

[REFRAIN – Hear the music, Feel the beat]

**A
Report
Submitted
In partial fulfillment
For the Final Year- 8th Semester
In Department of Information Technology**

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March – 2017

Shankersinh Vaghela Bapu Institute of Technology



Certificate

This is to certify that Ms. **POOJA R. BAROT** of B.E. Semester 8th IT class Enrolment No **130750116004** has satisfactorily completed her project report on **REFRAIN-MUSIC APP** during the academic year 2016-17.

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With Sincere regards

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Abstract

This study is aimed at developing a Refrain – Android app which can be used to manage a musical library and a video gallery. It is now required to move on from the traditional CD/DVD. The study discusses the World Wide Web (www) as an Internet service that allows the broadcast of the specific files. Familiarity with websites, programming and website development in an industry are also discussed. It also consist the system analysis and design which include the several download and upload mechanisms. This system also consists the system with its appropriate database, with the maintenance of database as well as system, software testing and debugging as well as software implementation. The implementation of the system is done using Apache as web server with extended support for PHP and MYSQL.

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1. INTRODUCTION

1.1 Organization Profile:



ELECTROWEB SOLUTION is one of the best software solution companies.

ELECTROWEB SOLUTION provides quality web solutions at affordable prices. Besides website development, it provides professional web marketing, online programming, Multimedia Presentation and Professional IT Training. It gives us a way for the best solution regarding the user-initiated companies.

Headed by Mr. Gaurang Chauhan experienced web specialist and director of operations, the management team is a small close-knit group of experts whose main obsession is studying businesses and corporate characteristics, applying each and every manufacturer's strength to the internet's meridian.

ELECTROWEB SOLUTION is an one of the most progressive technology industry focused, business driven professional services firm. From web design and development to applications, our experienced people work intelligently to solve and manage client's needs.

Services

ELECTROWEB SOLUTION strives to be Your Internet Business Partner in developing an effective solution for all your web site needs. Unique complete range of services provides solution alternatives that increase our respected client's profits and decrease costs.

Development

Considering the strategic importance of web design, ELECTROWEB SOLUTION put its greatest effort and creativity to build you the site that will stand out of the rest and contribute to the success of your business. We also provide web designing, Web Development, Software Development to people.

1.2 Project Detail**1.2.1 Project Definition**

Refrain (web & Android App.) is a system designed for the users from all over the world. There are so many other web sites already providing us music of all kind such as SAAVAN, GAANA, www.beemp3.com, songs.pk, www.indiamp3.com and many more but the major problem with all of them is that they don't ensure copyrights and they don't give us accurate information.

For example if you search for any song on those websites, it will give you 1000s of links to listen a particular song and download it so, what our website is going to do is that it will provide accurate information upon search. It will also provide us with features such as Live concert streaming, Trending search, Offline playing and many more.

1.2.2 Project Profile:

Refrain is a Web & Android based music App , That can be adopted by dependent and independent record labels, music bands and individual artists. It's features include Push Notification, Social Sharing, Movie on Demand, Live video and audio streaming, Artist profile amongst other cool features. And all this is managed through an easy to use Admin panel that makes changes to the App directly without having to re-upload it to the playstore everytime you make changes in your app.

1.3 Purpose

The Refrain is a unique application that is synchronizing both user experience and copyrights while providing services like online music management, legal downloads, artists' management.

There are several other applications available in the market that either provides some specific services or large scale integrated solutions. Our product differs from the rest in a way that we give more power to the users remaining within the copyrights circle

1.4 Scope of the Project

- Refrain is a unique web application that is basically a community based Android Application. It will have two types of users i.e. registered users and unregistered users. Unregistered users can get access to very limited features
- On the other hand, registered users can login to the application so that they can get access to the dashboard. The dashboard will be interactive options panel that will show users' activity and the major functionality of the application

1.5 Features of the Project

There will be a community feature that will enable multiple users to interact with each other in a specific group. Users can create their own music streams that can be available for other registered members. These streams can either private or public depending on the user's applied settings.

- Once logged in, the manager will upload music, videos and pictures. He will have the ability to set the copyright license. The manager can also create events on Application and put the link on the website and Application.
- The registered users will get access to the content uploaded by the managers. The users can create playlists, stream music, download music and take part in community discussions. Before downloading, the user will be asked to pay for the music if it's not free.
- The administrative panel consists of the global administrators, the artist/managers and the general users. Independent developers can also get access to our API (application programming

interface) that will enable them to integrate our resources in their own custom applications, Global admin can do whatever he/she wants to do access source code edit it access database and stuff like that.

- Unregistered user can only use limited resources of product such as browsing and viewing events
- Artist/manager should also log in to get access to their dashboard but their dashboard will have two additional feature then registered user i.e.(upload, creating and editing events)

1.6 List of Advantages

- Light Weight Application
- Easy Music Playing anytime, anywhere
- Latest Trending details
- Offline playing
- User interaction
- Dynamically content management
- Accurate results
- Easy Navigation
- Secure User's Details
- Live Streaming of Concert, Sports.

1.7 Technology and literature review:

The project is made using the platform Android Studio version 2.2 and front end Android programming. It does also maintain the database using php web services as back end. The software includes the much functionality. Its required lots of information to be stored. All the information stored in it should be stored in particular manner.

- What is Android? – **Android** is the name of the mobile operating system owned by American company; Google
- By default, every application runs in its own Linux process. Android starts the process when any of the application's code needs to be executed, and shuts down the process when it's no longer needed and system resources are required by other applications.
- Each process has its own virtual machine (VM), so application code runs in isolation from the code of all other applications.

- By default, each application is assigned a unique Linux user ID. Permissions are set so that the application's files are visible only to that user and only to the application itself — although there are ways to export them to other applications as well.

Application Components:

A central feature of Android is that one application can make use of elements of other applications (provided those applications permit it). For example, if your application needs to display a scrolling list of images and another application has developed a suitable scroller and made it available to others, you can call upon that scroller to do the work, rather than develop your own. Your application doesn't incorporate the code of the other application or link to it. Rather, it simply starts up that piece of the other application when the need arises. For this to work, the system must be able to start an application process when any part of it is needed, and instantiate the Java objects for that part. Therefore, unlike applications on most other systems, Android applications don't have a single entry point for everything in the application (no `main()` function, for example). Rather, they have essential components that the system can instantiate and run as needed.

2. ABOUT THE SYSTEM

2.1 System Requirement Specification

Hardware Requirement (Minimum)

Server

- Dual Core or 2.0 of more Processor Recommended
- 4.0 GB of Ram Recommended

Client

- Any PC/Tablet/Android Smart Phone Employee that supports Internet.
- Android Device with version 4.4 And above
- Minimum Ram Required is 1GB.

Software Requirement (minimum)

Server :

- Windows XP Level or Later OS Recommended
- xampp Server 2.5
- MySQL 5.1.16

Client

- Google Chrome or any Browser
- Play Store app For Android device

2.2 Feasibility study:

- A feasibility study is conducted to select the best system that meets performance requirement. This entails an identification description, an evaluation of candidate system and the selection of best system for job. The system required a statement of constraints; the identification of specific system objective and a description of output define performance etc.. The key considerations in feasibility analysis are:
- Economic Feasibility
- Technical Feasibility
- Operational Feasibility

Economical feasibility :

It looks at the financial aspects of the project. It determines whether the management has enough resource and budget to invest in the proposed system and the estimated time for the recovery of cost incurred. It also determines whether it is worthwhile to invest the money in the proposed project. Economic feasibility is determines means of cost benefit analysis

The proposed system is economically feasible because the cost involved in purchasing the hardware and the software are within approachable. The personal cost like salaries of employees hired are also nominal because the working in this system need not required a highly qualified professional. The operating-environment costs are marginal. The less time involved also helped in its economical feasibility. It was observed that the organization has already using computers for other purpose, so that there is no additional cost to be incurred for adding this system to its computers. The backend required for storing other details is also the same database that is oracle8i. The computers in the companies are highly equipped and updated and don't require any add on components to use the software. Hence the organization can implement the new software without any additional cost. Hence, it is economically feasible.

Technical Feasibility :

It is a criteria of the practical of a specific technical things and the availability of resources and expertise, This system uses Android programming & Android studio as front-end & MySQL as back-end tool.

- MySQL is a best tool used to develop database objects such as table views, indexes.
- The above tools are easily available, easy to implement with and widely used for developing commercial application.

Operational Feasibility:

The system will be used if it is developed well then be resistance for users that undetermined -

- No major training and new skills are required.
- It will help in the time saving and fast processing and dispersal of user request and applications.
- New product will provide all the benefits of present system with better performance.
- Improved information, better management and collection of there ports.
- User support.
- User involvement in the building of present system is sought to keep in mind the user specific requirement and needs.

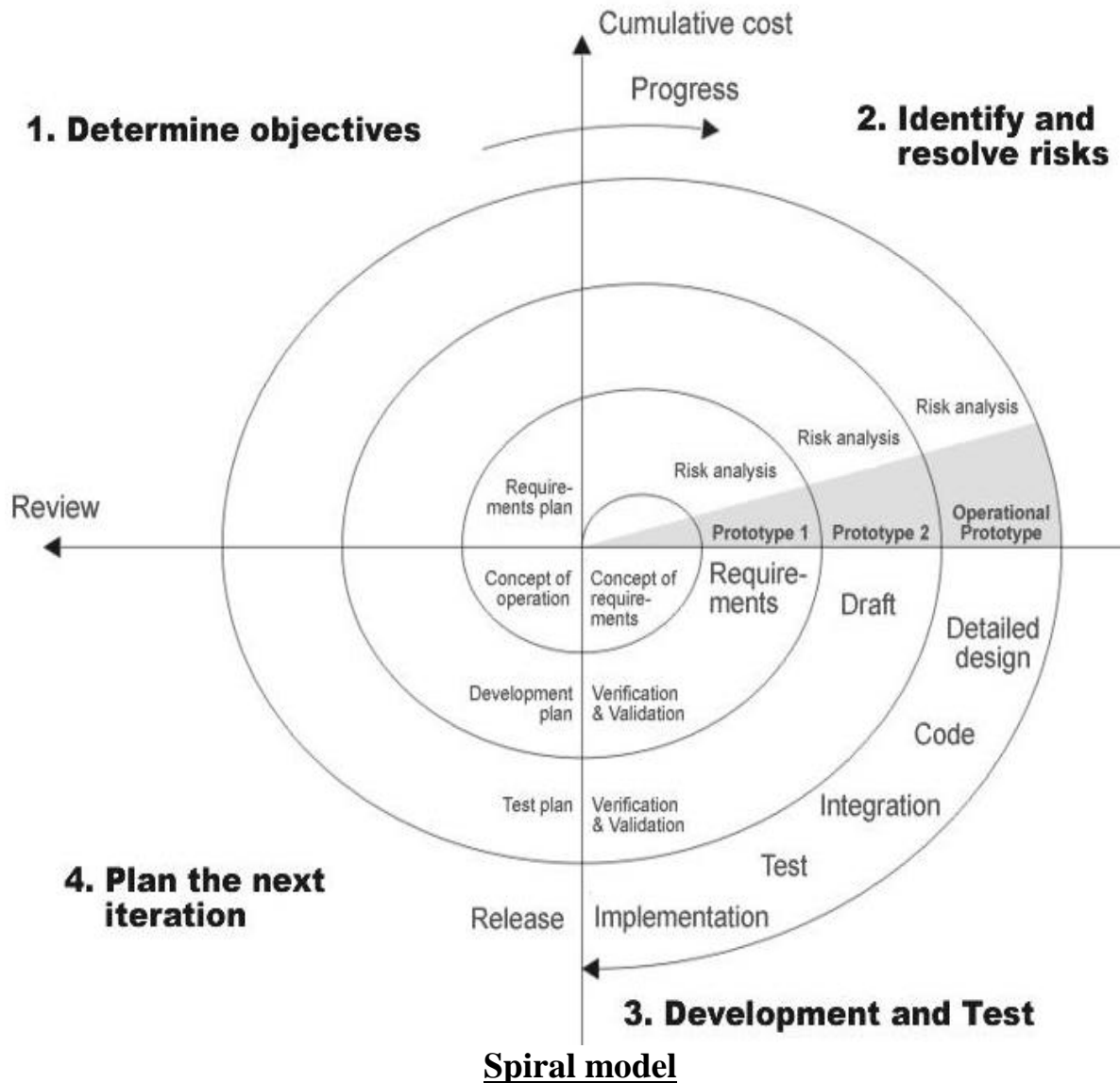
2.3 Project Planning:

Software project planning involves estimation of – Money, - Effort, - Resources and Time it will take to build a specific software base system.

2.3.1 Project Development Approach and Justification

For the project development, the company has chosen the spiral model. The *spiral model* is an evolutionary software process model that couples the iterative nature of prototyping with the controlled and systematic aspects of the *linear sequential model*. It provides the potential for rapid development of incremental versions of the software. Using the spiral model, software is developed in a series of incremental releases. A spiral model is divided into a number of framework activities, also called *task regions*. Typically, there are between three and six task regions. Figure shows a Spiral model that contains six task regions:

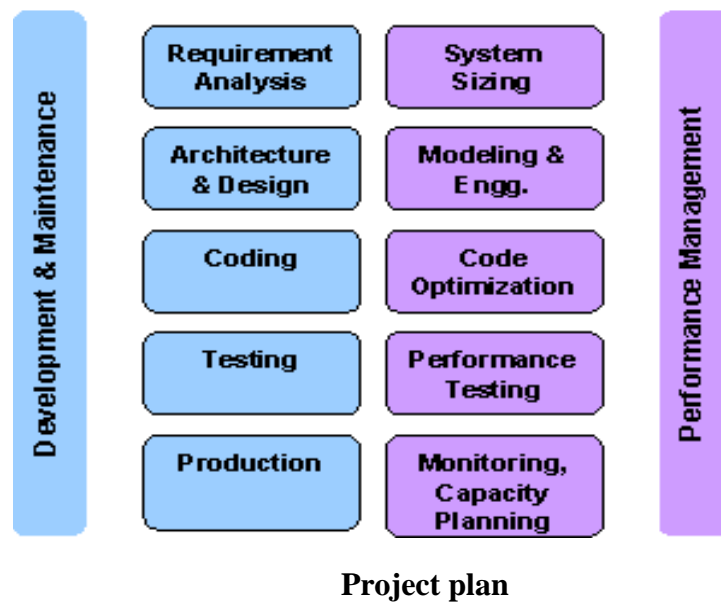
- **Customer communication**—tasks required to establish effective communication between developer and customer.
- **Planning**— tasks required to define resources, timelines, and other project related Information.
- **Risk analysis**—required to assess both technical and management risks.
- **Engineering**—tasks required to build one or more representations of the application.
- **Construction and release**—tasks required to construct, test, install, and provide user support (e.g., documentation and training).



