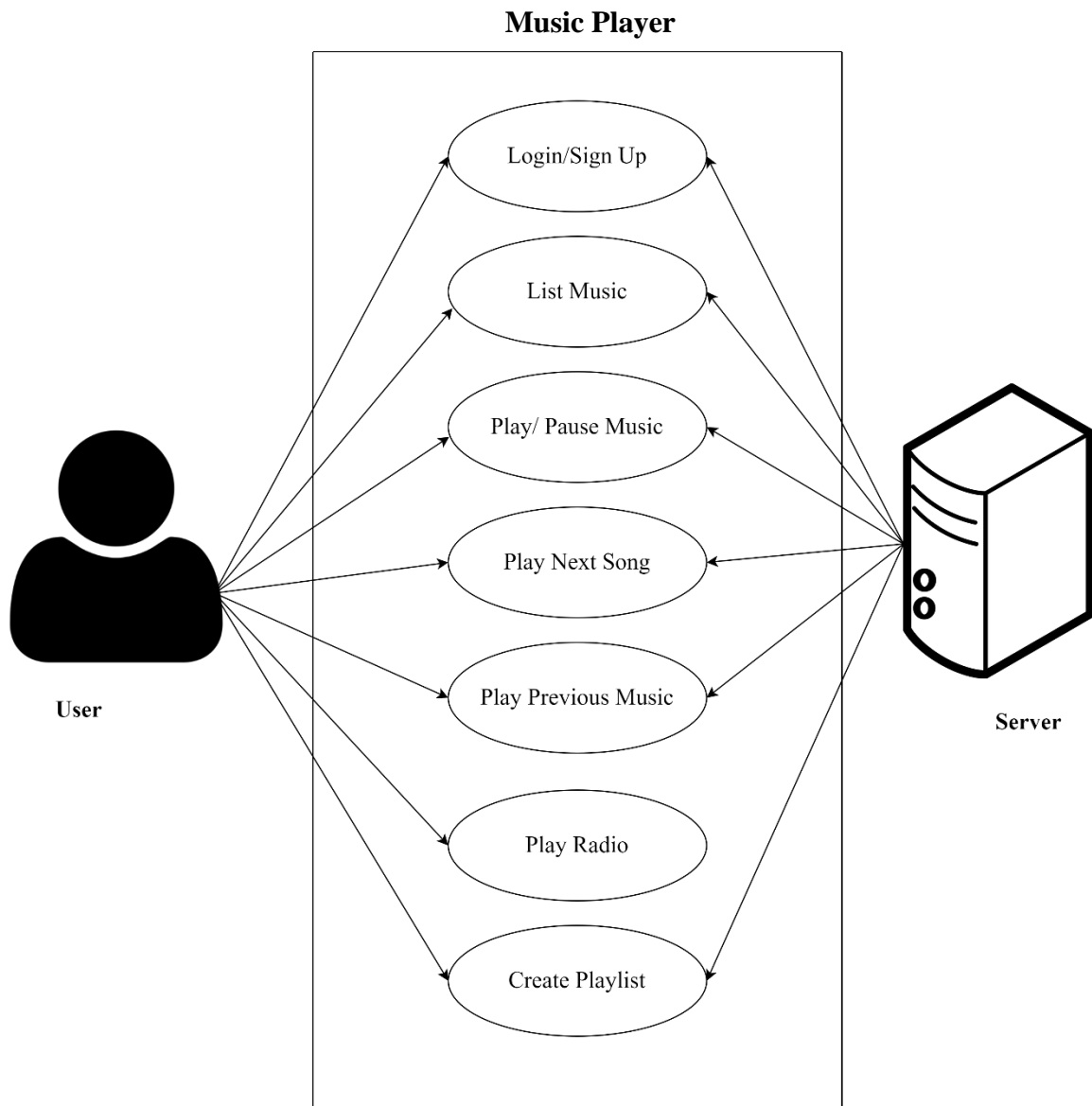
- 1) **Plan:** In the planning phase, we defined our product vision, established a prioritized feature list in the product backlog, and set Sprint 1's goal to create basic player controls and a user-friendly interface, laying the foundation for our Agile development process.
- 2) **Design:** In the design phase, we focused on UI/UX design, software architecture design, and database schema, ensuring a strong foundation for a user-friendly, feature-rich music player.
- 3) **Develop:** The development phase included core audio playback implementation, user interface development, playlist management features, and, where applicable, the creation of a user account system with registration and login functionality.
- 4) **Test:** The testing phase encompassed functional testing for feature reliability, usability testing for user feedback-driven improvements, and performance testing to ensure seamless music library management.

