

# System Requirement Specification

Version 1.0

## Music Based Social Media Platform

“Tune Up”

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# 1.Introduction

## **1.1 Purpose:**

To Develop a fully functional and user interactive social media platform based on music with combined features of both social media as well as digital music services. It gives a unique interaction option based on user's music choice.

## **1.2 Scope:**

This system is a social interaction platform based on the concept of one of the wide interest of people i.e. Music.

This is a unique concept, so there is no existing system present to refer from. Whereas, we have referred two different areas i.e. Music apps (Spotify, Zune, Gaana etc.) and social media apps/website (Facebook, Instagram, Tinder, Skype etc.) and combined their features and concepts to create our application with some additional new features.

*&TUNEUP\$*

Functional Elements:

- **Registration:** - Registration portal for the fresh user. To register, user must use his/her email id and get his/her username and password.
- **Selecting Genres:** - After the registration user must select their genres and their favorite singers, bands, duos.
- **Sociogram:** - Users gets friend suggestions of the people based on the Genre, artists, podcasts interest of that individual and can also chat with them.
- **Podcasts:** - This app also provides podcasts. There are also categories for the podcasts like stories, educational, comedy, music, news & politics, entertainment, games etc. which user can select when they enter the podcast section.
- **Videos:** - There is also a section where user can see the videos of their favorite singers and their covers by some other singers.

- **Non-Prime Members:** - Non-Prime Members can only skip 6 songs per hour and can't skip from one portion to another portion of the song.
- **Premium Member:** - Premium Member can skip as many songs as he/she want. The song quality is quite contrasting between premium and Non premium members and there are no ads. Plus, they can skip to any portion of the song he/she want. He/She can also download the songs.
- **User's Library:** - User can see their favored artists, albums, and their playlists.
- **Search:** - There is search section where you can search your favorite songs albums, singers etc. by manually or by voice search. There are also the suggestions for user's genres.

## Functionalities

Functionalities provided by software are listed in the table with user access

| Sr. No | Functionalities                 | User Access |
|--------|---------------------------------|-------------|
| 1      | Approve Content                 | Adm         |
| 2      | Give Approval                   | Adm         |
| 3      | Rate of Membership              | Adm         |
| 4      | Manage User                     | Adm         |
| 5      | Upload Audio\Video              | P           |
| 6      | Create Group\Band Chat Box      | P           |
| 7      | Download Songs                  | P           |
| 8      | Select Song Quality             | P           |
| 9      | Create Playlist                 | P           |
| 10     | Skip Song limitless             | P           |
| 11     | Access Audio\Video              | P, NP, G    |
| 12     | Add Friend                      | P, NP       |
| 13     | Access Individual User Chat box | P, NP       |
| 14     | Select Genre                    | P, NP       |
| 15     | Give Feedback                   | P, NP, G    |

### Abbreviations Used

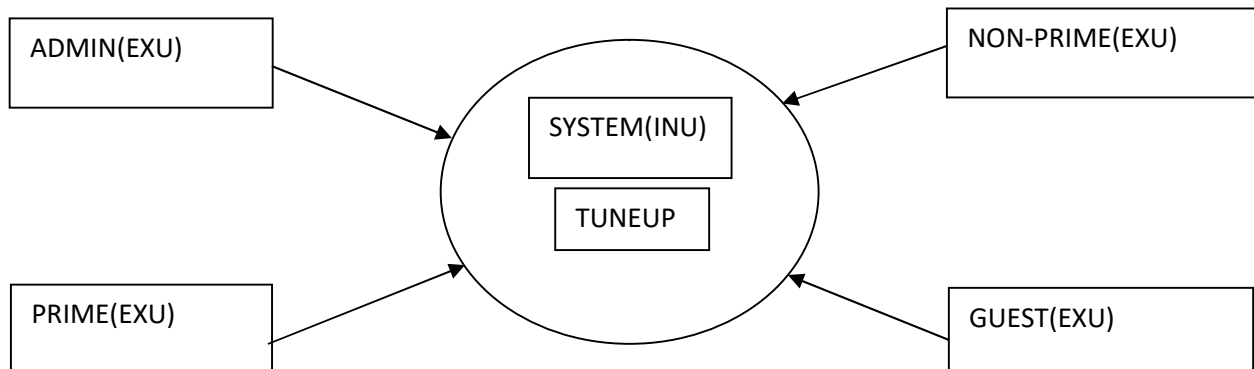
| Symbol | Abbreviations  |
|--------|----------------|
| P      | Prime User     |
| NP     | Non-Prime User |
| G      | Guest          |
| Adm    | Admin          |

# Users

In the System We have 5 User Forming the working Environment of the software and they are:

1. System
2. Admin
3. Registered
  - 3.1 Prime User
  - 3.2 Non-Prime User
4. Guest

User Environment:



| Short Forms | Abbreviations |
|-------------|---------------|
| EXU         | External User |
| INU         | Internal User |

- Guests: - Guests are the visitors for the app where they are can listen to the music and podcasts only for a week.
- Admin: - He/She is the one that decides the rate of the premium membership and approves which song to delete or add on the application.
- End User: - He/She is the one who holds the prime or non-prime membership of the app. He gets access the features which are provided by their selected membership.

#### **1.4 References:**

We have referred to different Social media as well as digital music service platform namely:

Facebook

Instagram

WhatsApp

Spotify

Gaana

Jio Saavan

Zune

#### **1.5 Technologies Used:**

|                          |   |                           |
|--------------------------|---|---------------------------|
| Application Architecture | - | J2EE                      |
| Database Application     | - | DB2                       |
| Development Tool         | - | Rational System Developer |
| Web Deployment Server    | - | WAS                       |
| Designing Tool           | - | Rational                  |

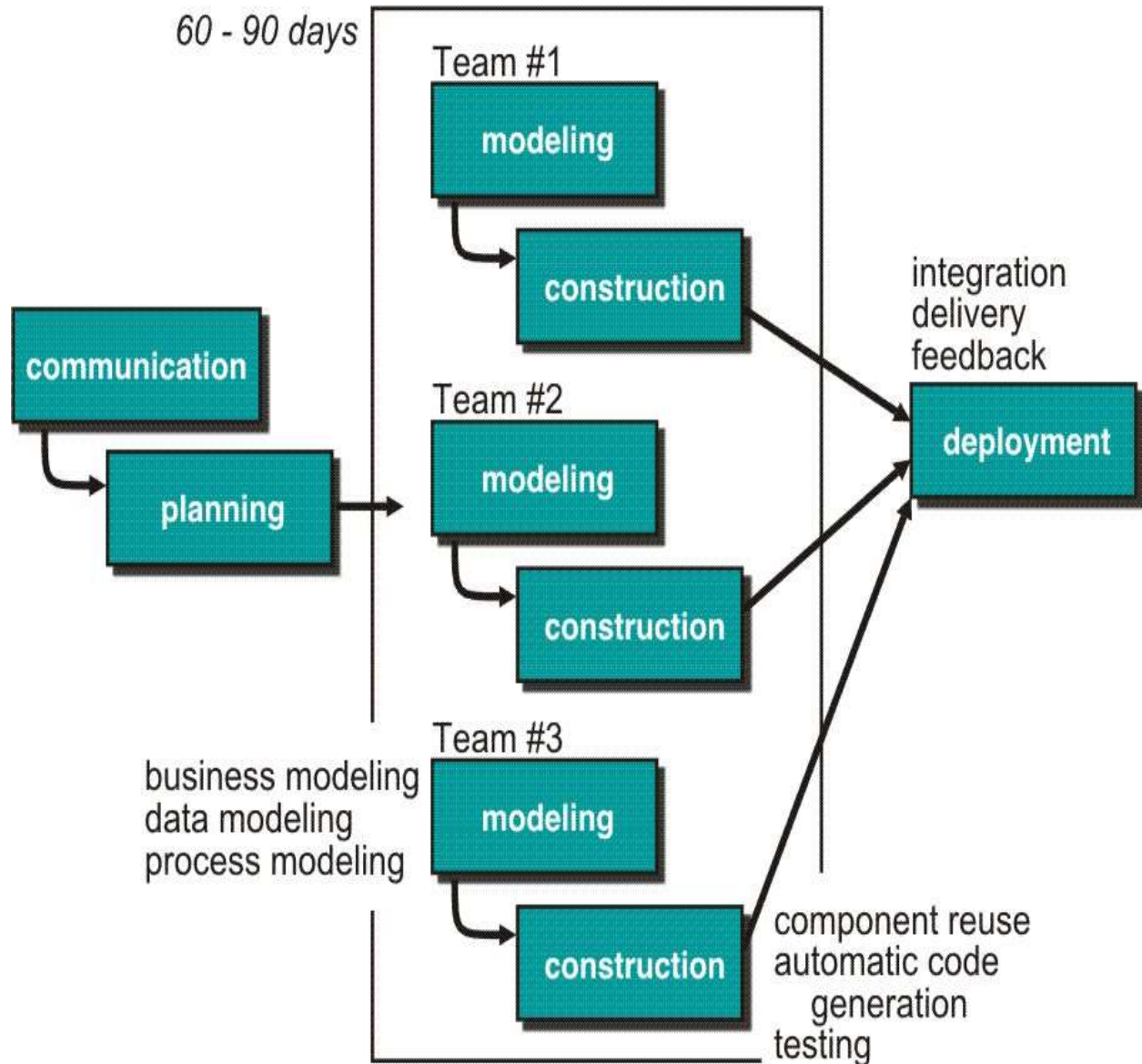
#### **1.6 Minimum System Requirement:**

Ram: 256 MB or Higher

Disk Space: 135MB or Above

### 1.7 Process Model Used

Here we have used RAD application model because our requirements are clear.