The drawbacks of Spiral model:

It may be harder to convince clients that the evolutionary approach is very beneficial. It requires proper risk analysis and relies on this analysis for success. If a major risk is not uncovered and managed, problems will surely occur.

Project Plan including Milestones, Deliverables, Roles, Responsibilities and Dependencies
Project Plan considered as below:



Different parameters were taken into consideration while considering the cost factor incurred in the project:

The project planning was carried out by our project leader with the higher management considering all the feasibility analysis, such as Technical feasibility, time schedule feasibility,

Problem Decomposition:

Problem decomposition, sometimes called partitioning or problem elaboration, is an activity that sits at the core of software requirements analysis during the scoping activity no attempt is made to fully decompose the problem. Rather, decomposition is applied in two major areas:

- (1) The functionality that must be delivered
- (2) The process that will be used to deliver it.

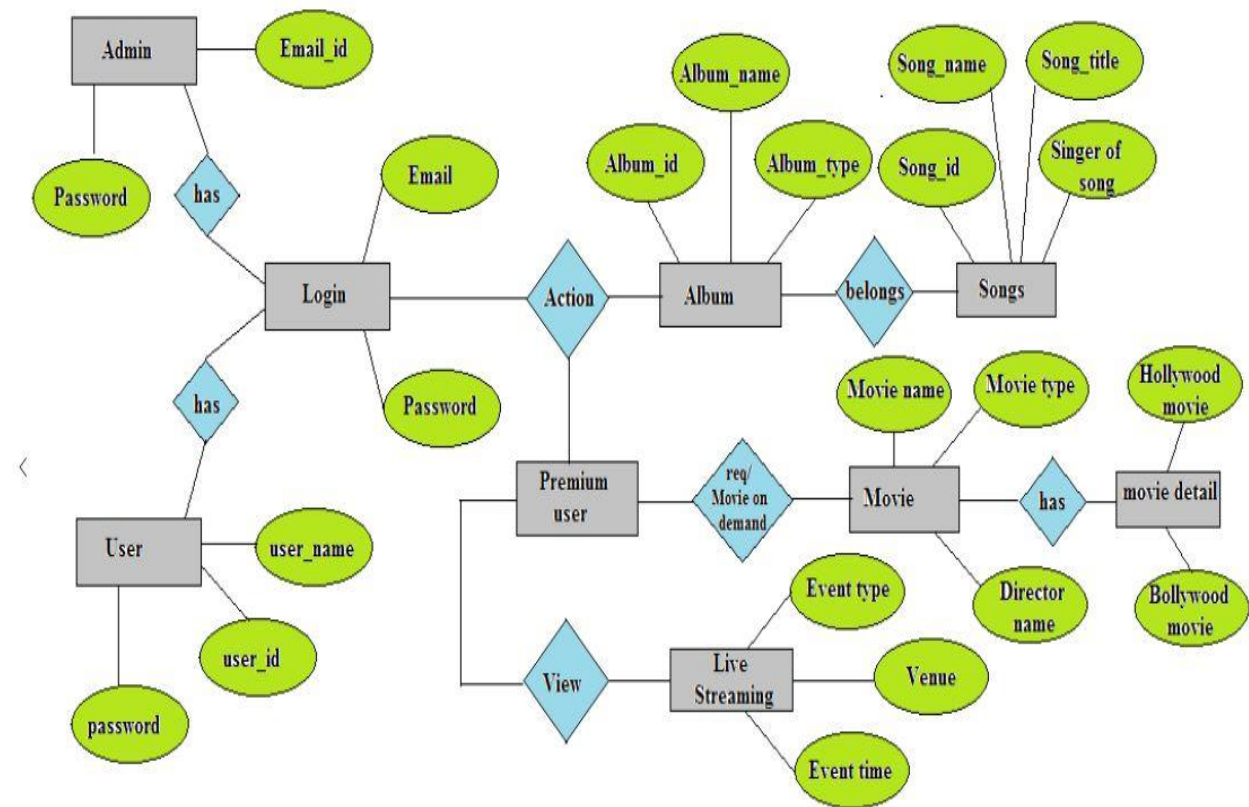
Melding the Product and the Process:

Customer communication—tasks required to establish effective requirements elicitation between developer and customer.

- Planning—tasks required to define resources, timelines, and other project related information.
- Risk analysis— used to assess both technical and management risks.
- Engineering—used to build one or more representations of the application.
- Construction and release—tasks required to construct, test, install, and provide user support

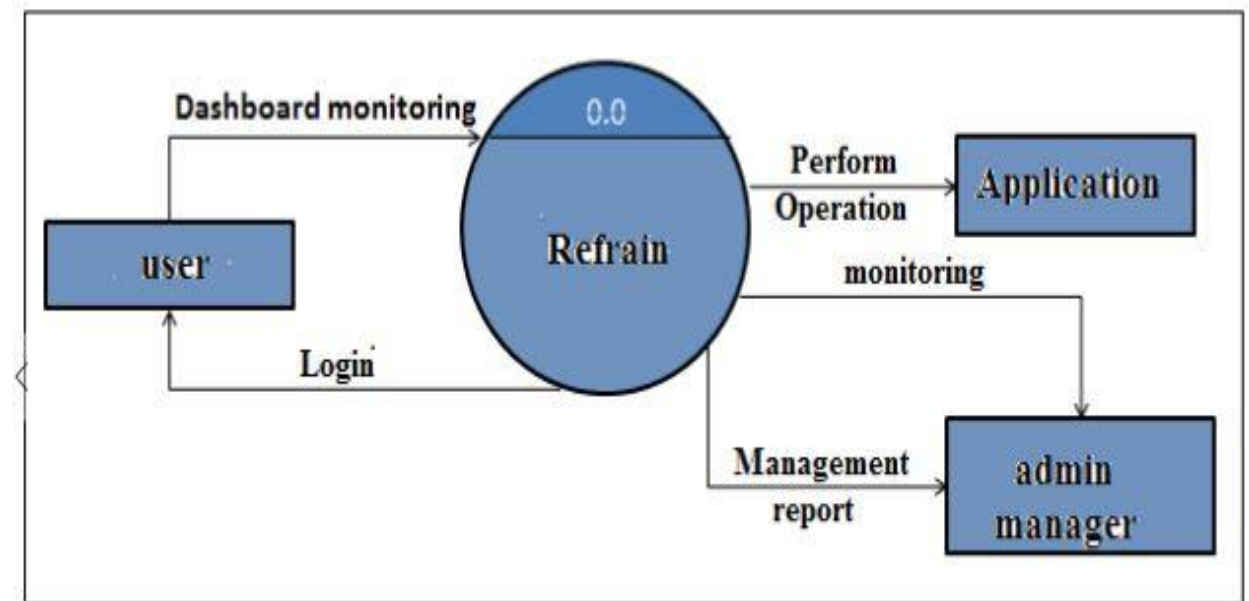
3. ANALYSIS

3.1 E-R Diagram

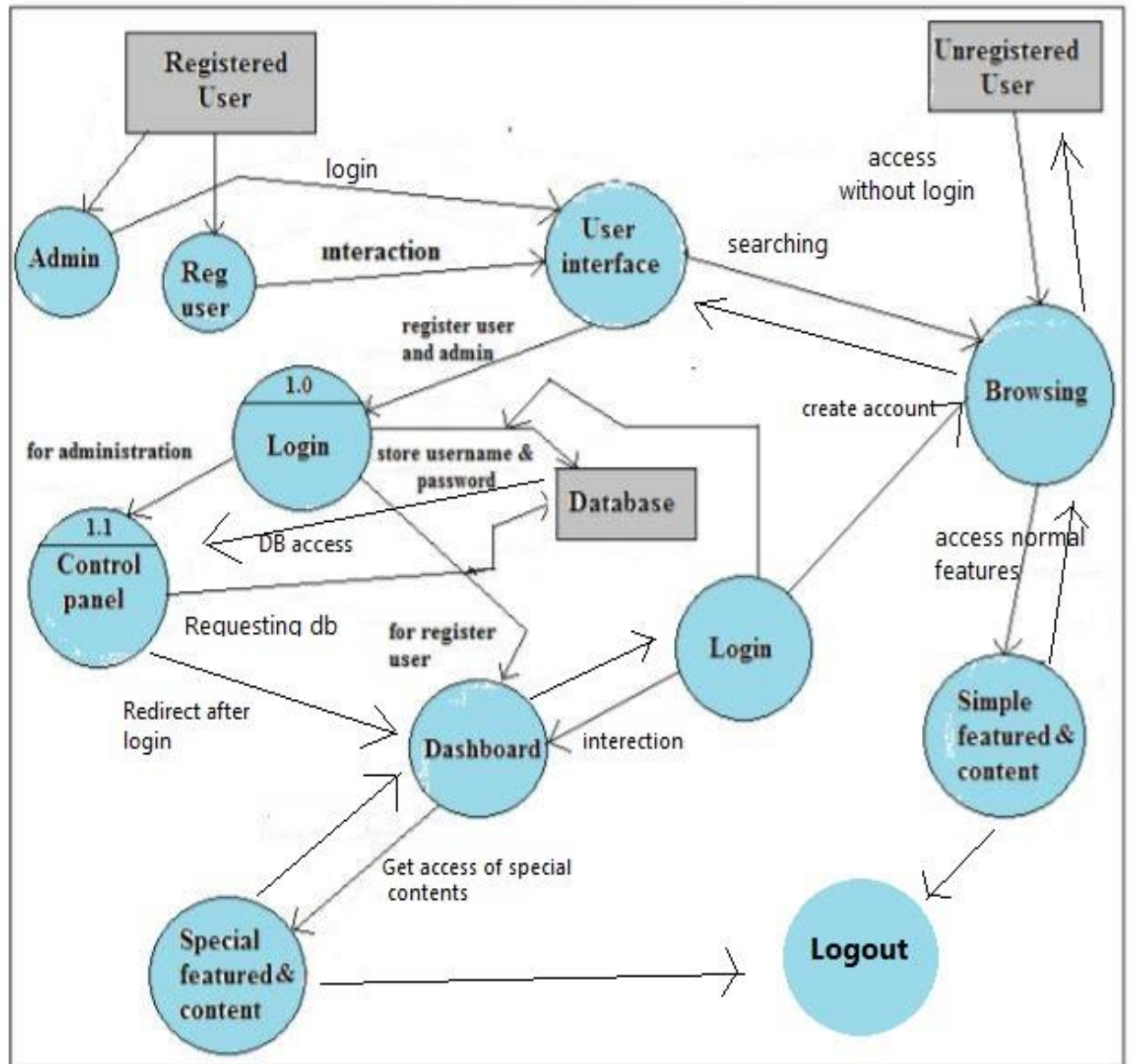


3.2 Data Flow Diagram:

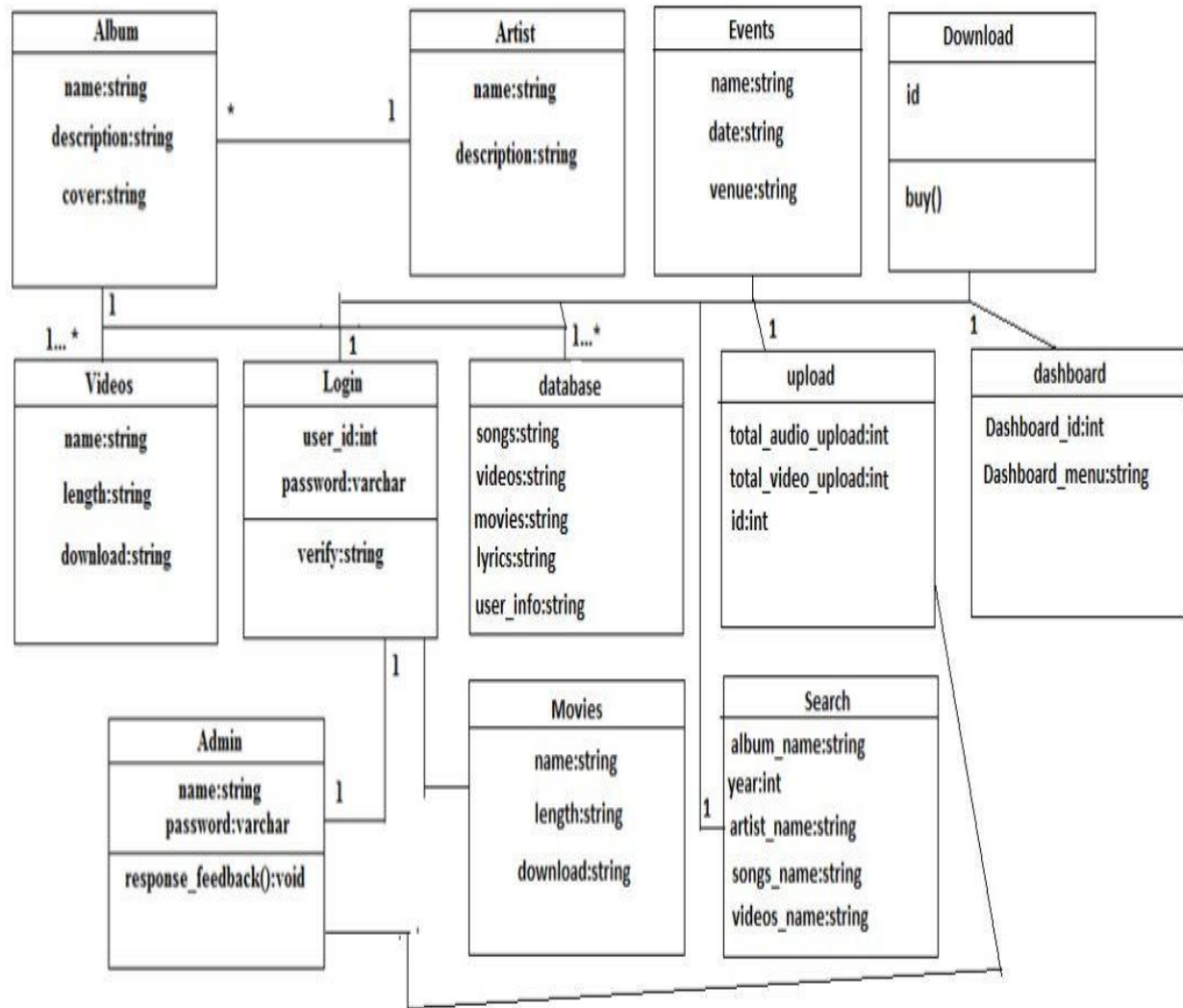
- Level 0:



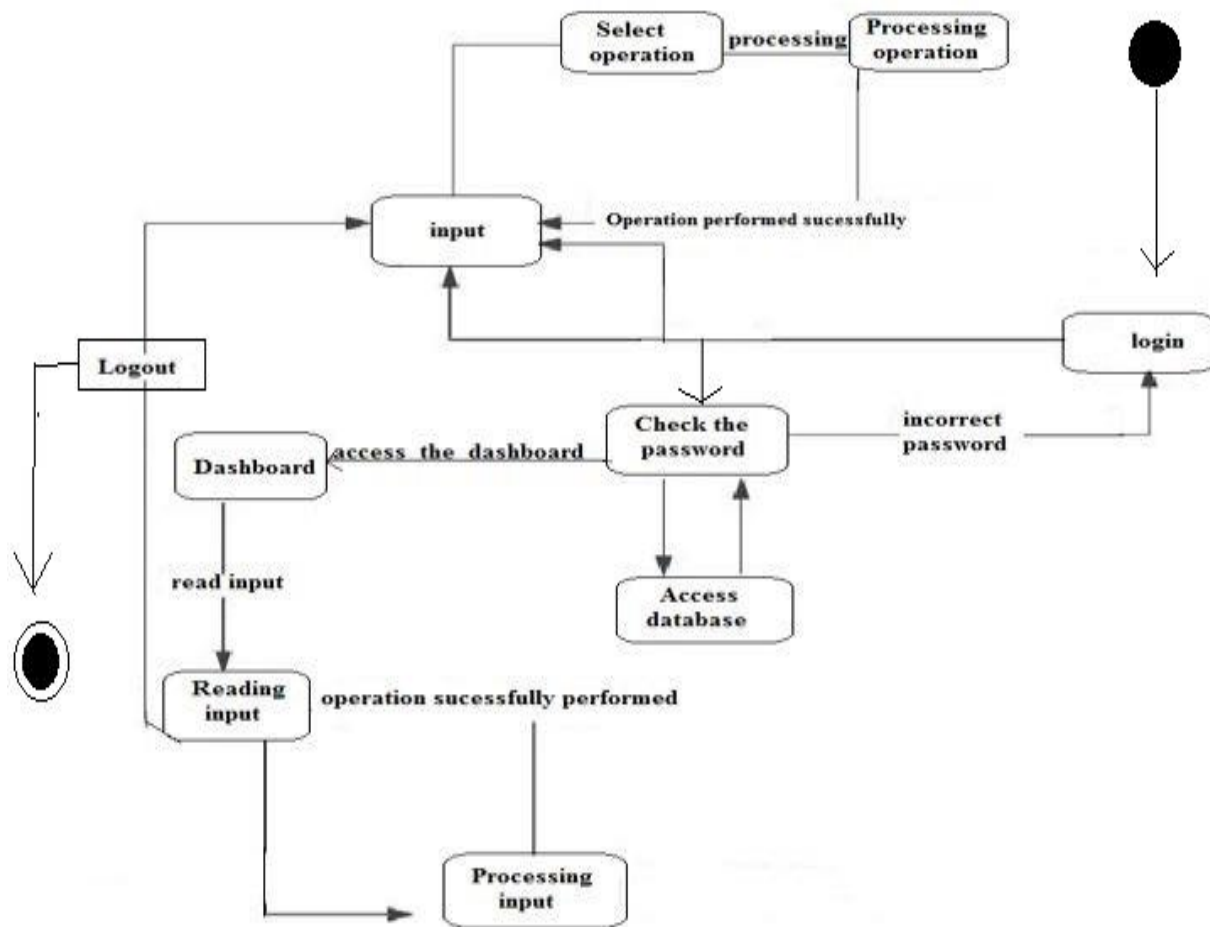
- Level 1:



3.3 Class Diagram

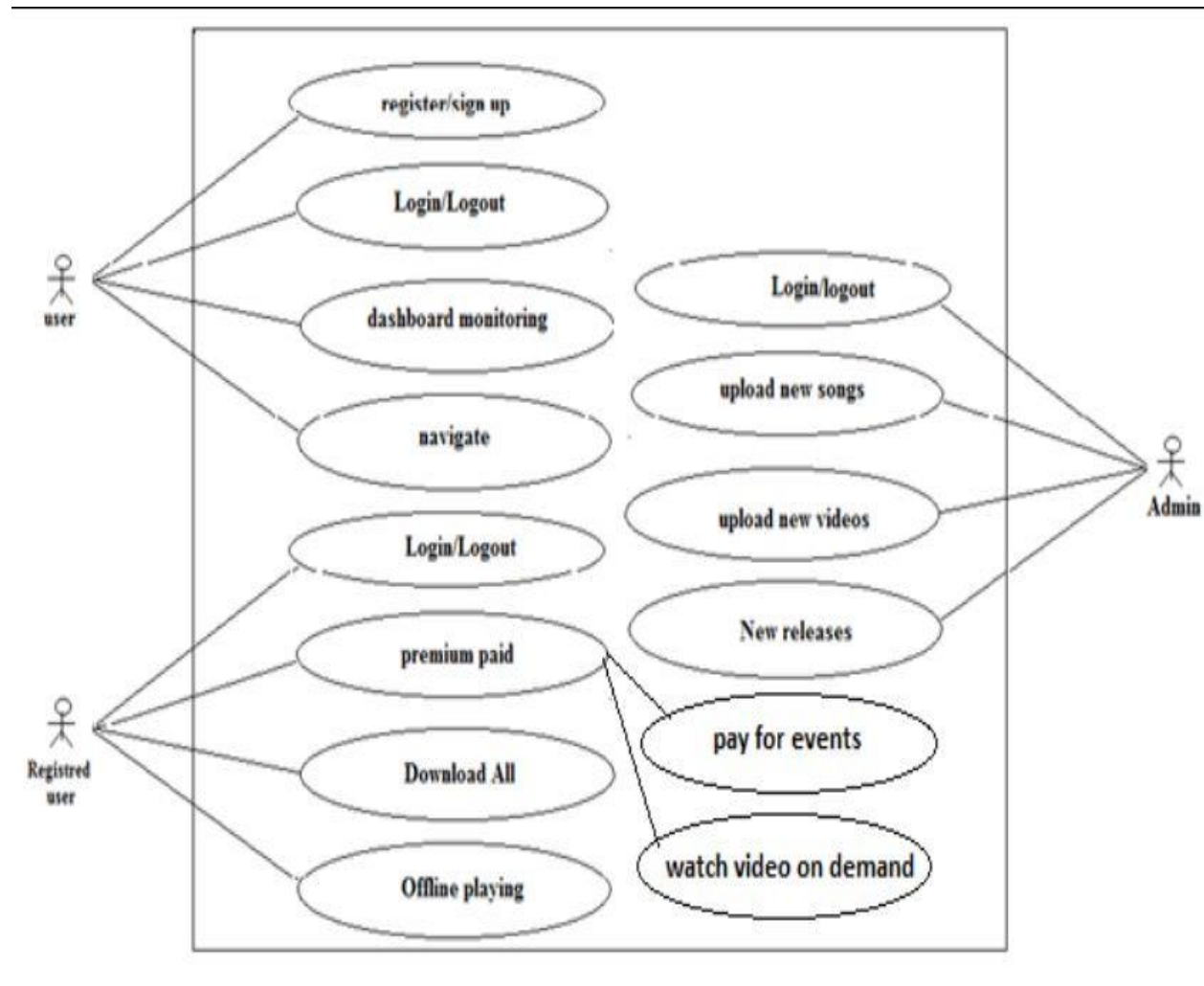


3.4 State Diagram



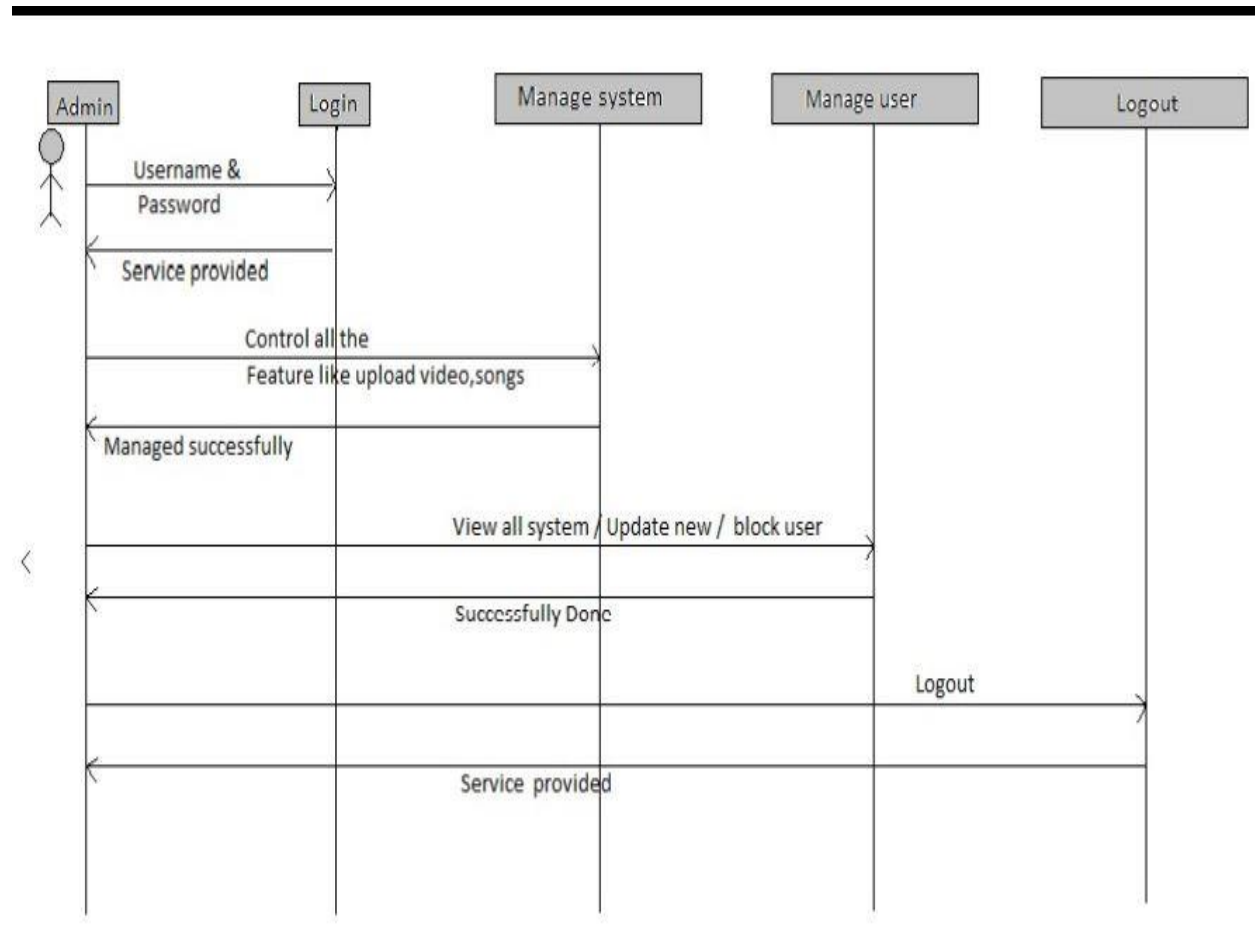
Ad

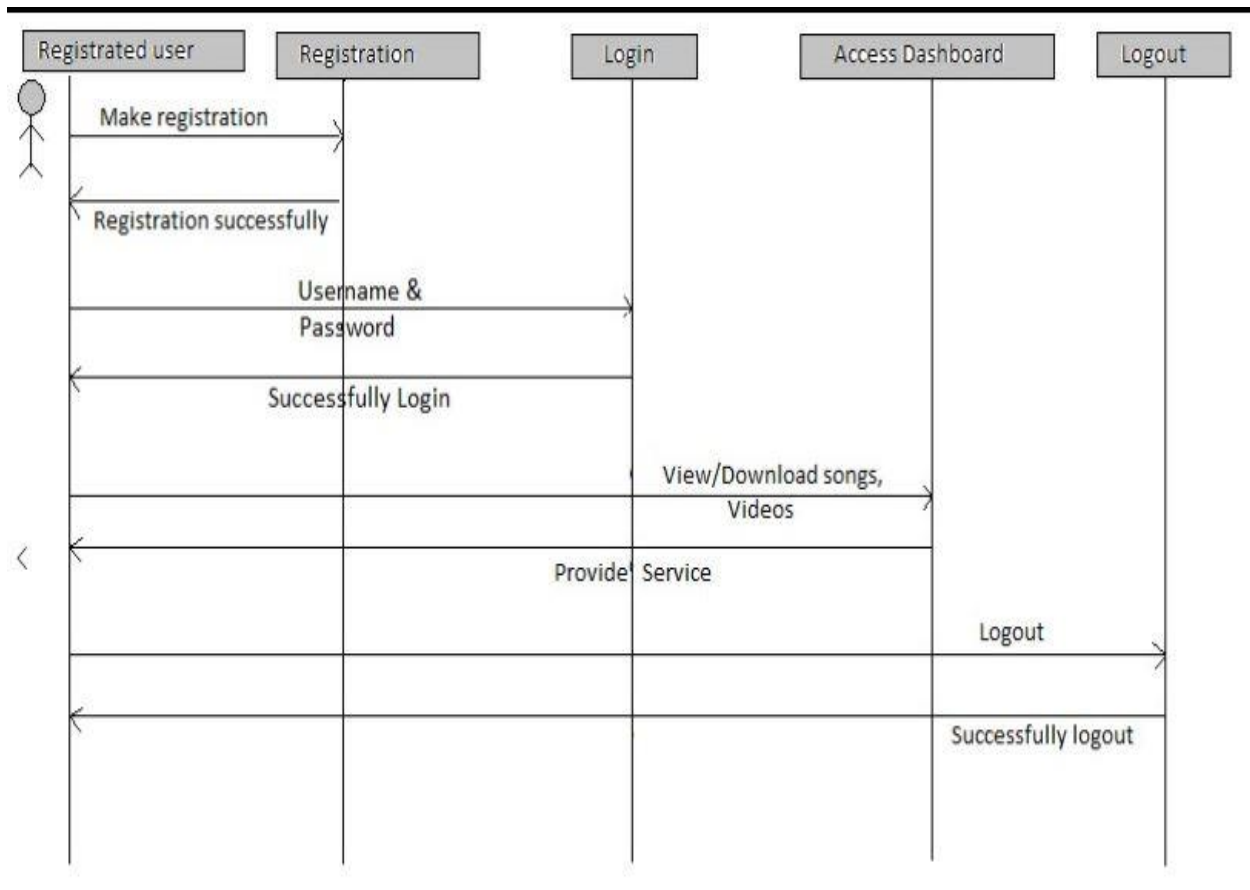
3.5 Use case Diagram:



3.6 Sequence Diagram:

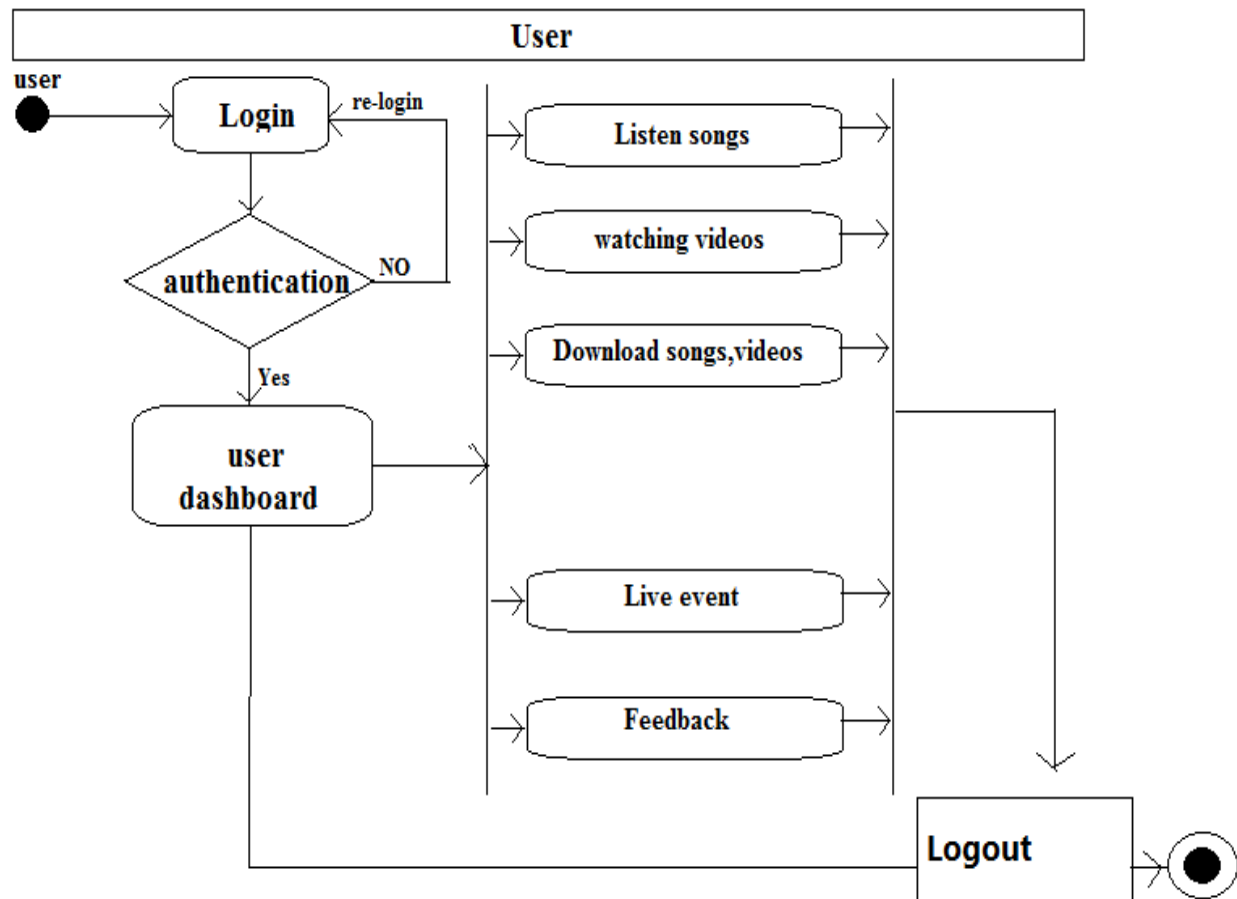
3.6.1 Admin



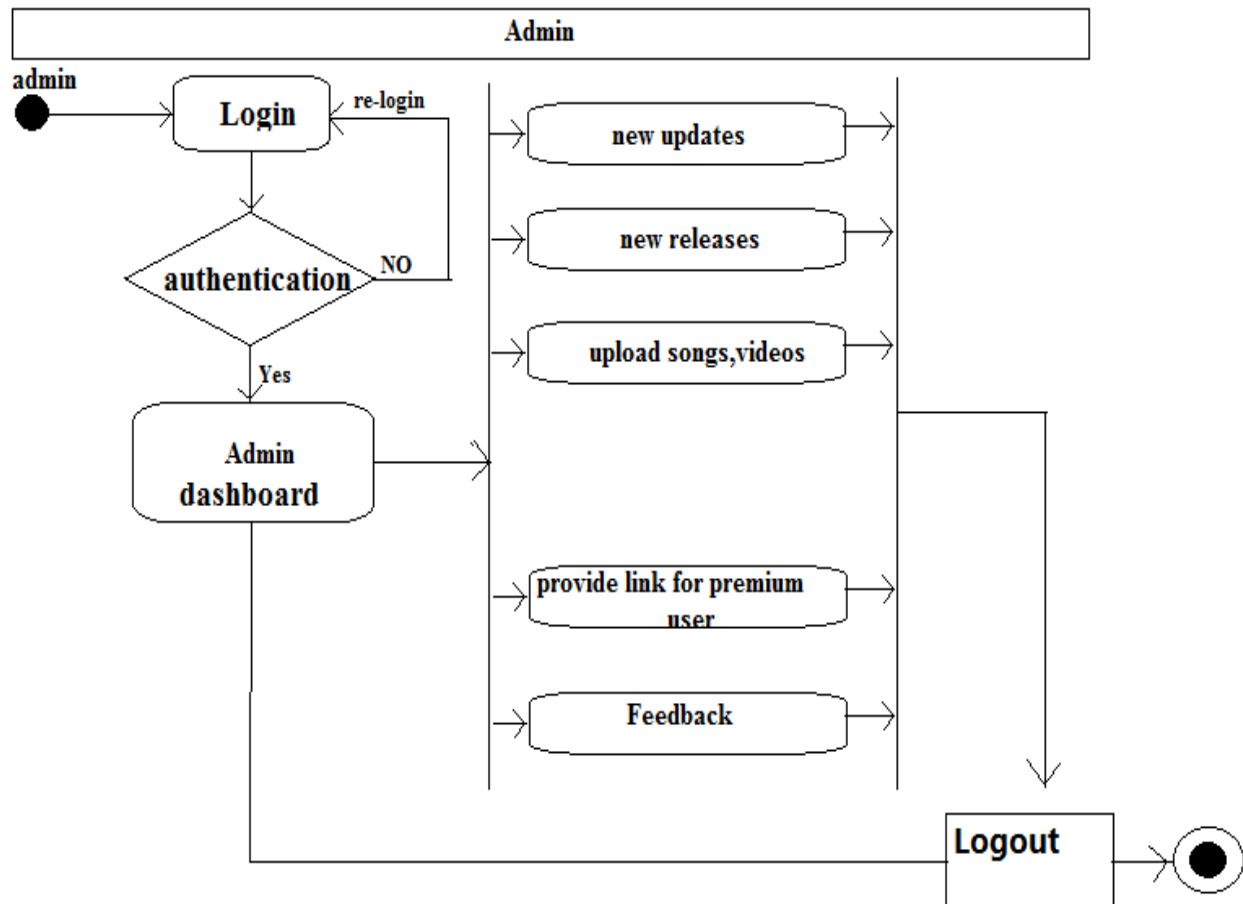
3.6.2 User:

3.7 Activity Diagram

3.7.1 User Activity:

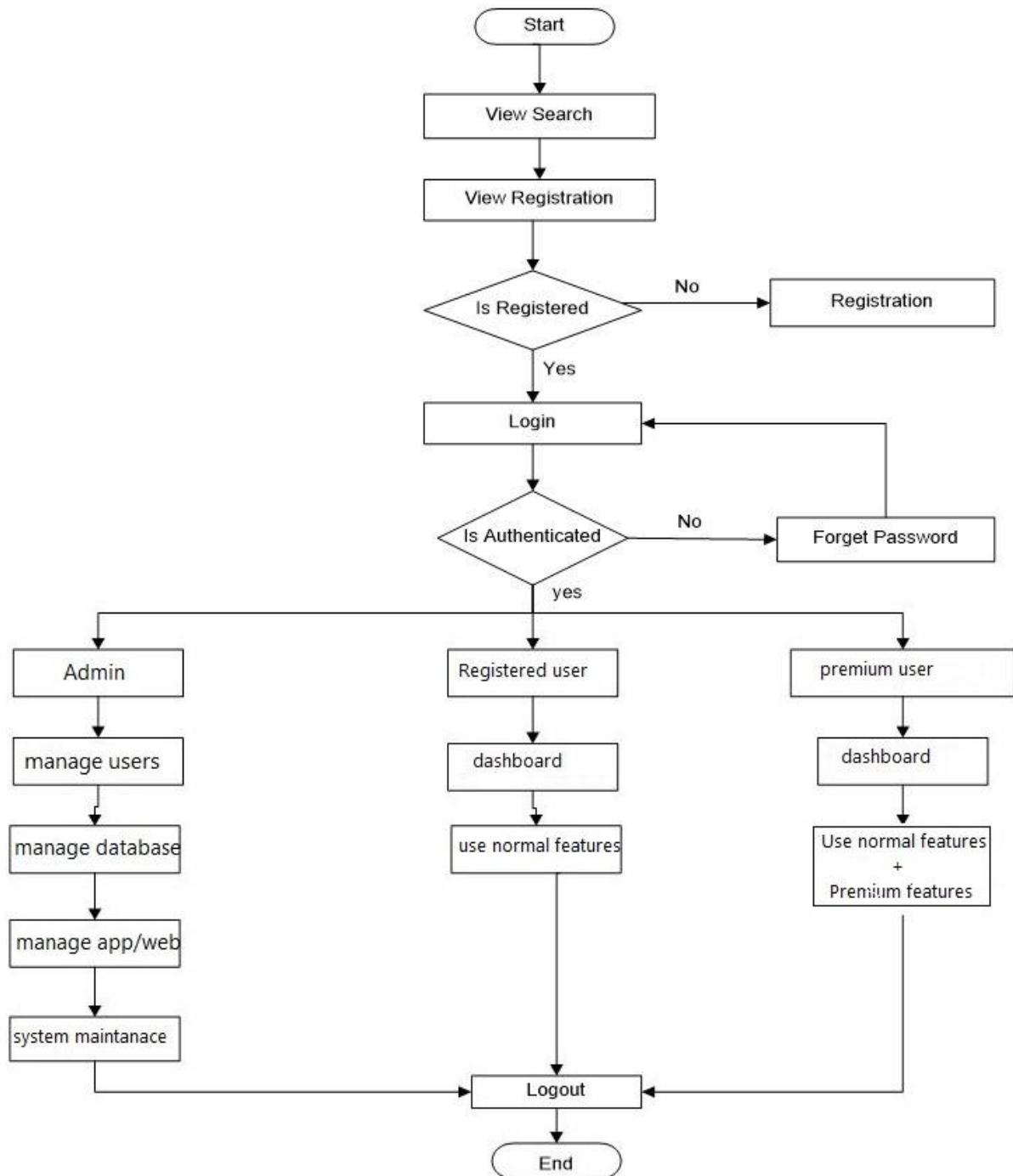


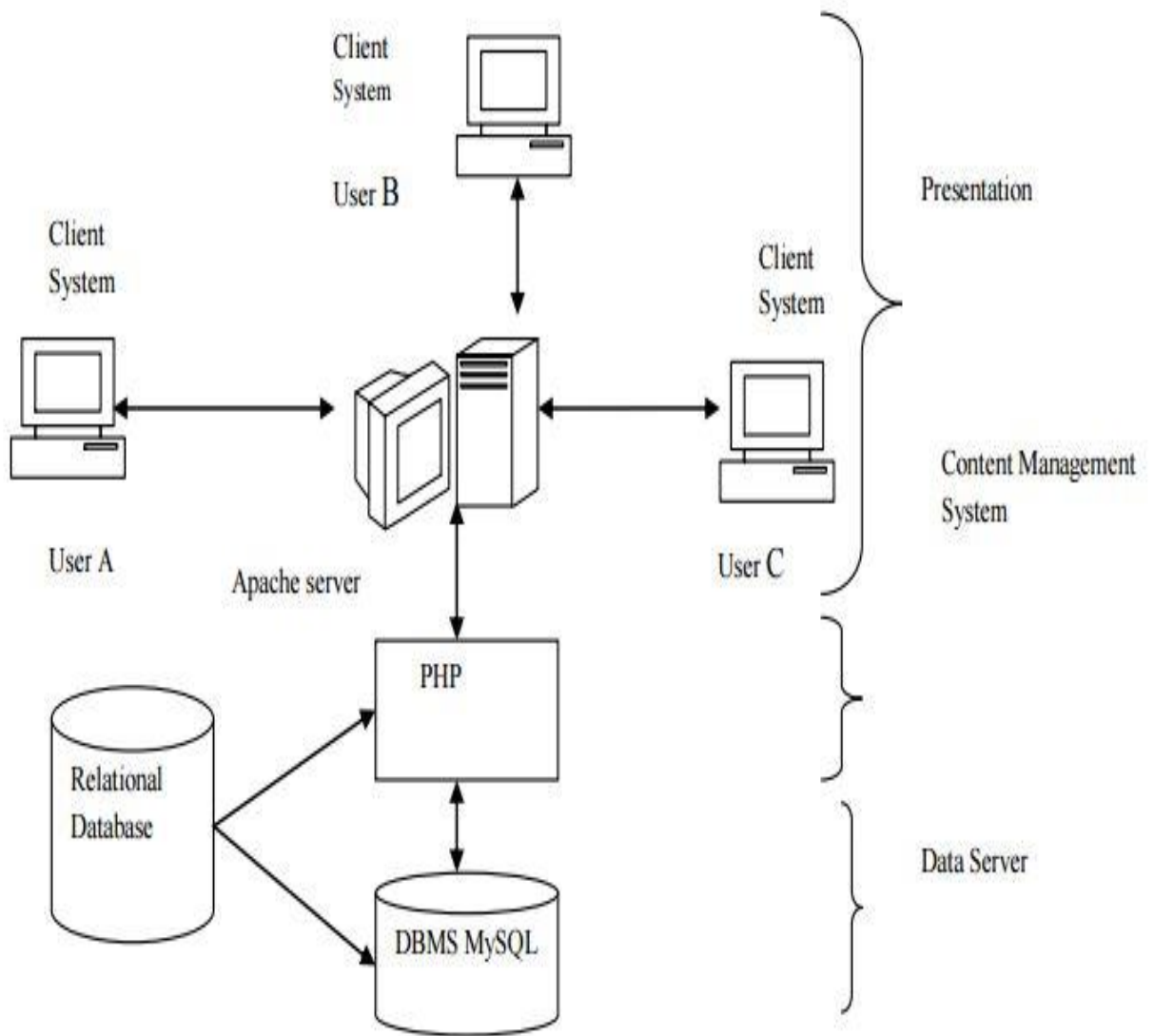
3.7.2 Admin Activity:



4. DESIGN

4.1 System Flow Diagram:





SYSTEM ARCHITECTURE

4.2 Data Dictionary

4.2.1 User:

Table Name: Refrain_User				
Primary Key: User_id				
Table Description: This table contains all user details like registered user, premium user				
<u>FIELD NAME</u>	<u>FIELD TYPE</u>	<u>SIZE</u>	<u>CONSTRAINS</u>	<u>DESCRIPTION</u>
User_id	Int		Primary Key	User info
Login_id	Int		Foreign Key	Login id info
User_type	Varchar		Foreign Key	User type info
User_name	Int		Foreign Key	User name info
User_DOB	Int	8	Nullable	User date of birth info
User_gender	Varchar		Nullable	User gender info
User_mobile_number	Number	10	Not Null	User mobile number info
User_email_id	Varchar	20	Not Null	User email id info
Password	Int	15	Not Null	User password info
Status	Varchar		Nullable	Status info
User_activity	Varchar		Not Null	User activity info

4.2.2 Song:

Table Name : Refrain_song				
Primary Key: Song_id				
Table Description: This table contains song details				
<u>FIELD NAME</u>	<u>FIELD TYPE</u>	<u>SIZE</u>	<u>CONSTRAINS</u>	<u>DESCRIPTION</u>
song_id	Int	15	Primary Key	Song id info
song_name	Varchar		Not Null	Song name info
Song_type	Varchar		Nullable	Song type info
Song_MP3	Varchar		NotNull	Song MP3 info
Song_artist	Varchar		Nullable	Song artist info
Song_release_date	Int		Nullable	Song release info

4.2.3 Admin

Table Name: Refrain_Admin				
Primary Key: Admin_id				
Table Description: This table contains admin details				
<u>FIELD NAME</u>	<u>FIELD TYPE</u>	<u>SIZE</u>	<u>CONSTRAINS</u>	<u>DESCRIPTION</u>
Admin_id	Int		Primary Key	Admin id info
Admin_password	Varchar	10	Foreign Key	Admin password info
Admin_name	Varchar		Foreign Key	Admin name info
Admin_DOB	Int	8	Foreign Key	Admin date of birth info
Admin_gender	Varchar		Foreign key	Admin gender info
Admin_email_id	Varchar	15	Not Null	Admin email id info
Admin_mobile_number	Number	10	Not Null	Admin mobile number info
Admin_activity	Varchar		Not Null	Admin activity info

4.2.4 Login:

Table Name:Refrain_login				
Primary Key: login_id				
Table Description: This table contains login details				
<u>FIELD NAME</u>	<u>FIELD TYPE</u>	<u>SIZE</u>	<u>CONSTRAINS</u>	<u>DESCRIPTION</u>
Login_id	Int		Primary Key	login id info
Password	Nvarchar	15	Not Null	password info
User_type	Varchar		Not Null	User type info

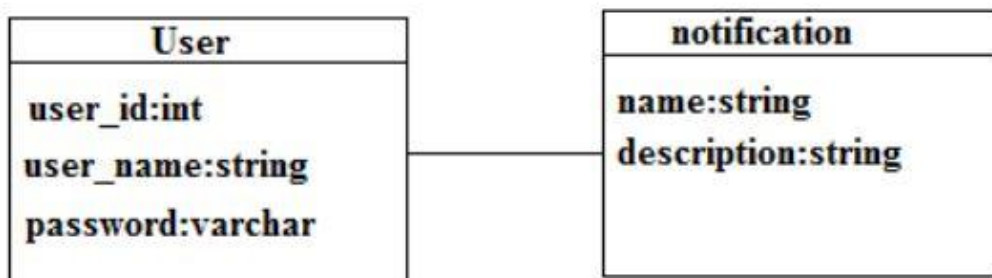
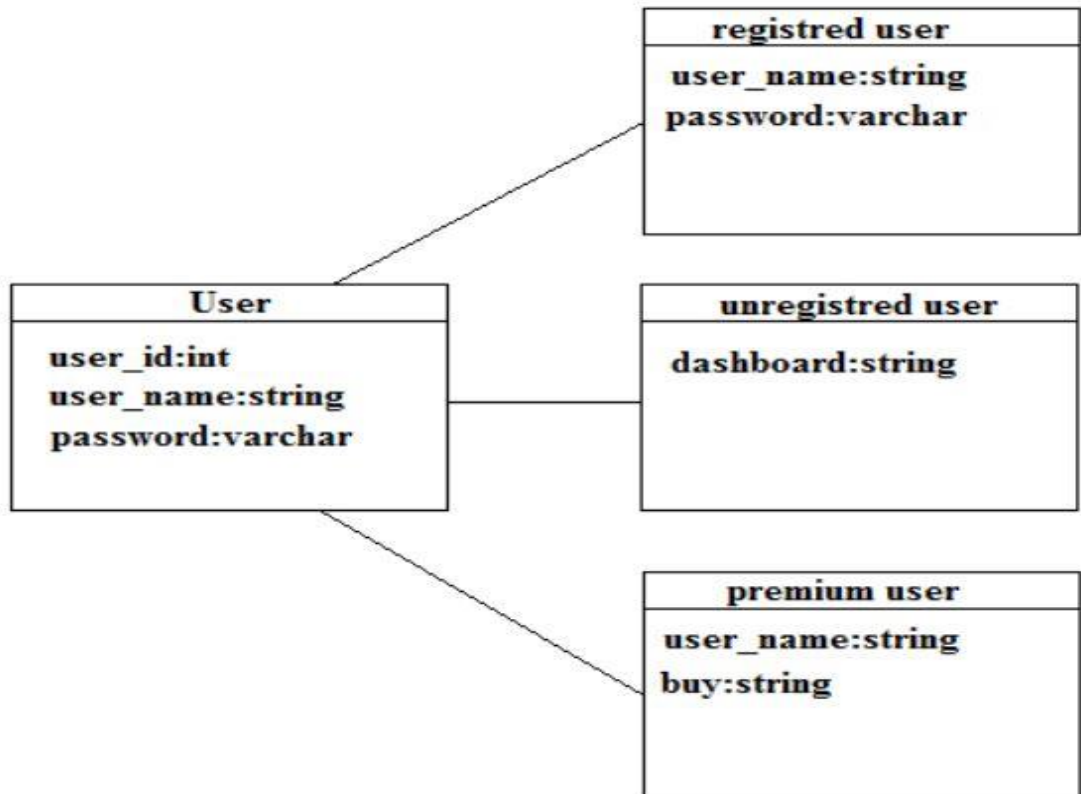
4.2.5 Movie:

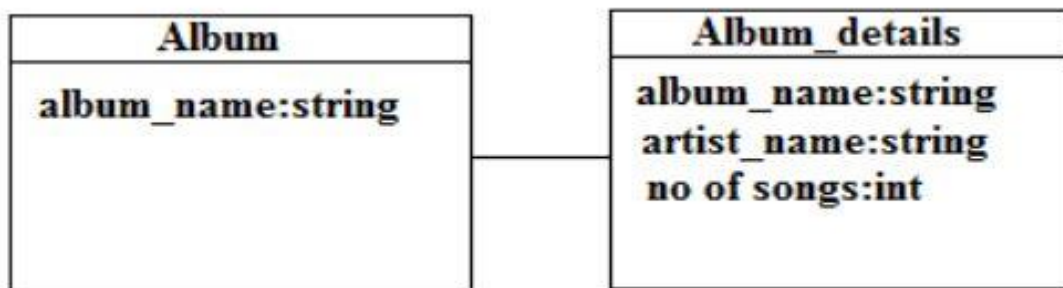
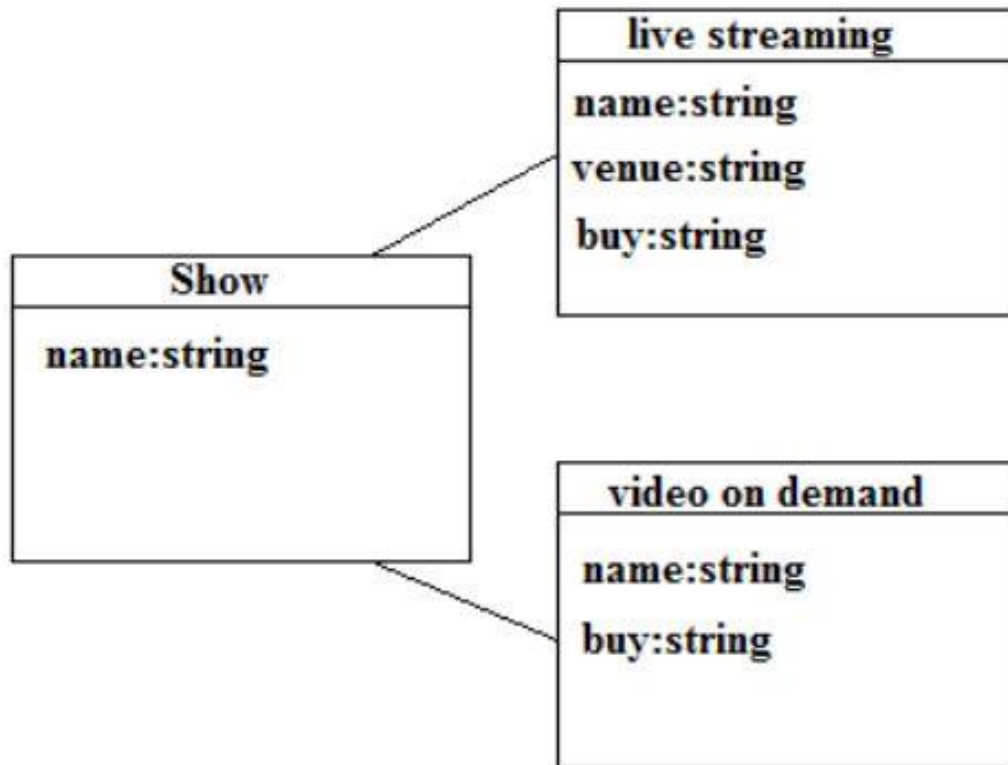
Table Name: Refrain_movie				
Primary Key: Movie_id				
Table Description: This table contains movie details				
<u>FIELD NAME</u>	<u>FIELD TYPE</u>	<u>SIZE</u>	<u>CONSTRAINS</u>	<u>DESCRIPTION</u>
Movie_id	Int	15	Primary Key	Movie id info
Movie_name	Varchar		Foreign Key	Movie name id info
Movie_release_date	Int		Nullable	Movie release date info
User_type	Varchar		NotNull	User type info