- 5) **Deploy:** The deployment phase involved preparing and deploying the music player, configuring server and database settings, and releasing it for user access, marking a pivotal moment in our Agile development journey.
- 6) **Review:** The review phase involved collecting user feedback, addressing critical issues, and leveraging insights to prioritize and plan future iterations for continuous improvement and expansion of the music player.

3.3 Requirement Analysis

FUNCTIONAL REQUIREMENT

In software and system engineering, a functional requirement defines a function of a system or its component, where a function is described as a specification of behavior between input and outputs.



Use Case Diagram

3.4 System Design

System design is the process of designing the architecture, components, and interfaces for a system so that it meets the end-user requirements. A good system design is to organize the program modules in such a way that are easy to develop and change. There are many strategies or techniques for performing system design.

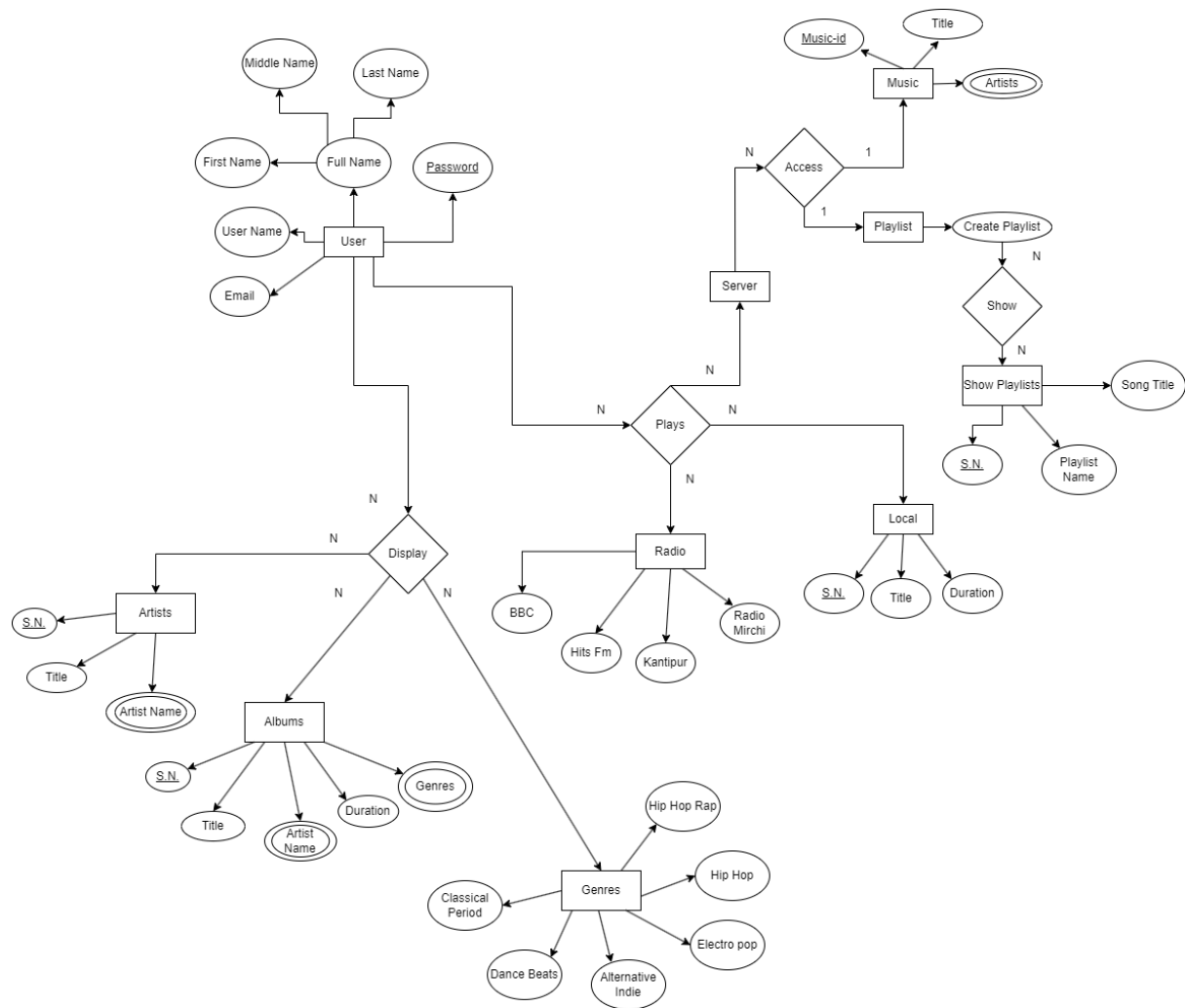
Importance:

- If any pre-existing code need to be understood, organized, and pieced together.
- It is common for the project team to have to write some code and produce original programs that support the application logic of the system.

There are many strategies or techniques for performing system design.

- **Bottom – up approach:** Bottom – up is an approach used in integration testing, which is a level of software testing where individual units are combined and tested as groups. Integration Testing is performed by software testers once unit testing is completed and before the inception of system testing
- **Advantages of Bottom - up approach:**
 - The bottom – up style allows managers to communicate goals and value through milestone planning, and team members are encouraged to develop personal to – do lists with the steps necessary to reach the milestones on their own.
 - A clear advantage of this approach is that it empowers team members to think more creatively.

3.5 Entity Relation Diagram



3.6 Class Module

S.N.	Class	Class Description
1.	Main	This class is to run the main program.
2.	Design	This class is for the main design of the program and consists of almost every feature.
3.	Local	This class is for the offline mode of the music player.
4.	Login	This class is for security purpose so that the unregistered user cannot manipulate the program
6.	Login Handler	This class is for user authentication and session initiation.
7.	Register	This class is for the new user registration in the system
8.	Register Handler	This class is for user registration and account creation.
9.	Logout	This class is for logging out the system.
10.	Logout Handler	This class is for user session termination and logouts.
11.	Music Handler	This class is for handling the server music.
12.	Client Handler	This class is for handling the clients.
13.	Server	This is the main server that holds the information and the music's.

Chapter-4

Conclusion and Future Scope

4.1 Conclusion

Our project represents a modest initiative aimed at meeting the demands of music player. We have incorporated user-friendly coding to develop a software package that promises to be a robust solution for fulfilling the requirements of the music player service. The software planning's primary goal is to establish a framework that allows the manager to make reasonable estimates within a constrained time frame at the project's outset, with periodic updates throughout its development. We have successfully crafted a computerized music player system, which can securely store and effortlessly retrieve music records. This system encompasses data entry capabilities for tracks and artists, in addition to facilitating seamless playlist creation and music playback. The interconnected components of the music library, user preferences, and playback controls ensure the system's accuracy and efficiency.