The system is divided into 2 modules one is coding & testing and testing & maintenance. The system is first tested as individual and then integrated and tested as a single unit.

## 2.Description

### **2.1 Functionality Description:**

The Functionalities are defined below:

1. Approve Content:

The Admin Checks the content uploaded by the artist and if he\she(admin) thinks that the content is authentic and approvable then gives it a green signal else a red.

2. Give Approval:

The Admin Checks the prime members credentials and accordingly gives it approval to be an artist on this software.

3. Rate of Membership:

The Admin decides the rate of the prime membership along with the validity of membership.

4. Manage User:

The Admin has the authority to delete a user from the software if that particular user action are unexpected or illegal.

5. Upload Audio\Video:

The prime user can upload audio and video, which if gets approved by the admin then they can see their content featuring in the software and that user can act as an individual/band artist.

6. Create Group\Band Chat Box:

The prime user also gets this feature of creating a Group/Band Chat and then add other prime user according to there preference or by the system suggestion which is based on the common interest in genre and can have chat with them, create music, exchange content and can also contact them in group video chat.

7. Download Songs:

The prime user also has the feature to download the song to listen when they are offline.

8. Select Song Quality:

The prime user also has the feature to select the quality of the song from the options 128, 192, 256, 320 kbps which is limited to 128, 192 kbps for non-prime users.



#### 9. Create Playlist:

The prime user also gets the privilege of creating and saving their own multiple playlist in the software with there selected songs according to their mood.

#### 10. Skip Song limitless:

The prime user also gets the functionality of skipping limitless songs without the interruption of ads when they are playing the content online (which is limited to 1 ad after skipping 3 songs) .

#### 11. Access Audio\Video:

This is the common user functionality that they can access the content uploaded on this platform both audio and video

#### 12. Add Friend:

The registered users can add friends according to their preference or by the system suggestions according to their common interest in genre\artist and can socially connect with them on this platform.

#### 13. Access Individual User Chat box:

The registered users can chat with their friends in their individual chat box which is capable of sending\receiving text, audio, image and video etcetera file formats.

#### 14. Select Genre:

The registered users get an option of selecting genre when they register or login for the first time which has vast variety of options from rock and pop to traditional and classical.

#### 15. Give Feedback:

Every user has the option to give feedback about their usage experience of the platform and suggestion which can enhance their experience on the platform.

## **2.2 User Case:**

|                    |  |
|--------------------|--|
| User Case ID       | UC1  |
| User Case Name     | Login  |
| Actor(s)           | Registered User  |
| Pre-Condition      | User must have account in the system with valid credentials (username, password)   |
| Main Scenario      | <ul style="list-style-type: none"><li>• Go to login page.</li><li>• Enter your username/email.</li><li>• Enter your password.</li><li>• System will validate the credentials.</li><li>• If Credentials are valid user is logged into the system.</li></ul> |
| Alternate Scenario | <ul style="list-style-type: none"><li>• Invalid Credentials</li><li>• Website server down</li><li>• User is blocked</li></ul>  |
| Post-Conditions    | The user is redirected to the homepage of tuneup.  |

|                    |   |
|--------------------|---|
| User Case ID       | UC2   |
| User Case Name     | Registration  |
| Actor(s)           | Guest   |
| Pre-Condition      | User must have an email id.   |
| Main Scenario      | <ul style="list-style-type: none"><li>• Go to registration page by clicking on the register link on the login page.</li><li>• Enter a Username.</li><li>• Enter a Password.</li><li>• Enter a valid email id.</li><li>• System validates the user after checking the credentials and sends confirmation mail on the given email id.</li><li>• Once confirmation is received by the system, user and user credentials are added to the register table.</li></ul> |
| Alternate Scenario | <ul style="list-style-type: none"><li>• Invalid Email id.</li><li>• Website server down</li><li>• Username already exists.</li><li>• System mail not received.</li></ul>  |
| Post-Conditions    | The user is successfully registered and redirected to the homepage of tuneup where he/she is by default logged in.  |

|                    |  |
|--------------------|--|
| User Case ID       | UC3  |
| User Case Name     | Feedback   |
| Actor(s)           | Registered user/guest  |
| Pre-Condition      | Must be on the software homepage.  |
| Main Scenario      | <ul style="list-style-type: none"> <li>Click on the feedback option available at the bottom of the homepage.</li> <li>Enter the suggestion in the suggestion box provided.</li> <li>System checks the suggestion entered according to some protocols of filter.</li> <li>System enters the feedback data in the feedback table.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>Session time expired.</li> <li>Server crashes.</li> </ul>   |
| Post-Conditions    | The user is again redirected to the home page with “Successfully feedbacked” message displayed on top.   |

|                    |  |
|--------------------|--|
| User Case ID       | UC4  |
| User Case Name     | Select Genre   |
| Actor(s)           | Registered User  |
| Pre-Condition      | User must be a registered user.  |
| Main Scenario      | <ul style="list-style-type: none"> <li>Click on the genre option in account dropdown menu.</li> <li>Select single/multiple genre.</li> <li>System associates the selected genre with your account data.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>Dropdown animation error.</li> <li>Server crash.</li> </ul>   |
| Post-Conditions    | The user is successfully selected genre and redirected to the homepage of tuneup where he/she will receive suggestions according to the selected genre.  |

|                    |  |
|--------------------|--|
| User Case ID       | UC5  |
| User Case Name     | Play a Song/Video  |
| Actor(s)           | User   |
| Pre-Condition      | User must be on the homepage of the tuneup   |
| Main Scenario      | <ul style="list-style-type: none"> <li>Click on the content to be played</li> <li>System checks the content and plays the content.</li> </ul>                    |
| Alternate Scenario | <ul style="list-style-type: none"> <li>The content is corrupted for some reason.</li> <li>Server crash.</li> <li>Delay in content playing due to ads.</li> </ul> |
| Post-Conditions    | When the user clicks the content tuneup music player is opened and the selected content is been played.  |

|                    |  |
|--------------------|--|
| User Case ID       | UC6  |
| User Case Name     | Create a group chat  |
| Actor(s)           | Prime User   |
| Pre-Condition      | User must be logged in and on the homepage of tuneup.  |
| Main Scenario      | <ul style="list-style-type: none"> <li>Click on the username icon on top right corner to open dropdown menu.</li> <li>Select the Band chat option.</li> <li>System redirects user to the band chat page.</li> <li>Click on the create band chat option on the top left corner of the band chat page.</li> <li>System redirects to band chat details page.</li> <li>Enter the name and icon of the band.</li> <li>System validates the uniqueness of the name and creates the band chat.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>Dropdown animation error.</li> <li>Server crash.</li> <li>Name not unique.</li> <li>Maximum band chat limit exceeded.</li> </ul>  |
| Post-Conditions    | The user is redirected on the created band chat page where he/she can add users by inviting them to chat by sending an invite request.   |

|                    |   |
|--------------------|---|
| User Case ID       | UC7   |
| User Case Name     | Delete a content  |
| Actor(s)           | Admin   |
| Pre-Condition      | Admin must be logged in though admin panel.   |
| Main Scenario      | <ul style="list-style-type: none"> <li>Click on the content.</li> <li>System opens the content page.</li> <li>Search the content to be deleted through search bar on the top.</li> <li>Select the content.</li> <li>Select delete option on the right side of the content.</li> <li>System shows a confirmation message to confirm the delete operation.</li> <li>Select OK button to delete content.</li> <li>System deletes the content from the database.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>Content not found.</li> <li>System crashes in between.</li> <li>Confirmation message session time out.</li> <li>Another Admin logging in concurrently.</li> </ul>  |
| Post-Conditions    | The admin is redirected to the content page with deleted content's name on the top written as "Content Name Deleted".   |