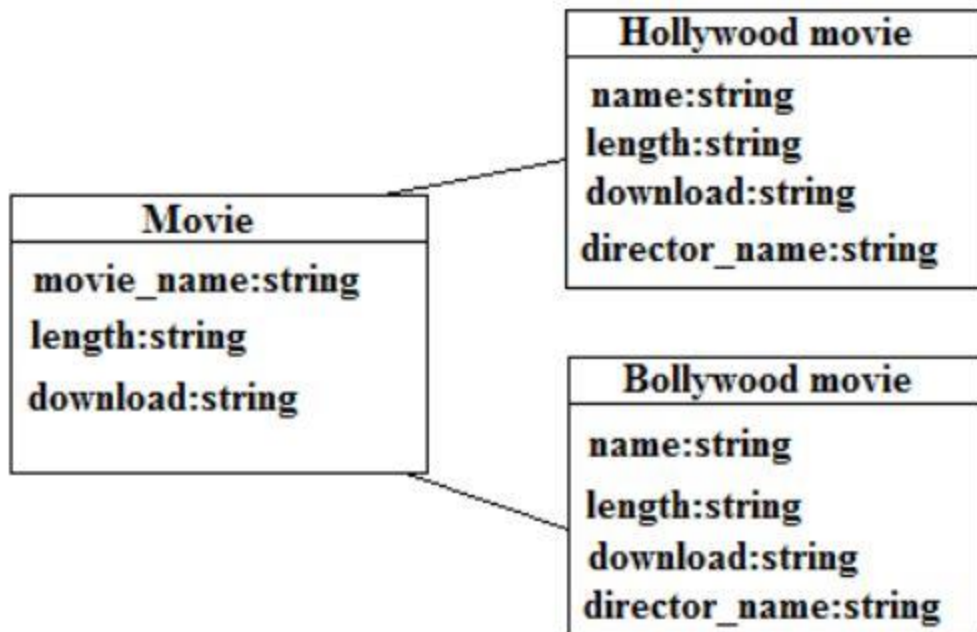
4.2.6 Live streaming:

Table Name: Refrain_Live_streaming				
Primary Key: Premium_user_id				
Table Description: This table contains live steaming details				
<u>FIELD NAME</u>	<u>FIELD TYPE</u>	<u>SIZE</u>	<u>CONSTRAINS</u>	<u>DESCRIPTION</u>
Concert_name	Varchar		Foreign Key	Concert name info
Premium_user_id	Varchar	15	Primary Key	Premium user id info
Concert_date	Int	8	Nullable	Concert date info
Price	Int		NotNull	Price info

4.3 Relationship table







4.4 User Interface

The user interface is one of the major things on the web application end, since many users come to a conclusion on the standards and services of the application by looking at it. Having a good UI is very important.

If you want to design a great, functional mobile app interface, design principles are hugely important. Design principles (commonly called heuristics) are loose guidelines that designers can stick to in order to improve the quality of a user interface design.

- Most common user interface design principles:

The Structure Principle

Design should organize the user interface purposefully, in meaningful and useful ways based on clear, consistent models that are apparent and recognizable to users, putting related things together and separating unrelated things, differentiating dissimilar things and making similar things resemble one another. The structure principle is concerned with overall user interface architecture.

The Simplicity Principle

The design should make simple, common tasks easy, communicating clearly and simply in the user's own language, and providing good shortcuts that are meaningfully related to longer procedures.

The Visibility Principle

The design should make all needed options and materials for a given task visible without distracting the user with extraneous or redundant information. Good designs don't overwhelm users with alternatives or confuse them with unneeded information.

The Feedback Principle

The design should keep users informed of actions or interpretations, changes of state or condition, and errors or exceptions that are relevant and of interest to the user through clear, concise, and unambiguous language familiar to users.

The Tolerance Principle

The design should be flexible and tolerant, reducing the cost of mistakes and misuse by allowing undoing and redoing, while also preventing errors wherever possible by tolerating varied inputs and sequences and by interpreting all reasonable actions.

The Reuse Principle

The design should reuse internal and external components and behaviors, maintaining consistency with purpose rather than merely arbitrary consistency, thus reducing the need for users to re think and remember.

For the user interface please refer **section 5.3 - Screenshot.**

5. IMPLEMENTATION

5.1 Implementation Environment

We can start our Android application development on either of the following operating systems

- Microsoft Windows 7 or latest version.
- Mac OS X 10 or latest version with Intel chip.
- Linux including GNU C Library 2.7 or latest.

Second point is that all the required tools to develop Android applications are freely available and can be downloaded from the Web. Following is the list of software's you will need before you start your Android application programming.

- Java JDK5 or later version
- Android SDK
- Java Runtime Environment (JRE) 6
- Android Studio
- Eclipse IDE for Java Developers (optional)
- Android Development Tools (ADT) Eclipse Plug-in (optional)

Here last two components are optional and if you are working on Windows machine then these components make your life easy while doing Java based application development. So let us have a look how to proceed to set required environment.

5.2 Security Feature

1. This application contains Password protection for both Admin & users.
2. For the threats attack we planned to use web application firewall system, for eg. Dotdefender app firewall.

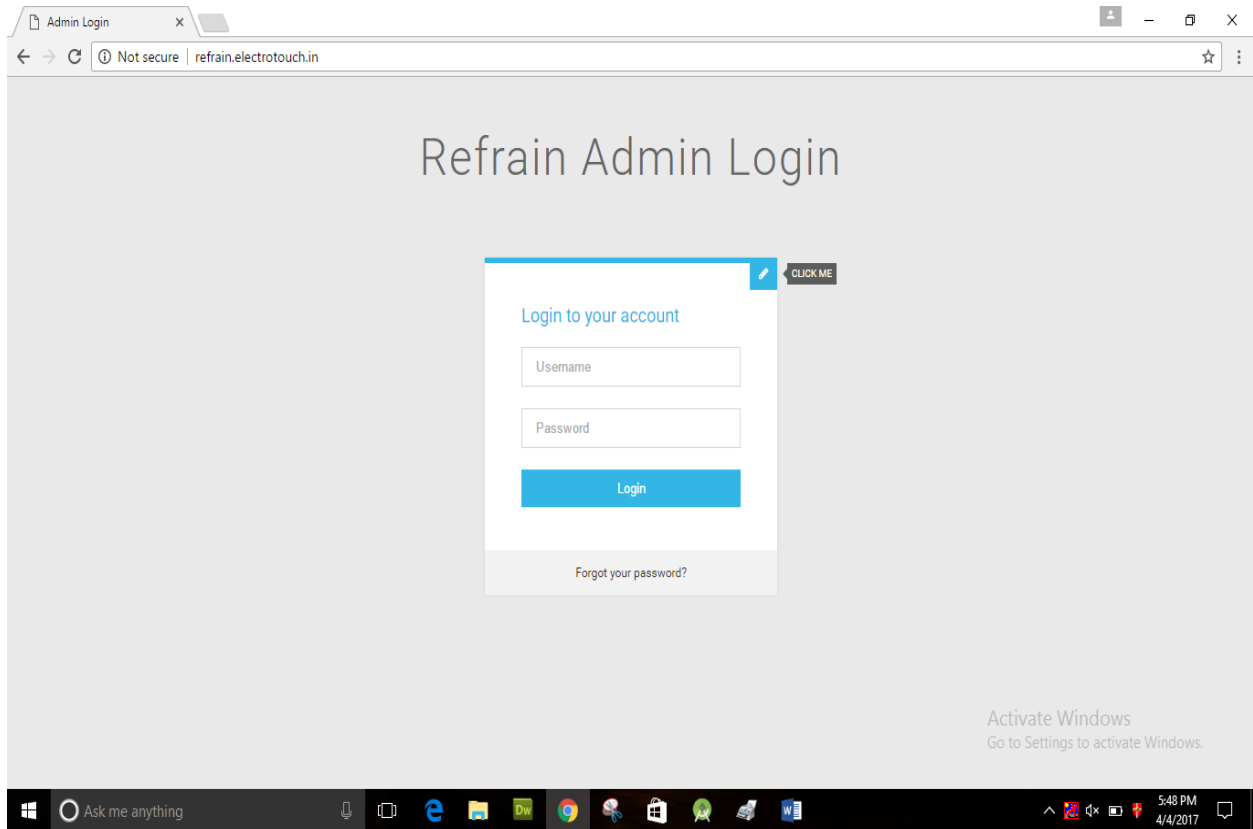
With dotDefender web application firewall we can avoid many different threats to web applications because it inspects your HTTP traffic and checks their packets against rules such as to allow or deny protocols, ports, or IP addresses to stop web applications from being exploited. Architected as plug & play software, dotDefender provides optimal out-of-the-box protection against DoS threats, cross-site scripting, SQL Injection attacks, path traversal and many other web attack techniques.

The reasons dotDefender offers such a effective solution to your web & application security needs are:

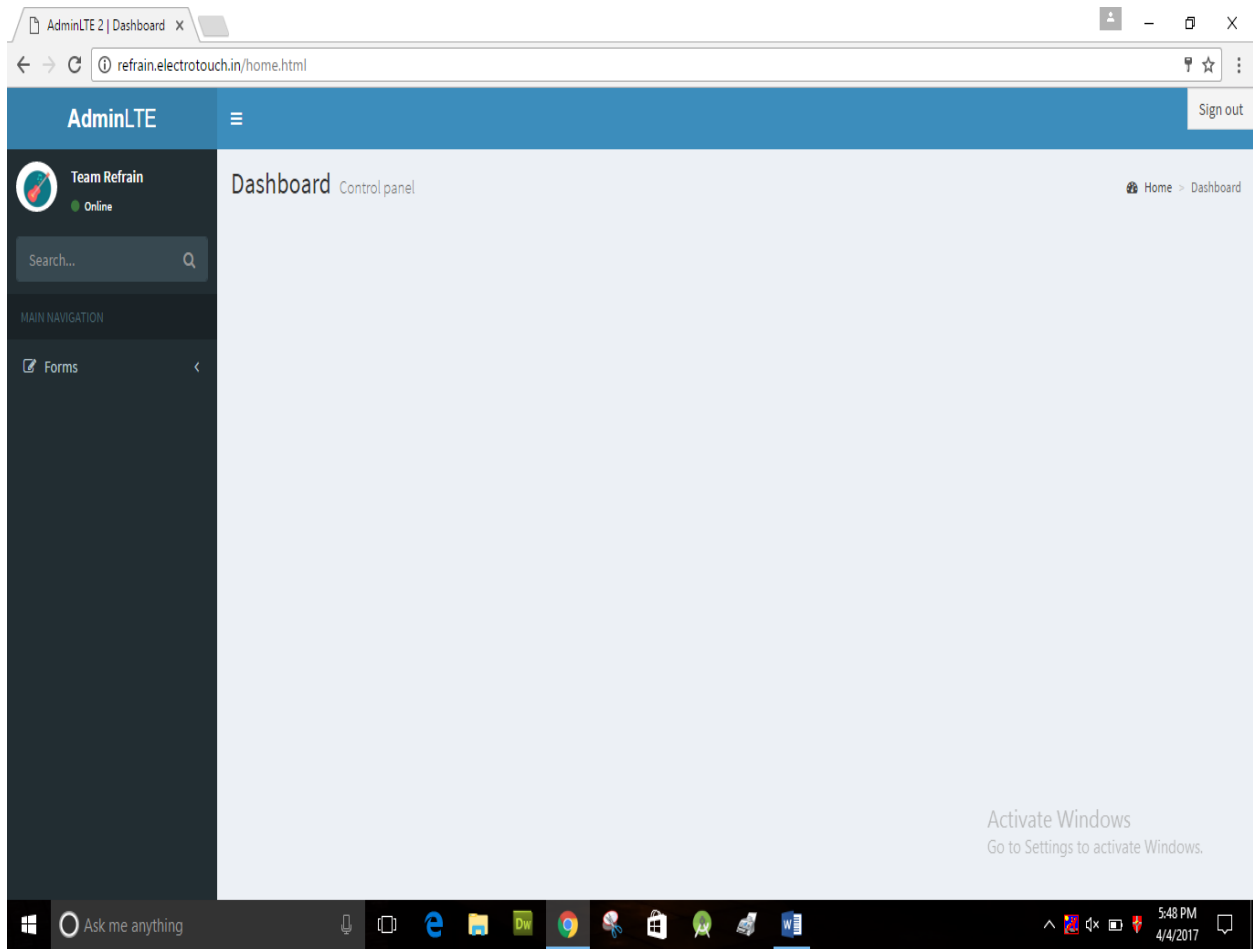
- Easily installation on Apache and IIS servers
- Tough security against identified and new types of hacking attacks
- Best-in-class predefined security rules for real time protection
- Interface and API for managing many servers at a time
- Requires no additional hardware, and easily scales with your web & application

5.3 Screenshots (Admin side) :

- **Admin Login page:**



- **Admin Panel – Home Page:**



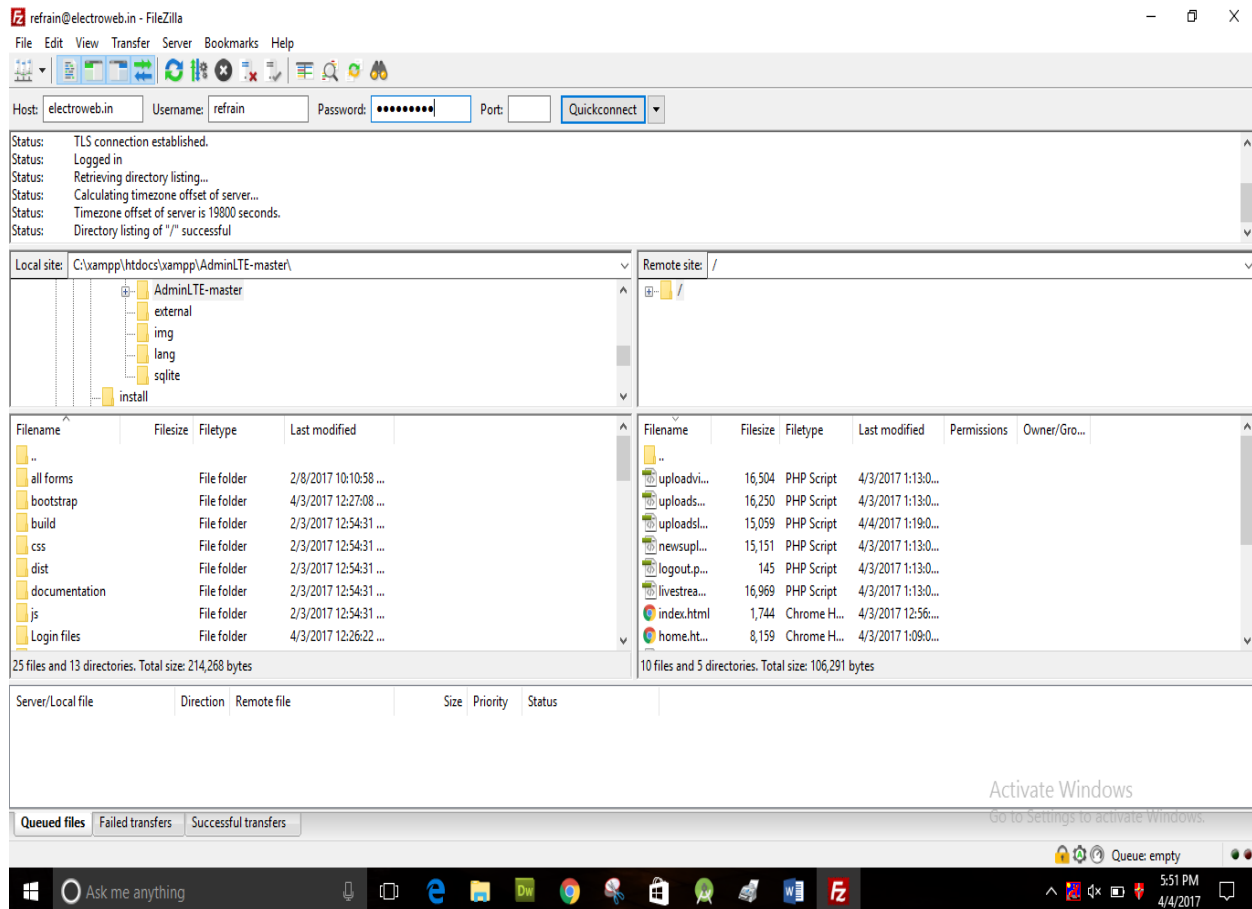
- **Admin Panel- Upload Form:**

The screenshot shows a web browser window with the URL `refrain.electrotouch.in/uploadsong.php`. The page is titled "Upload songs" and features a sidebar with a "Team Refrain" profile and a "Forms" menu. The main content area contains a form with the following fields:

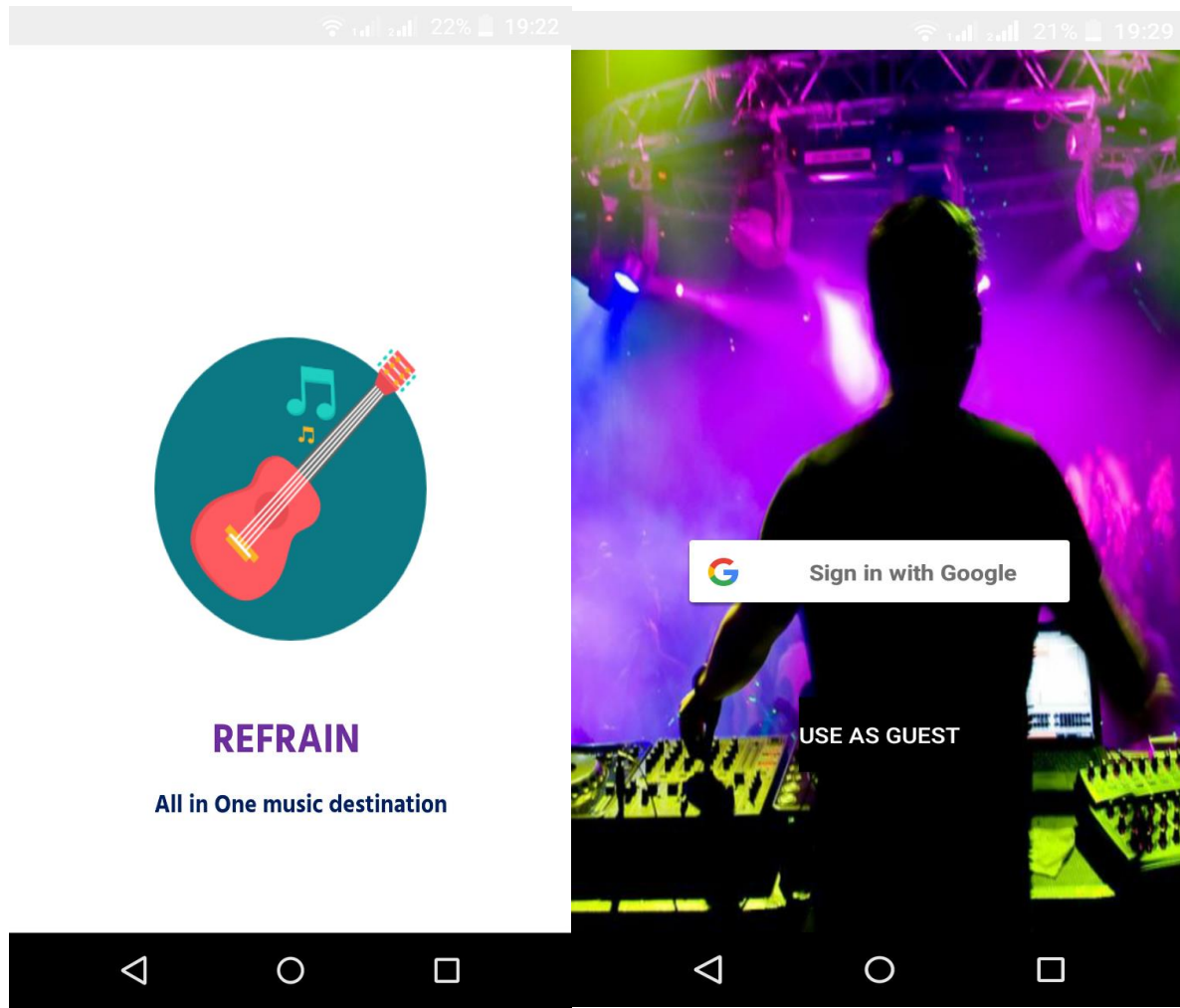
- upload Songs name**: A text input field with the placeholder "name of songs".
- upload path**: A text input field with the placeholder "pathlink".
- category**: A text input field with the placeholder "pathlink".
- artist details**: A text input field with the placeholder "pathlink".
- Movie/Album name**: A text input field with the placeholder "pathlink".
- select song**: A "Choose File" button with the text "No file chosen".
- select banner for song**: A "Choose File" button with the text "No file chosen".
- submit**: A button to submit the form.

An "Activate Windows" watermark is visible in the bottom right corner of the page.

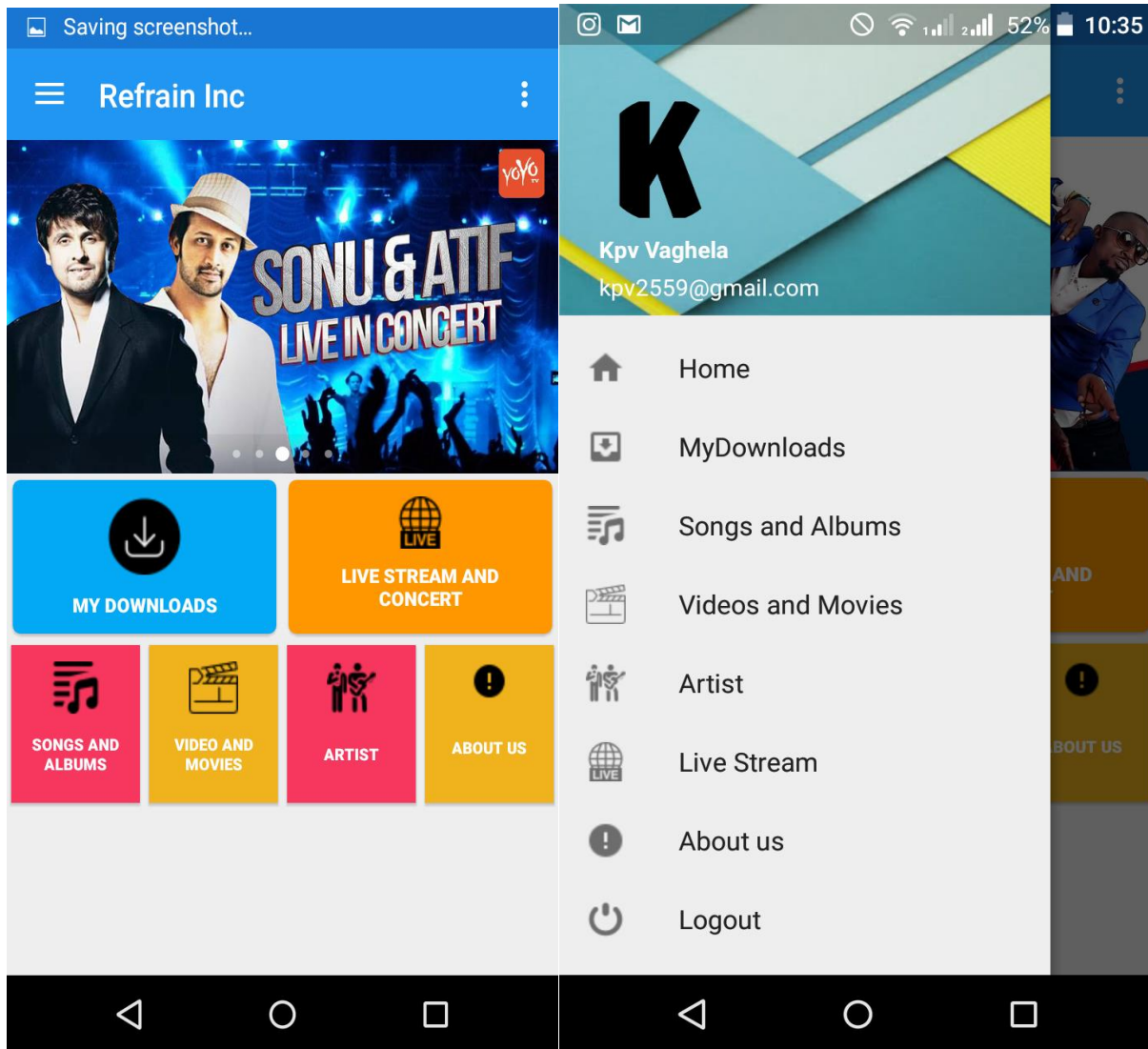
- Admin Side- Filezilla client:



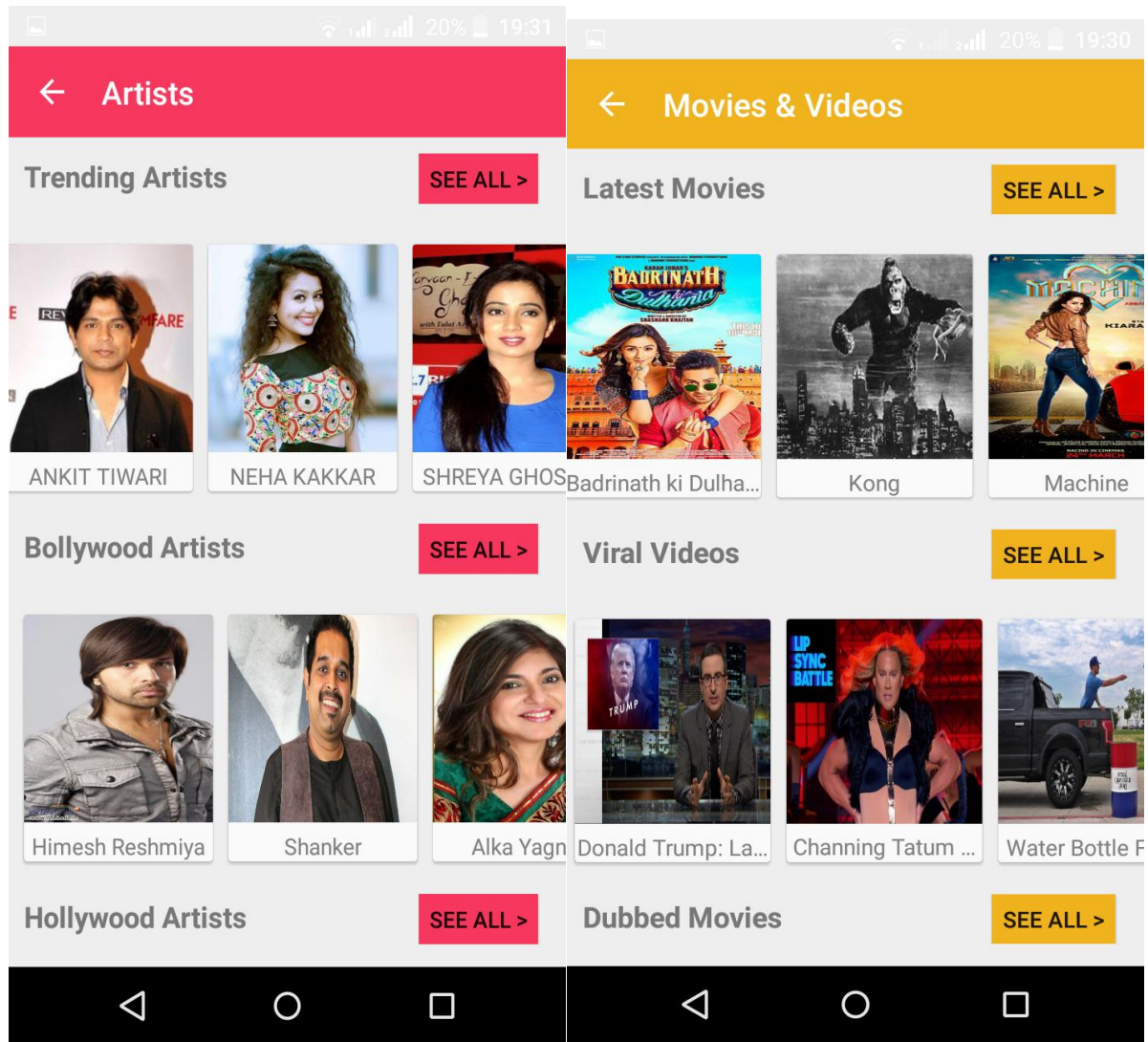
- GUI – Splash screen & Login Screen:



- **GUI - Home Screen:**



- GUI - Content Page:



6. Testing

6.1 Testing:

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design, and coding. Testing represents an interesting anomaly for the software. The testing phase involves testing of the system using various test data. Preparation of test data plays a vital role in system testing. After preparing the test data, the system under study is tested using those test data. If testing is conducted successfully, it uncovers the errors in the software. Secondly, testing demonstrates that software functions appear to be working according to specification and performance requirements appear to have been met. In, addition data collected as testing is conducted provides a good indication of software reliability and some indication of software quality as a whole.