At the end it is concluded that we have made effort on following points

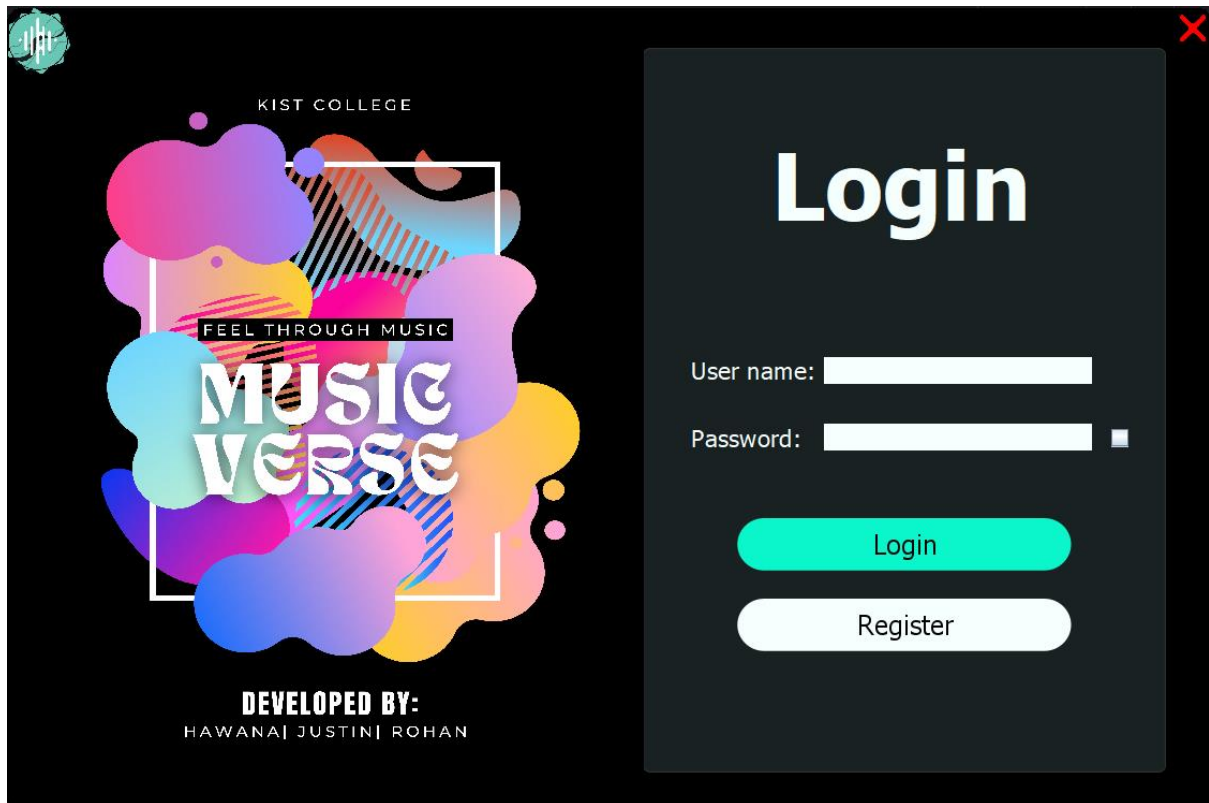
- We have provided a comprehensive description of the purpose, scope, and applicability of our music player software.
- We have clearly defined the problem that our project aims to address within the realm of music playback and management.
- Detailed requirement specifications for the music player system have been outlined, encompassing various actions and functionalities.
- We have meticulously documented the features and operations, including screen layouts, to ensure user-friendliness and functionality.
- The primary objective was to create a computerized music player system that offers seamless music playback and management capabilities.
- Our system excels in securely storing music files and retrieving them with ease whenever the need arises.
- Furthermore, we have established an interconnected framework for user music libraries, preferences, and system controls to maintain the accuracy and efficiency of the music player.

4.2 Future Scope

In the future, we're planning to make our music player even better by doing a few key things. First, we'll make the sound quality even nicer by using better technology. Then, we'll make it easier for you to create, change, and share playlists. You'll be able to share your favorite songs and playlists on social media too. And, to make it even easier to use, we're thinking about adding voice control so you can tell the music player what to do without touching it. These improvements will make our music player more enjoyable and user-friendly.