|                    |  |
|--------------------|--|
| User Case ID       | UC8  |
| User Case Name     | Update trial period  |
| Actor(s)           | Admin  |
| Pre-Condition      | Admin must be logged in through admin panel.   |
| Main Scenario      | <ul style="list-style-type: none"> <li>• Admin select the trail period section.</li> <li>• Admin then updates the trial period for the non-prime users.</li> <li>• System updates the trial period.</li> <li>• Admin confirms the changes.</li> <li>• System commits the changes.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>• Dropdown animation error.</li> <li>• Server crash.</li> <li>• Another Admin already logged in.</li> </ul>   |
| Post-Conditions    | The updates are successfully committed by system.  |

|                    |   |
|--------------------|---|
| User Case ID       | UC9   |
| User Case Name     | Download Song   |
| Actor(s)           | Prime User  |
| Pre-Condition      | User must be a prime member and must be logged in.  |
| Main Scenario      | <ul style="list-style-type: none"> <li>• Click on the content for 2 sec.</li> <li>• Dropdown menu will appear on the content.</li> <li>• Select the Download option in it.</li> <li>• System will download that content and store it in download folder for 15 days.</li> <li>• Download Successful message is been displayed by system.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>• Dropdown animation error.</li> <li>• Server crash.</li> <li>• Content is not available for offline.</li> <li>• Download failed due to some reasons.</li> </ul>   |
| Post-Conditions    | The user is redirected to download folder where the content downloaded are listed.  |

|                    |  |
|--------------------|--|
| User Case ID       | UC10   |
| User Case Name     | Select Song Quality  |
| Actor(s)           | All User   |
| Pre-Condition      | User must have selected a song.  |
| Main Scenario      | <ul style="list-style-type: none"> <li>Click on the song for 2 second.</li> <li>Dropdown menu will appear on the song.</li> <li>Select the quality option in it.</li> <li>Select Song quality (Non-prime: 128, 192 kbps; Prime: 128, 192, 256, 320 kbps).</li> <li>System will play the song in selected quality.</li> </ul> |
| Alternate Scenario | <ul style="list-style-type: none"> <li>Dropdown animation error.</li> <li>Server crash.</li> <li>Song is not available in the selected quality.</li> <li>Song cannot be played as the song is been deleted at the same time by the admin.</li> <li>Song play is interrupted due to advertisement.</li> </ul>                 |
| Post-Conditions    | The user will experience the song been played in the selected quality though music player of tuneup.   |

### **2.3 Data Dictionary:**

#### **USER TABLE**

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| Registered User    | Boolean         | Not Null           |
| User ID            | Varchar         | Primary Key        |
| Username           | Varchar         | Not Null           |

#### **REGISTER TABLE**

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| User ID            | Varchar         | Foreign Key        |
| Email ID           | Varchar         | Primary Key        |
| Username           | Varchar         | Unique Key         |
| Artist             | Boolean         | Not Null           |
| Prime User         | Boolean         | Not Null           |
| Selected Genre     | Varchar         | Not Null           |
| Selected Artist    | Varchar         | Not Null           |
| Password           | Varchar         | Not Null           |

ARTIST TABLE

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| User ID            | Varchar         | Foreign Key        |
| Artist Name        | Varchar         | Unique Key         |
| Songs Uploaded     | Number          | Not Null           |
| Artist ID          | Varchar         | Primary Key        |

TIME DURATION TABLE (MEMBERSHIP)

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| User ID            | Varchar         | Foreign Key        |
| From               | Date            | Not Null           |
| To                 | Date            | Not Null           |

SONG DETAIL TABLE

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| Song Name          | Varchar         | Not Null           |
| Artist Name        | Varchar         | Unique Key         |
| Song Duration      | Time            | Not Null           |
| Album              | Boolean         | Not Null           |
| Song ID            | Varchar         | Primary Key        |
| Genre              | Char            | Not Null           |
| Artist ID          | Varchar         | Foreign Key        |

ALBUM TABLE

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| Album Name         | Char            | Primary Key        |
| Songs              | Number          | Not Null           |
| Artist Name        | Varchar         | Not Null           |
| Total Duration     | Time            | Not Null           |
| Album ID           | Varchar         | Foreign Key        |

BAND TABLE

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| Band Name          | Varchar         | Not Null           |
| Members            | Number          | Not Null           |
| User ID            | Varchar         | Foreign Key        |
| Band ID            | Varchar         | Primary Key        |

GENRE TABLE

| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| Genre Name         | Varchar         | Primary Key        |
| No. of Artists     | Number          | Not Null           |
| No. of Songs       | Number          | Not Null           |

FEEDBACK TABLE

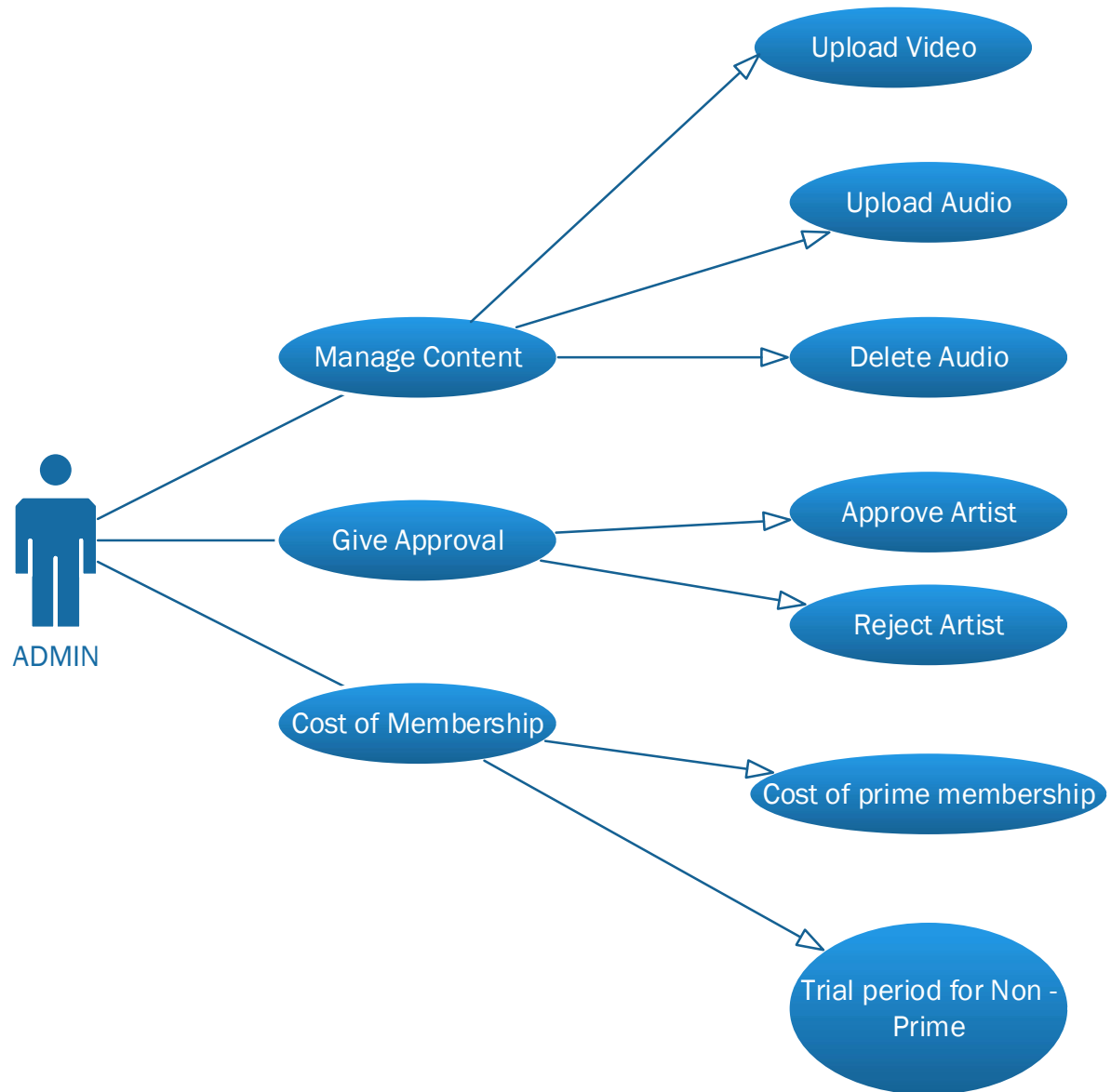
| <u>Column Name</u> | <u>Datatype</u> | <u>Constraints</u> |
|--------------------|-----------------|--------------------|
| Feedback Number    | Number          | Primary Key        |
| Suggestion         | Varchar (100)   | Not Null           |