The development of the software systems involves a series of production activities where opportunities for injection of human fallibility are enormous. Errors may begin to occur at very inception of the process where the objectives may be erroneously or imperfectly specified as well as in later design and development stages. Because of human inability to perform and communicate with perfection, software development is followed by a quality assurance activity

6.2 Testing strategy

Before starting any testing activities, the team lead will have to think a lot & arrive at a strategy. This will describe the approach, which is to be adopted for carrying out test activities including the planning activities. This is a formal document regarding the testing area and is prepared at a very early stage in SDLC. This document must provide generic test approach as well as specific details regarding the project.

To be most effective testing should be conducted by an independent third party. By “most effective”, we mean testing that has the highest probability of finding errors (primary objective of testing). The software engineer who created the system is not the best person to conduct all tests for the software. Here, the testing is performed by our project guide and then

it's approved only by him. Finally, the whole system successfully implemented and tested by the users of different departments and application is updated based on suggestion or the bug reported from them.

Test Levels

The test strategy must talk about what are the test levels that will be carried out for the particular project. Unit, Integration & System testing will be carried out in our projects.

Risks and Mitigation

Any risks that will affect the testing process were listed along with the mitigation. By documenting the risks in this document, we could anticipate the occurrence of it well ahead of time and then were able to proactively prevent it from occurring.

Regression Test Approach

When a particular problem is identified, the programs will be debugged and the fix will be done to the program. To make sure that the fix works, the program will be tested again for those criteria. Regression test will make sure that one fix does not create some other problems in that program or in any other interface. So, a set of related test cases may have to be repeated again, to make sure that nothing else is affected by a particular fix.

The following steps summarize our testing strategy approach:

- The content model for the web application is reviewed to uncover errors.
- The interface model is reviewed to ensure that all use-cases can be accommodated.
- The design model is reviewed to uncover navigational errors.
- The user interface is tested to uncover errors in presentation and/or navigation mechanics.
- Selected functional components are unit tested.
- Navigation throughout the architecture is tested.
- Performance tests are conducted.

The web application is tested by a controlled and monitored population of end-users; the results of their interaction with the system are evaluated for content and navigation errors, usability concerns, compatibility concerns, and web application reliability and performance.

6.3 Testing Methods

6.3.1 Unit Testing:

Unit testing focuses verification error on the smallest unit of software design-the software component or module. Using the component level design description as a guide important control paths are tested to uncover errors within the boundary of the module. The relative complexity of test and the errors those tests uncover is limited by the constrained scope established for unit testing. The unit test focuses on the internal processing logic and data structures with the boundaries of component. This type of testing can be conducted in parallel for multiple components.

Exhaustive Unit Testing filters out the defects at an early stage in the Development Life Cycle. It proves to be cost effective and improves Quality of the Software before the smaller pieces are put together to form an application as a whole. Unit Testing should be done sincerely and meticulously, the efforts are paid well in the long run.

This is a typical scenario of Manual Unit Testing activity that we followed:

- A Unit is allocated to a Programmer for programming. Programmer has to use 'Functional Specifications' document as input for his work.
- Programmer prepares 'Program Specifications' for his Unit from the Functional Specifications. Program Specifications describe the programming approach, coding tips for the Unit's coding.
- Using these 'Program specifications' as input, Programmer prepares 'Unit Test Cases' document for that particular Unit. A 'Unit Test Cases Checklist' may be used to check the completeness of Unit Test Cases document.
- The programmer implements some functionality for the system to be developed. The same is tested by referring the unit test cases. While testing that functionality if any defects have

been found, they are recorded using the defect logging tool whichever is applicable. The programmer fixes the bugs found and tests the same for any errors.

6.3.2 Integration Testing:

Integration testing is a systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. The objective is to take unit tested components and build a program structure that has been dictated by design.

6.3.3 System Testing:

System testing concentrates on testing the complete system with a variety of techniques and methods. System Testing comes into picture after the Unit and Integration Tests.

6.3.4 Compatibility Testing

Compatibility testing concentrates on testing whether the given application goes well with third party tools, software or hardware platform.

We have developed a web application. The major compatibility issue is, the web site should work well in various browsers. Similarly when you develop applications on one platform, you need to check if the application works on other operating systems as well. This is the main goal of Compatibility Testing.

6.3.5 Performance Testing

Performance testing of a Web site is basically the process of understanding how the Web application and its operating environment respond at various user load levels. In general, we want to measure the **Response Time**, **Throughput**, and **Utilization** of the Web site while simulating attempts by virtual users to simultaneously access the site. One of the main objectives of performance testing is to maintain a Web site with low response time, high throughput, and low utilization.

6.3.6 Response Time

Response Time is the delay experienced when a request is made to the server and the server's response to the client is received. It is usually measured in units of time, such as seconds

or milliseconds. Generally speaking, Response Time increases as the inverse of unutilized capacity.

6.3.7 Throughput

Throughput refers to the number of client requests processed within a certain time unit. Typically, the unit of measurement is requests per second or pages per second. From a marketing perspective, throughput may also be measured in terms of visitors or page views per day,.

6.3.8 Utilization

Utilization refers to the usage level of different system resources, such as the server's CPU(s), memory, network bandwidth, and so forth. It is usually measured as a percentage of the maximum available level of the specific resource.

6.3.9 Application

Most Web applications are expected to support a wide range of concurrent users, from a dozen to a couple thousand or more. As a result, performance testing has become a critical component in the process of deploying a Web application. It has proven to be most useful in (but not limited to) the following areas:

6.3.10 Capacity planning

It is about being prepared. You need to set the hardware and software requirements of your application so that you'll have sufficient capacity to meet anticipated and unanticipated user load.

The effort of performance testing is addressed in two ways:

- **Load testing:** Load testing is a much used industry term for the effort of performance testing. Here load means the number of users or the traffic for the system. Load testing is defined as the testing to determine whether the system is capable of handling anticipated number of users or not.

- **Stress testing:** Stress testing is another industry term of performance testing. Though load testing & Stress testing are used synonymously for performance-related efforts, their goal is different.

6.3.11 Bug Fixing

Some errors may not occur until the application is under high user load. For Example, memory leaks can exacerbate server or application problems sustaining high load. Performance testing helps to detect and fix such problems before launching the application. It is therefore recommended that developers take an active role in performance testing their applications, especially at different major milestones of the development cycle.

- **Regression Testing**

Regression testing as the name suggests is used to test / check the effect of changes made in the code. Most of the time the testing team is asked to check last minute changes in the code just before making a release to the client, in this situation the testing team needs to check only the affected areas.

- **White Box Testing**

White box testing (clear box testing, glass box testing or structural testing) uses an internal perspective of the system to design test cases based on internal structure. It requires programming skills to identify all paths through the software. The tester chooses test case inputs to exercise paths through the code and determines the appropriate outputs.

While white box testing is applicable at the unit, integration and system levels of the software testing process, it is typically applied to the unit. Though this method of test design can uncover an overwhelming number of test cases, it might not detect unimplemented parts of the specification or missing requirements, but one can be sure that all paths through the test object are executed.

- **Black Box Testing**

Black box testing takes an external perspective of the test object to derive test cases. These tests can be functional or non-functional, though usually functional. The test designer

selects valid and invalid input and determines the correct output. There is no knowledge of the test object's internal structure.

This method of test design is applicable to all levels of software testing: unit, integration, functional testing, system and acceptance. The higher the level, and hence the bigger and more complex the box, the more one is forced to use black box testing to simplify. This method can uncover unimplemented parts of the specification.

- **Alpha testing**

It is simulated or actual operational testing by potential users/customers or an independent test team at the developers' site. Alpha testing is often employed for off-the-shelf software as a form of internal acceptance testing, before the software goes to beta testing

- **Beta testing**

It comes after alpha testing. Versions of the software, known as beta versions, are released to a limited audience outside of the programming team. The software is released to groups of people so that further testing can ensure the product has few faults or bugs.

6.4 Test cases:

It means executing an implementation of software with test data and examining the outputs of the software and its operational behavior to check that it is performing as required. There are different types of tests for verification of software.

6.4.1 Testing:

It is intended to find inconsistencies between a program and its specification. These inconsistencies are usually due to program faults or defects. In order to perform defects test we have generates some test cases. The results of these tests are as following:

Table 6(a) Test Cases Table

Testing For : Login Form			
No	Test Case	Expected Result	Test Result
1	Input invalid Username & Password	Invalid Username or Password	Pass
2	Input valid Username & Password	Login Successful	Pass

Testing For : Upload song Form			
No	Test Case	Expected Result	Test Result
1	Input valid Data	Data added successfully	Pass
2	Input invalid Data	Please Enter Valid Data	Pass
3	New song adding	Added successfully	Pass
4	Mp3 file adding	Added successfully	Pass
5	Banner image uploading	Uploaded successfully	Pass

Testing For : Upload video form			
No	Test Case	Expected Result	Test Result
1	Insert valid data	Data added successfully	Pass
2	Not insert valid data	Please enter the proper valid data	Pass
3	Insert video files	Upload file successfully	Pass
4	Link inserted for movie/video	Link access easily	pass

Testing For : Upload Live Stream Form			
No	Test Case	Expected Result	Test Result
1	Transfer video to server	Data-transferred successfully	Pass
2	Access to link	Link accessed successfully	Pass
3	If all installment completed	All Installment successfully	Pass
4	Actual payment status display	display successfully	Pass
5	Single user have multiple loan select on this page	Create successfully	Pass

Testing For : Event form			
No	Test Case	Expected Result	Test Result
1	Insert valid data	Data added successfully	Pass
2	Not insert valid data	Please enter the proper valid data	Pass
3	Create event	Created successfully	Pass
4	Book number	It's supposed to be unique	Pass

Testing For : Notification Form			
No	Test Case	Expected Result	Test Result
1	Send to user	Sent successfully	Pass
2	Not insert valid data	Please enter the proper valid data	Pass

Testing For : Slider form			
No	Test Case	Expected Result	Test Result
1	Image upload to server	Uploaded successfully	Pass
2	Fetch link to App	Fetches	Pass

Testing For : FTP uploads			
No	Test Case	Expected Result	Test Result
1	Created subdomains & Hosts	Created	Pass
2	Insert proper data	Inserted	Pass
3	Transfer properly	Successfully transfer	Pass

6.5 Technical Troubleshoot:

- **Troubleshooting in Android Device (For User):**

- Ensure you are connected to the internet and that the device is not in Airplane Mode
- Ensure you have downloaded the latest version of Android Software and the latest version of the Refrain App

Once user have confirmed this please:

- Go to Settings on your device Choose Apps
 - Force Stop the Refrain Application
 - Restart your device
 - Try to open a different publication >If it works normally most likely the problem is with the content of the publication, please report this to us including the publication name and issue for us to investigate.
- If you obtain the same results for all publications it may be necessary to reinstall the Refrain App. Please be aware that this will result in having to download all the publications again.
 - Delete the Refrain App
 - Open a File Manager (if you don't have one go to the Google Play Store and search for any File Manager)
 - Reinstall the Refrain App
 - Once installed go to read and login to your account.

This should fix the problem user having.

- **Troubleshooting in Android Developing (For Admin):**

While developing for Android using Unity, we encounter a number of issues. Problems are often related to plug-ins or incorrect Project settings. This section outlines the most common scenarios and relevant troubleshooting advice.

Following are several issues that are often encountered us while App in Developing Mode.

- **Our application crashes immediately after launch.**
- **No Android device found**
- **Failed to re-package resources**
- **Unable to merge Android manifests**
- **Unable to install APK to device**

7. CONCLUSION & FUTURE EXTENSIONS

7.1 Conclusion

The Web Based Music Portal is one step towards increasing productivity and quality of service in Music. The research work the design and implementation music portal environment that could be used to download and upload music. In this research, we implemented a web-based music portal that is loosely coupled .With the implementation of this system; interested persons can download music easily.

7.2 Future Enhancement

On the basis of the work done in dissertation entitled “Refrain-Music android app”, the following conclusions emerge from the development.

- This project will achieve the objective of replacing/augmenting the conventional system of arranging manpower as could be conducted by a typical telecom dept.
- The development of this package will achieve by using Android,php, which is very conducive to develop the package with regard to time and specific need to the user.
- This package will be the highly user friendly, required an optimal minimal input from user while providing highly relevant and focused outputs.
- Fully automated, avoiding human intervention. Hence it will provide a very rapid cost effective alternative to the conventional manual operation/procedures; the visual output will surely more reliable than the audio forms of manual communication.
- The system can further extended as per user and administrative requirements to encompass other aspects of connection management for telecom dept.

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