5. Appendices

5.1 Screenshots



Music Verse

KIST COLLEGE

FEEL THROUGH MUSIC

MUSIC VERSE

DEVELOPED BY:
HAWANA | JUSTIN | ROHAN

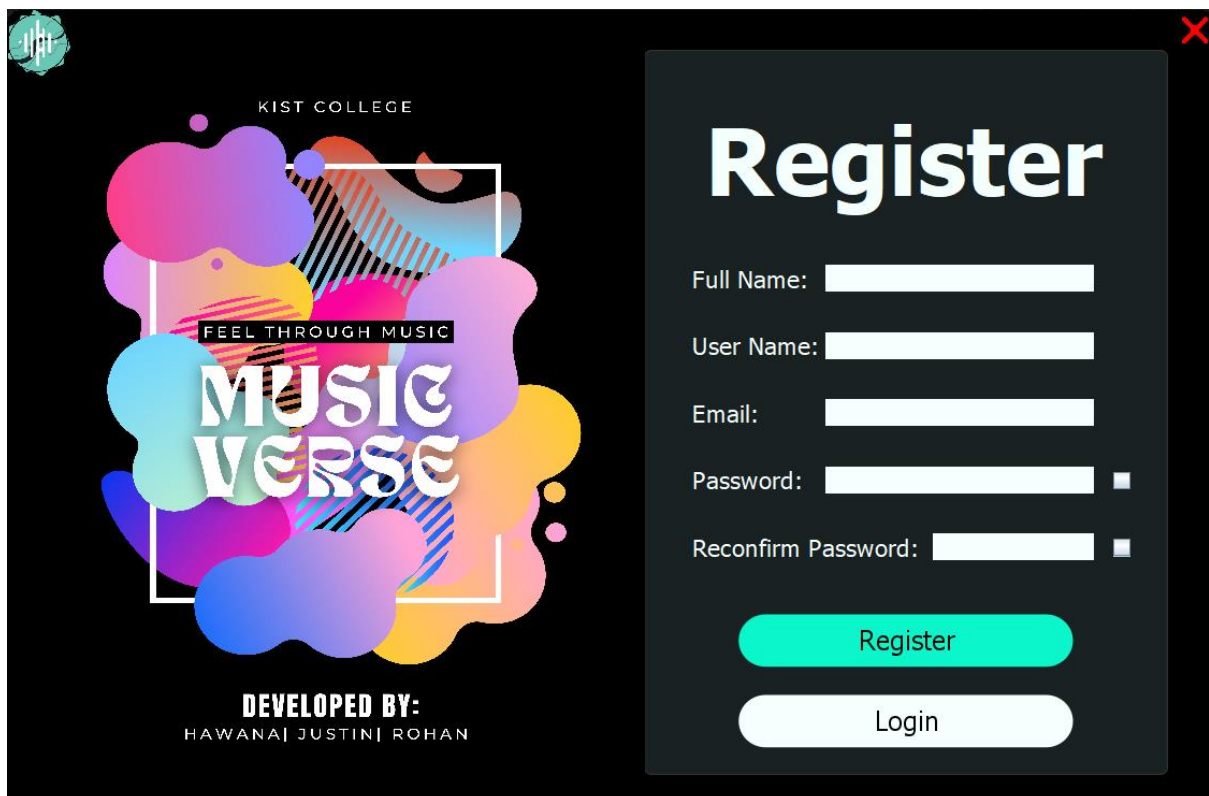
Login

User name:

Password:

Login

Register



Music Verse

KIST COLLEGE

FEEL THROUGH MUSIC

MUSIC VERSE

DEVELOPED BY:
HAWANA | JUSTIN | ROHAN

Register

Full Name:

User Name:

Email:

Password:

Reconfirm Password:

Register

Login