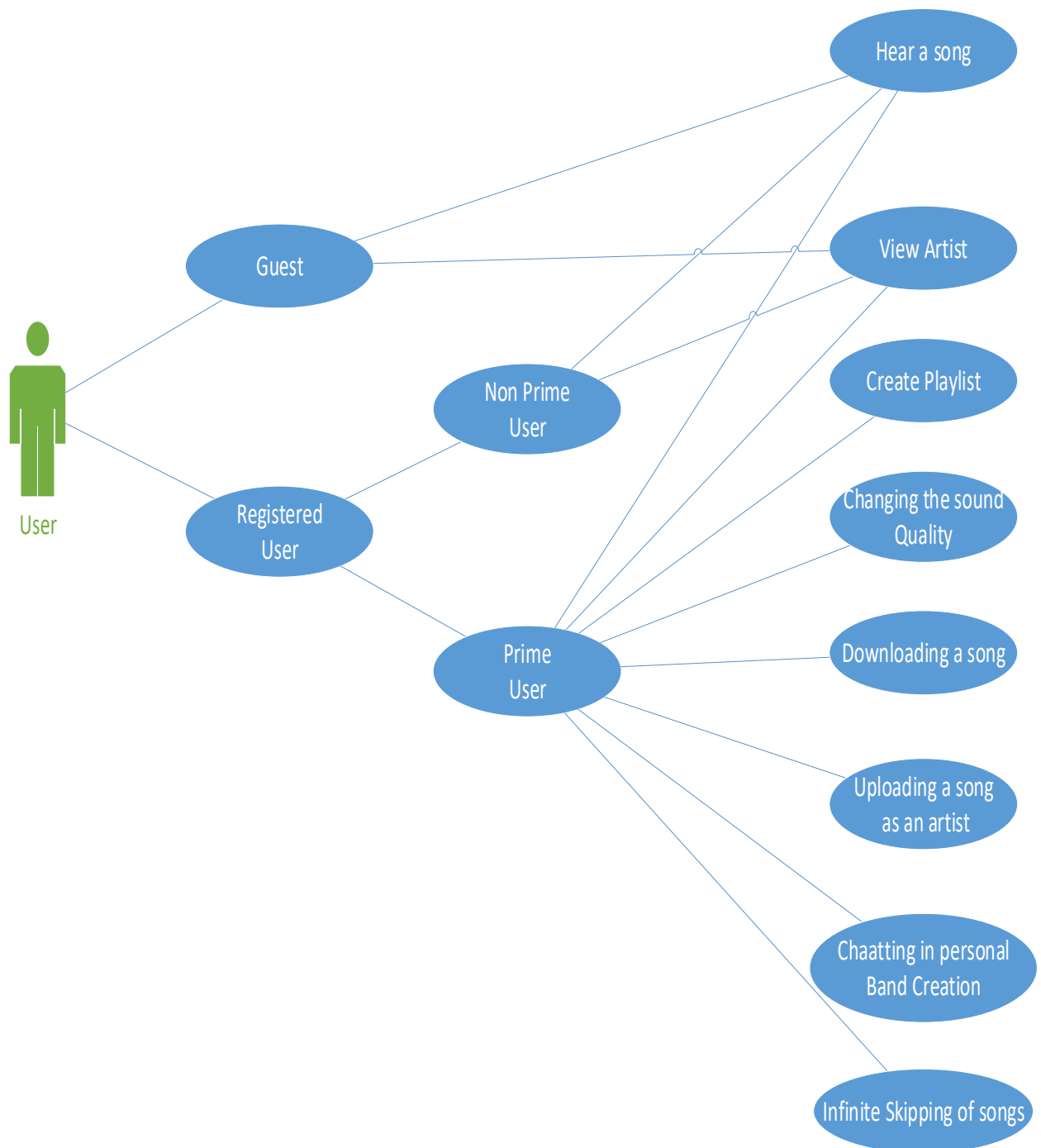
## 3.Design Phase

### 3.1 Use case diagram

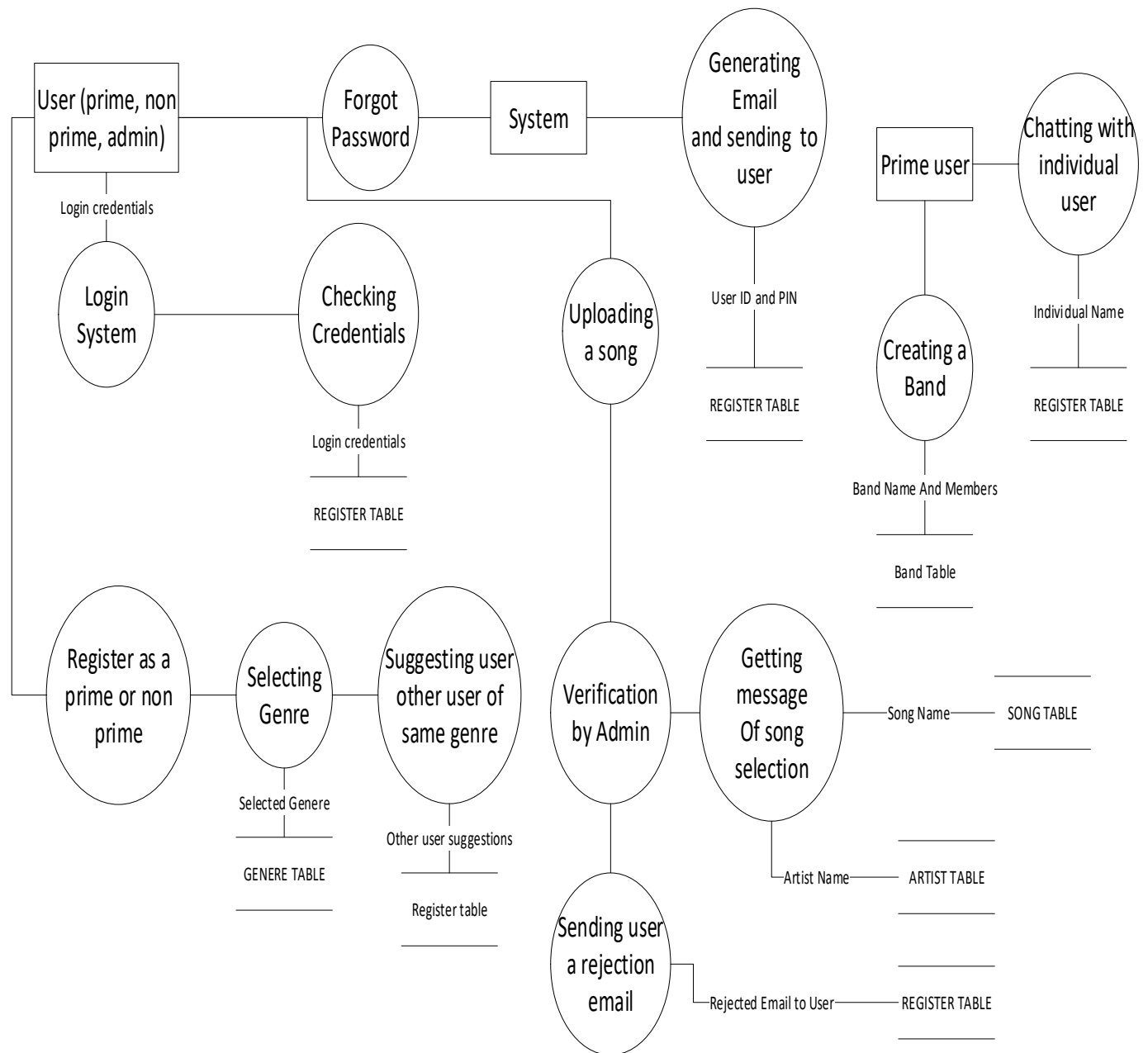
Admin Use case:



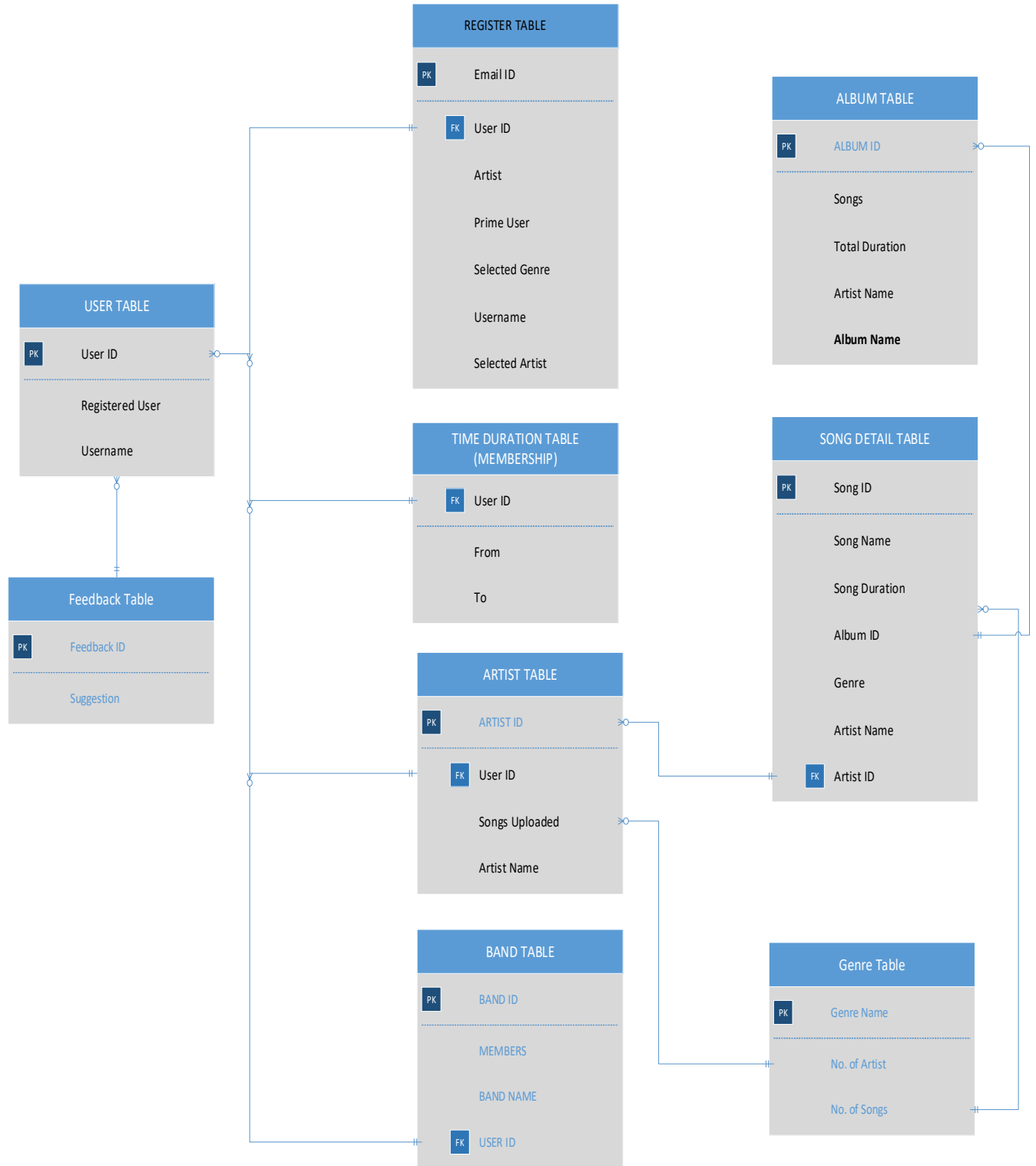
Normal Use case:



Level 1:

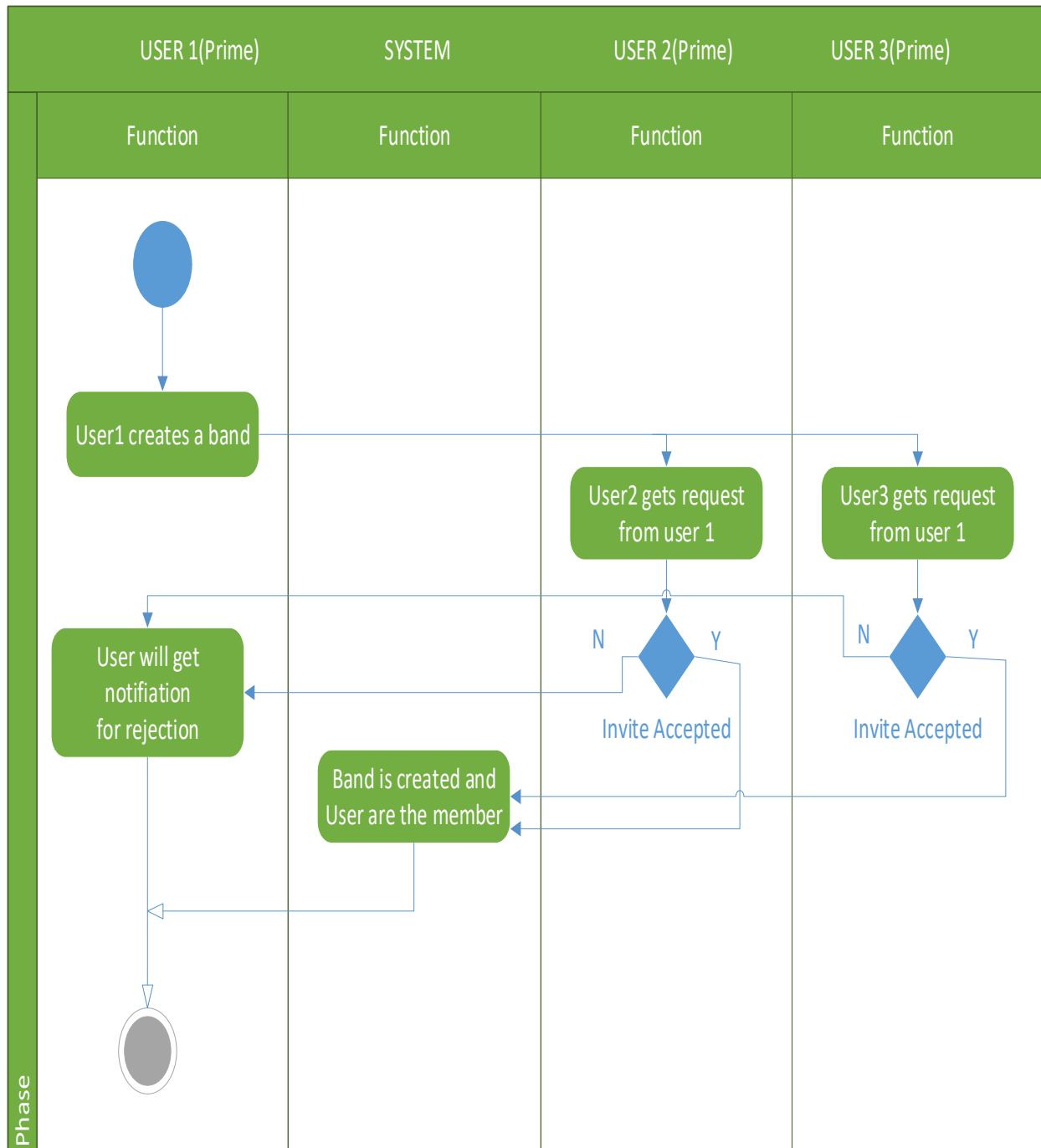


### 3.3 ER Diagram:

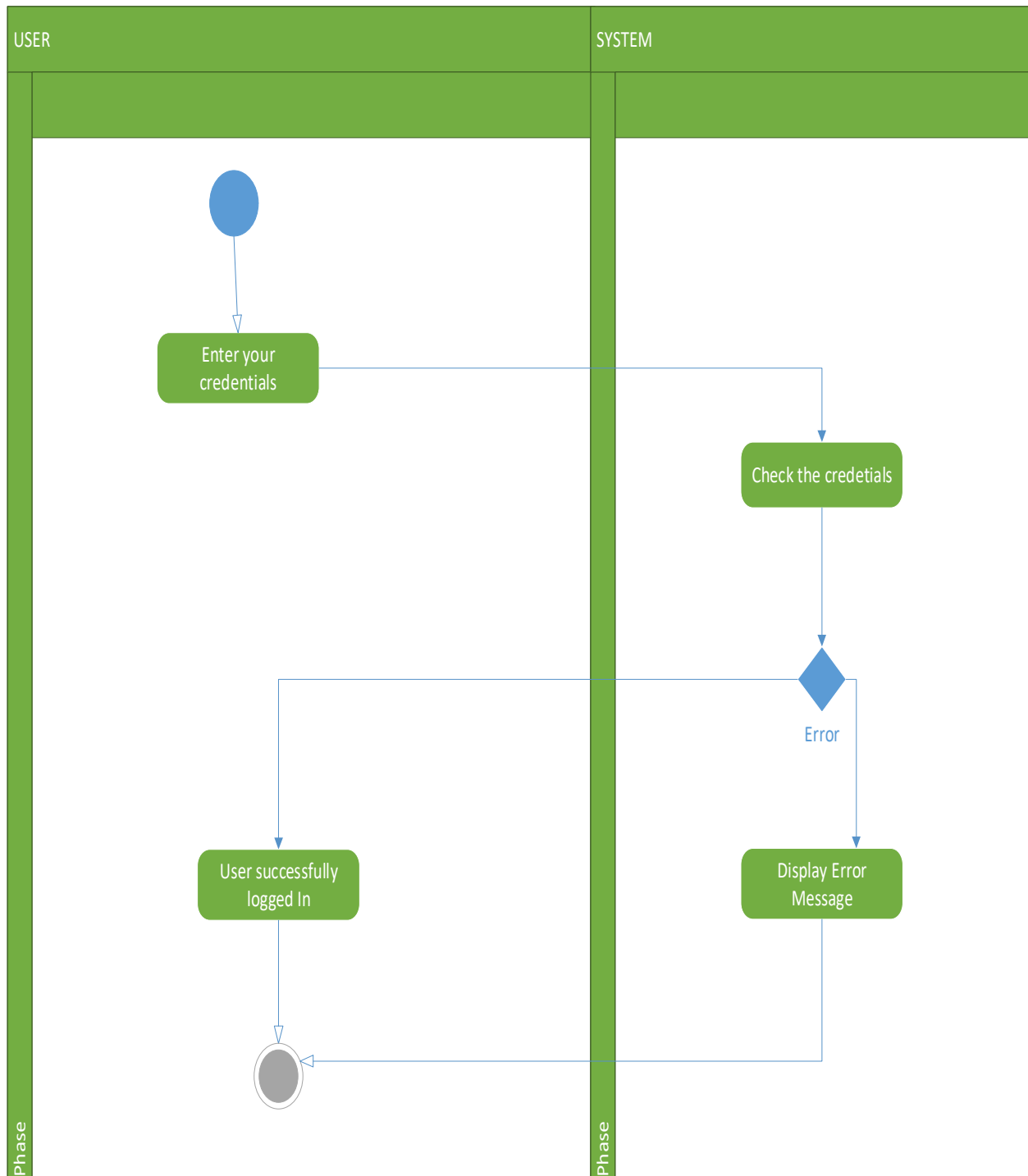


### 3.4 Activity Diagrams:

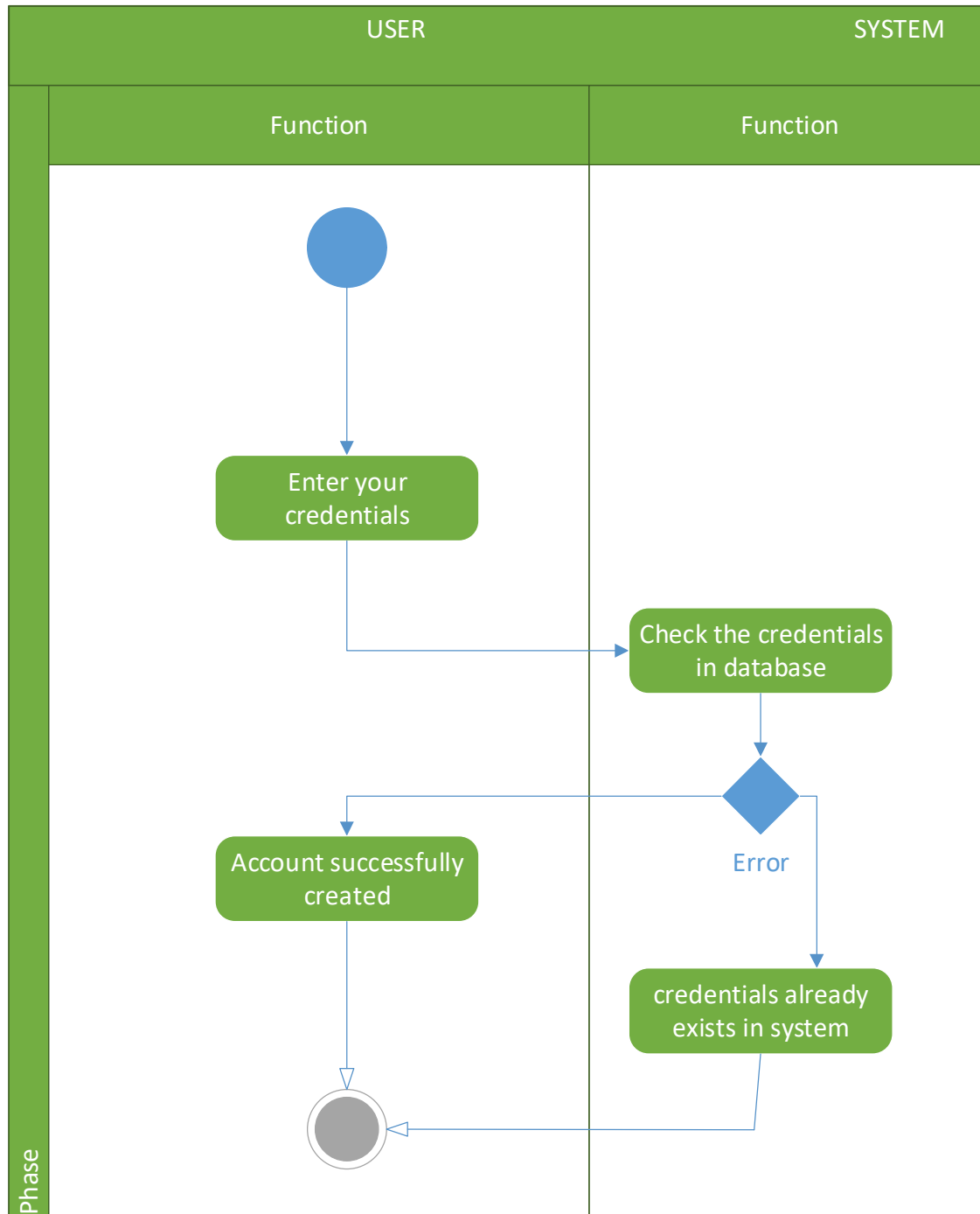
#### Band Chat



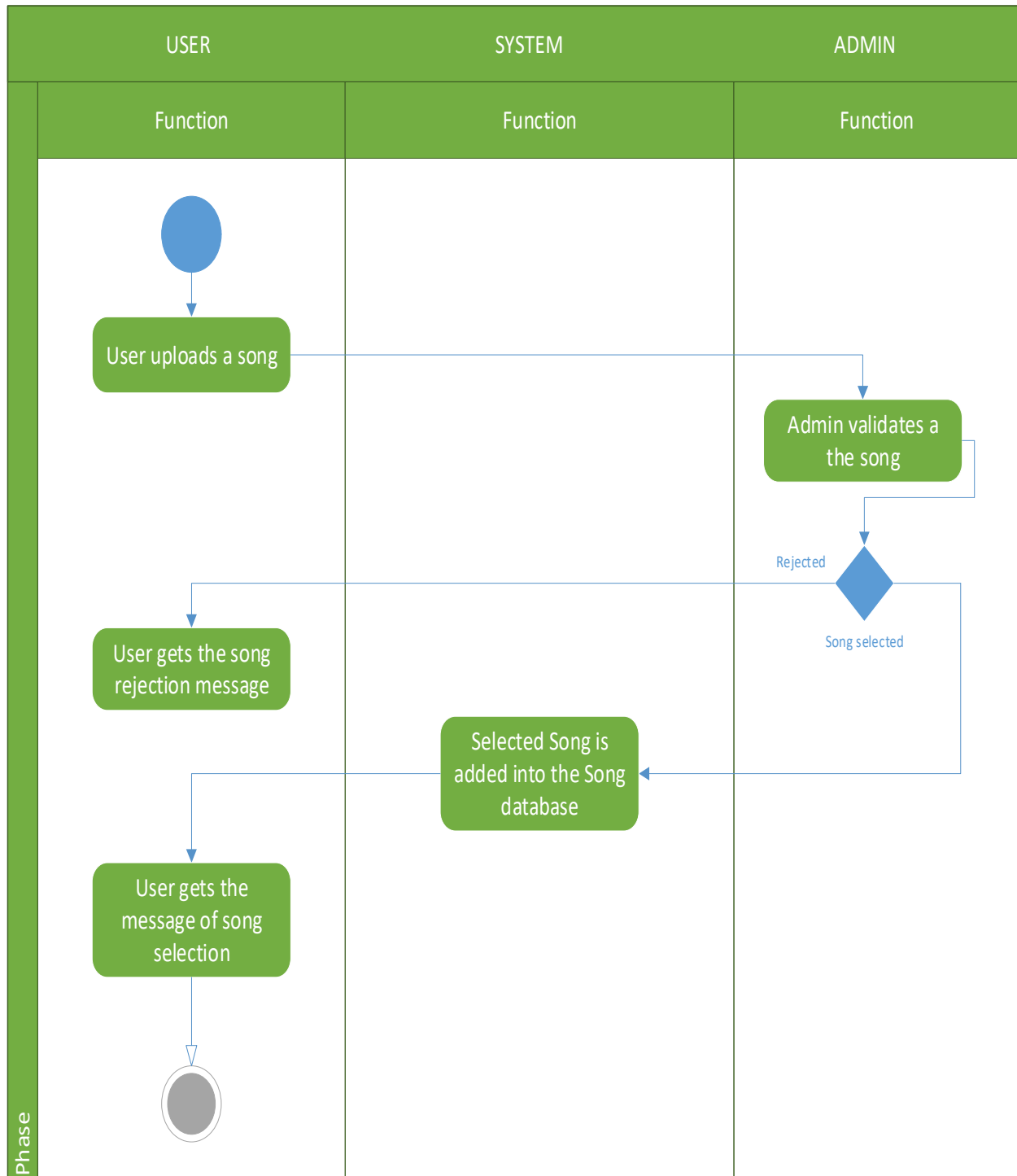
## Login



## Registration

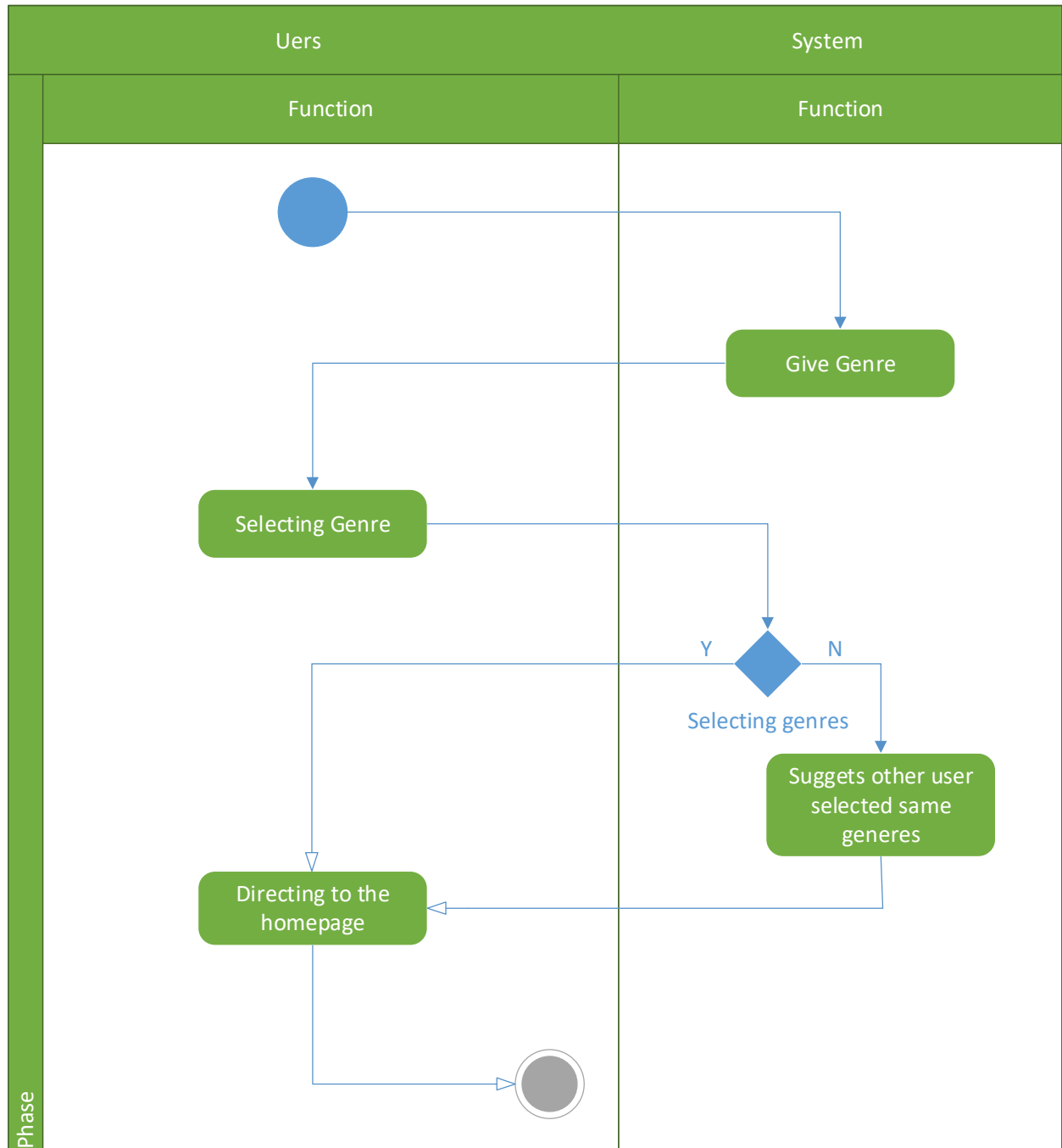


## Uploading Song:





## Selecting Genre:



## 4.Coding and Testing Phase

### **4.1 Test Case:**

| Test Case ID: TC01<br>Test Case: Registration |   |                              |               |               |
|---|---|------------------------------|---------------|---------------|
| Test Case ID                                  | Test Condition  | Required Output              | Actual Output | Result (P, F) |
| TC01_1  | Click on the register button without entering username, password, email id. | User must not be Registered. |               |               |
| TC01_2  | Click on the register button without entering username.                     | User must not be Registered. |               |               |
| TC01_3  | Click on the register button without entering password.                     | User must not be Registered. |               |               |
| TC01_4  | Click on the registration button after entering the details correctly.      | User must be registered.     |               |               |

| Test Case ID: TC02<br>Test Case: Login |  |                             |               |               |
|--|--|-----------------------------|---------------|---------------|
| Test Case ID                           | Test Condition   | Required Output             | Actual Output | Result (P, F) |
| TC02_1                                 | Click on the Login button without entering username, password. | User must not be Logged in. |               |               |
| TC02_2                                 | Click on the Login button with invalid username or password.   | User must not be Logged in. |               |               |
| TC02_3                                 | Click on the Login button with valid username and              | User get logged In.         |               |               |

|  |           |  |  |  |
|--|-----------|--|--|--|
|  | password. |  |  |  |
|--|-----------|--|--|--|

| Test Case ID: TC03<br>Test Case: Select Genre |  |  |               |               |
|---|--|--|---------------|---------------|
| Test Case ID                                  | Test Condition                             | Required Output  | Actual Output | Result (P, F) |
| TC03_1  | Click on next without selecting any genre. | No genre selected.   |               |               |
| TC03_2  | Click on next after selecting genre.       | Changes are committed by system and trial period is updated. |               |               |

| Test Case ID: TC04<br>Test Case: Select song Quality |  |  |               |               |
|--|--|--|---------------|---------------|
| Test Case ID   | Test Condition                                   | Required Output  | Actual Output | Result (P, F) |
| TC04_1   | Click on the song without selecting the quality. | System will select the by default quality according to user type.        |               |               |
| TC04_2   | Click on the song and change the quality.        | Changes are committed by system and song is played in specified quality. |               |               |

| Test Case ID: TC05<br>Test Case: Delete a content |   |                                   |               |               |
|---|---|-----------------------------------|---------------|---------------|
| Test Case ID                                      | Test Condition  | Required Output                   | Actual Output | Result (P, F) |
| TC05_1  | Click on the delete button without selecting the content. | Delete operation are not applied. |               |               |

|        |   |  |  |  |
|--------|---|--|--|--|
| TC05_2 | Click on the delete button after selecting the content. | Delete operation is performed and system updates the content database. |  |  |
|--------|---|--|--|--|

| Test Case ID: TC06<br>Test Case: Update trial period |   |  |               |               |
|--|---|--|---------------|---------------|
| Test Case ID   | Test Condition  | Required Output  | Actual Output | Result (P, F) |
| TC06_1   | Click on the update button without entering new trial period value. | Changes are not applied.                                     |               |               |
| TC06_2   | Click on the Login button with invalid username or password.        | Changes are committed by system and trial period is updated. |               |               |

| Test Case ID: TC07<br>Test Case: Update trial period |   |  |               |               |
|--|---|--|---------------|---------------|
| Test Case ID   | Test Condition  | Required Output  | Actual Output | Result (P, F) |
| TC07_1   | Click on the update button without entering new trial period value. | Changes are not applied.                                     |               |               |
| TC07_2   | Click on the Login button with invalid username or password.        | Changes are committed by system and trial period is updated. |               |               |

| Test Case ID: TC08<br>Test Case: Feedback |   |  |               |               |
|---|---|--|---------------|---------------|
| Test Case ID                              | Test Condition  | Required Output  | Actual Output | Result (P, F) |
| TC08_1                                    | Click on the upload button without entering a suggestion. | Nothing is uploaded.                                       |               |               |
| TC08_2                                    | Click on the upload button after entering a suggestion.   | Suggestion are uploaded and committed to feedback database |               |               |

Test Case ID: TC09

Test Case: Add content

| Test Case ID | Test Condition                                       | Required Output  | Actual Output | Result (P, F) |
|--------------|--|--|---------------|---------------|
| TC09_1       | Click on the add button without uploading content.   | Nothing is added in the content database.                                  |               |               |
| TC09_2       | Click on the add button after uploading the content. | Content is added to the content database by the system and then committed. |               |               |

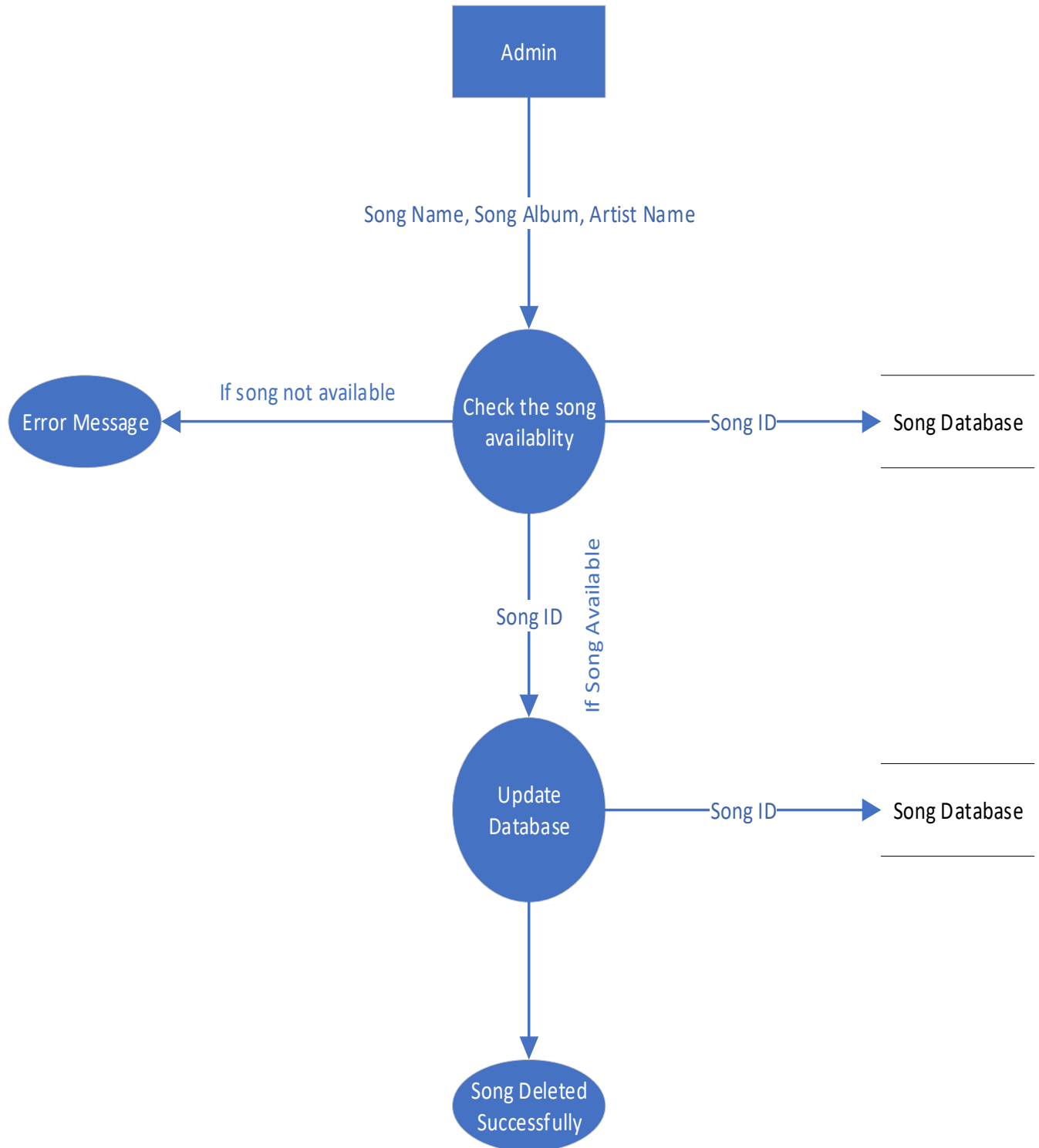
## 5. Scheduling Phase

### 5.1 Gantt Chart:

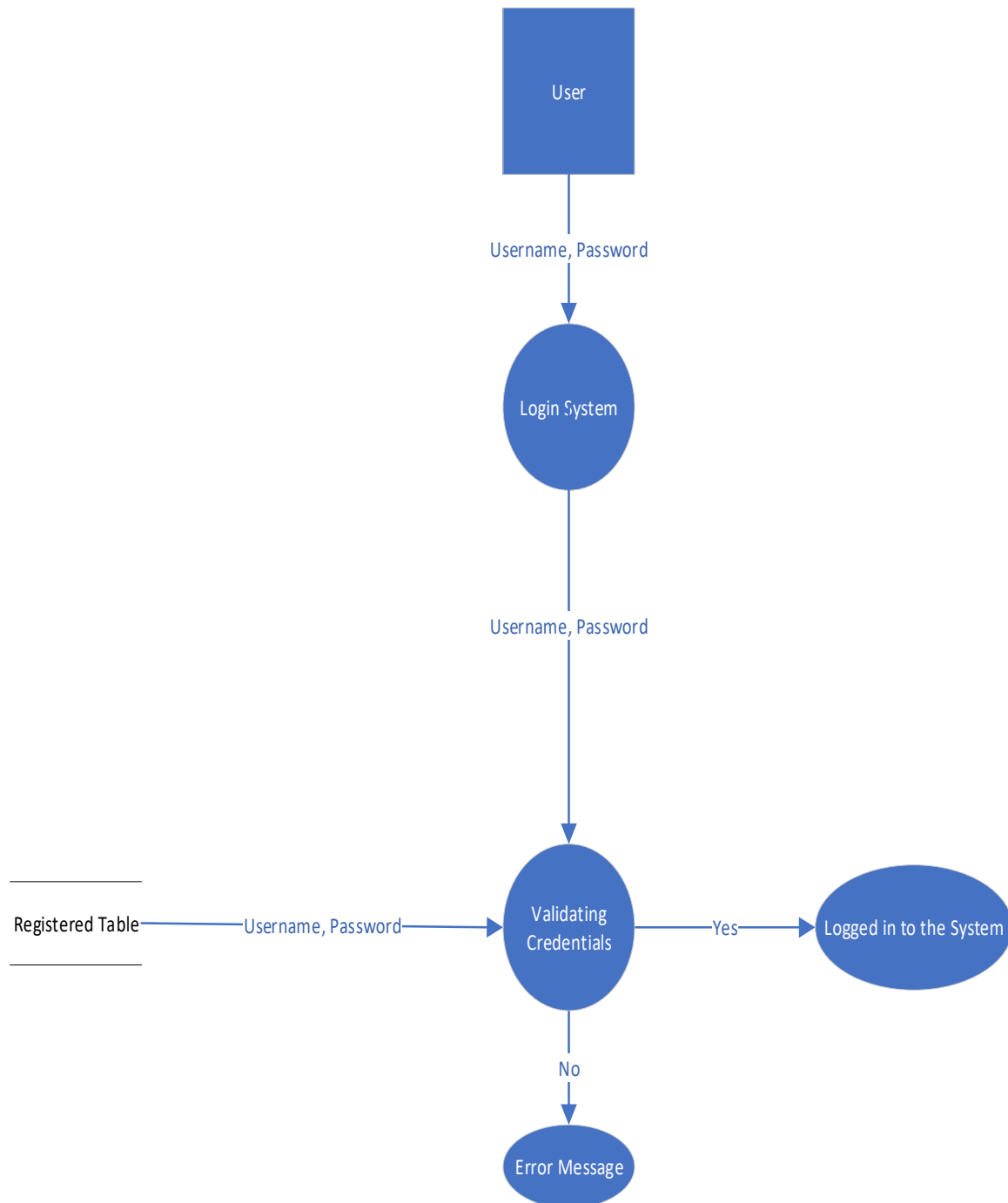


## LEVEL 2 DFD:

### Deletion of a Song:



## Login:



## Artist Approval:

