



Daffodil
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Online Bangla Music Suggester

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A project report submitted in partial fulfillment of the requirement for the degree
of Bachelor of Science in Software Engineering

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APPROVAL

This **Project** titled “**Online Bangla Music Suggester**”, submitted by **Owahidul Islam Roman**, **ID: 151-35-986** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc in Software Engineering and approved as to its style and contents.

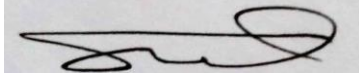
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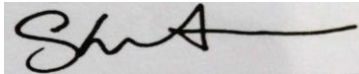
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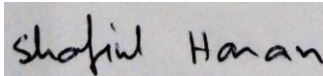
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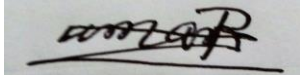


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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Kaushik Sarker, Assistant Professor & Associate Head, Department of Software Engineering, and Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.



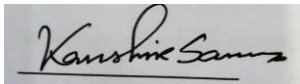
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Chapter 1: Introduction

1.1 Project Overview

This is a web-based application. This application is all about related to bangle songs which are going to suggest songs to a user based on user choice. Users can also search songs more specifically. There are some kinds of field that will help users to find songs more specifically. Users can also create an online playlist for that user have to be an authenticated user and should be in logged in form. Let it clear once again, there are two types of users, one is general user who can just search songs, listen songs but cannot create an online playlist. For that users must be an authenticated user, after he/she can create online playlist. And system will recommend songs based on user choice.

1.2 Project purpose

The purpose behind the application is to make a connection between people who are loves to listen Bengali music. And other thing is, this site will suggest songs for user by based on his/her choice, for that users can listen to music based on their choice. And they can also make an online playlist.

1.3 Project Schedule

The project schedule is the tool that communicates what work needs to be performed, which resources of the organization will perform the work and the timeframes in which that work needs to be performed. The project schedule should reflect all the work associated with delivering the project on time.

The next page will show the Gantt chart of this project.

1.3.1 Gantt Chart

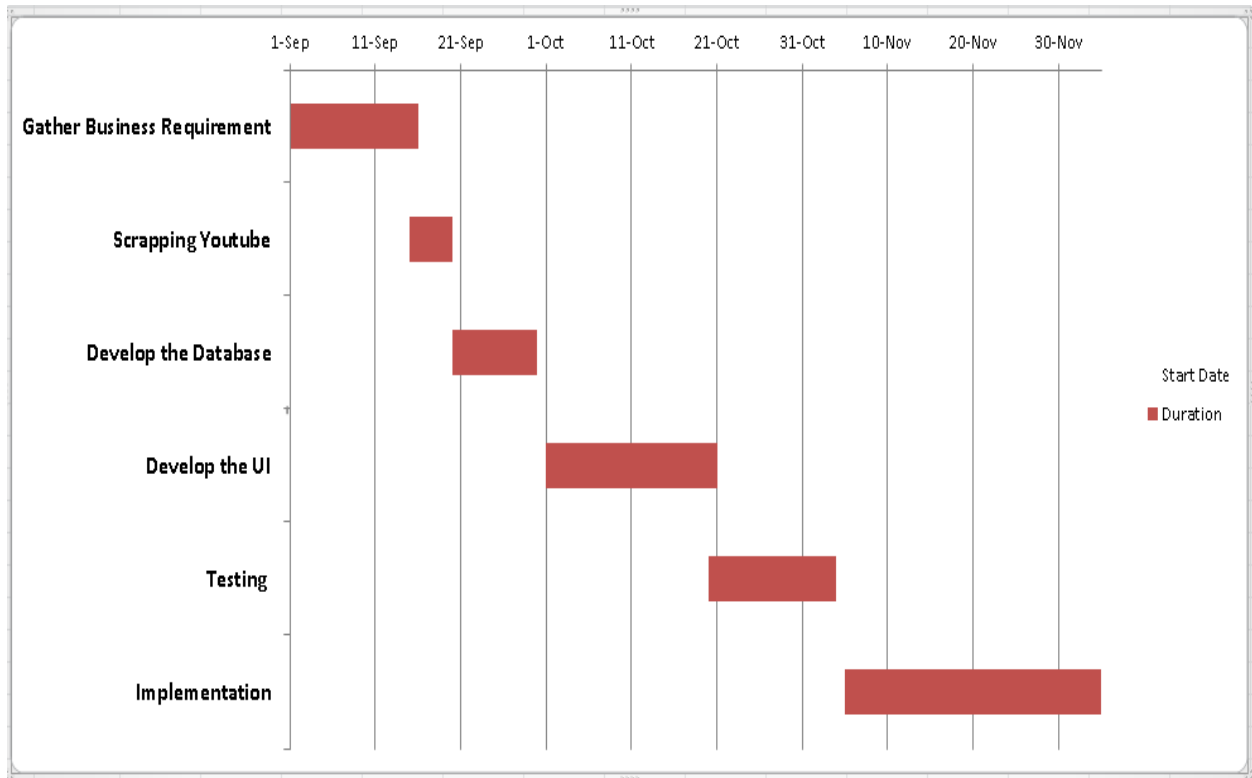


Fig: 1.1 Gantt chart

Chapter 2: Software Requirement Specification

2.1 Introduction

2.1.1 Category:

2.1.2 Project Scope

Basically, this is a Bengali songs related site that's why this site is only make a relation those peoples who loves to listen Bengali music. They can only search Bengali song based on some category. If they search other kinds of songs like Hindi, English or anything else, they cannot find. And one other important thing is, If the user wants to create a playlist, He/she should be an authenticated user of this site, otherwise they can't. Overall, they can't make an any action which is not related to this site.

2.1.3 Existing System

There are many existing systems or sites which are related to music's like YouTube, SoundCloud etc. Those sites are working with various kinds of music's and other things. For example, in YouTube you searched a bangle song, it will bring that song for you and show you other songs, as well as movies, drama's etc. This is inappropriate for those users who are wanted to listening just Bengali songs. There is no such site which is just working on Bengali related songs and suggests songs for user based on their choice.

2.1.4 Proposed System

As was described before, this site will work only for Bengali related songs. It will also divide all songs as various platform based on songs category. Assume that, all Rabindra Sangit's are going to be a category named Rabindra Sangit, Nazrul Geeti's are going to be a category named Nazrul Geeti. And, all songs will categories by their artist name, release date etc. User of this site can search song based on those categories. After site will reading those search input and keep doing it few more times and based on their search, site will make a recommend songs for that user. And an authenticate user can create an online playlist which he/she liked. Moreover, this site is going to help to find a song more specifically and suggest song for a particular user.

2.1.5 Advantage

This site will help people find a Bengali song. They can search songs by based on some category. And for that they will find song easily. The user can also create an online playlist. So, there are no fears to lose songs which they loved. For example, you create a playlist in your desktop or mobile and all songs are saved on memory, somehow your memory is gone to crush, and you lost your favorite songs list. But there is no fear to lose your songs in online system.

2.2 System Description

The system will provide you all type of Bengali music's. All type of user can see site home page when they enter the website. The home page will show some type of song like latest songs, most viewed songs etc. Also, it is showing search option with some kinds of category which help to user to find song easily. After searching they can find their desire song. If they want to add songs to their playlist, they must become an authenticate user of this site. Otherwise, they can't add songs or create a playlist. Making clear once again, general user can search songs, listen songs. They cannot create playlist if they are not created account. Another thing is, this site will recommend song to that authenticate user based on his/her interested. This site will read user interested song based on his /her search then recommend songs with his/her choice. Sometime site will also recommend songs fully different type of category to see user reaction, just to know user want to listen that kinds of songs also or not. In every particular song, user can react and make a comment. Site should have an admin user who can maintain this site. For example, admin can add, delete, update songs. Admin can also remove user if the user violating any rules of this site.

2.3 Functional Requirements

2.3.1 System Features

- System should have two types of searching option.
 - All users can search songs by song name.
 - All users can search songs based on some categories.
- Visitor can see latest songs and most viewed songs list.
- System should suggest songs to the user based on his/her choice

- Authenticate User can react on a particular song.
- Authenticate User can comment on a particular song.
- Authenticate User can create a playlist.
- Admin can add, delete, and update songs.
- Admin can remove users.

2.3.2 Entity Relationship Diagram

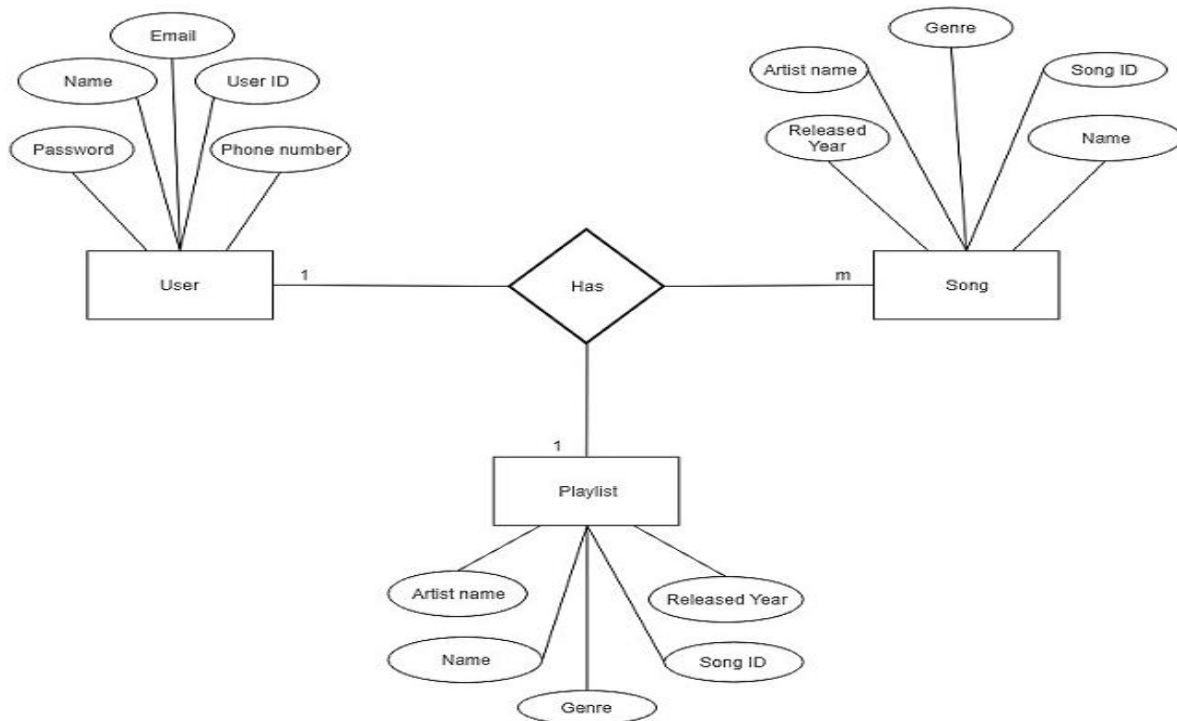


Fig: 2.1 Entity Relationship Diagram

2.4 Non-functional Requirements

2.4.1 Performance

System will give user to a quick response.

2.4.2 Scalability

System will handle one thousand users at a time.

2.4.3 Security

System and Users data should be in safe. That's why data encryption required.

2.4.4 Maintainability

2.4.5 Usability

Efficiency, and satisfaction in a quantified context of use.

2.4.6 Auditing & Logging

These activities include network traffic, internet access, creating or deleting users, adding users to groups, changing file permissions, transferring files, opening the case, powering off, deleting system logs, and anything else a user, administrator, or the system itself might do.

2.4.7 Availability

The quality of being able to be used or obtained.

2.5 External Interface Requirement

2.5.1 User Interface

Any mobile or computer can use that system but for the case of low configuration mobile, not sure. Better to use latest mobiles or devices.

2.5.2 Hardware Interface

- Processor: Intel Core i3
- Ram: 8GB
- Memory: 500GB

2.5.3 Software Specification

- Database Server: MySQL
- Client: Microsoft Internet Explorer or any web browser
- Development Tool: PhpStorm
- Programming Language: PHP
- Framework: Laravel
- Front-end: HTML, CSS, and JavaScript

Chapter 3: System Analysis

3.1 Use Case Diagram

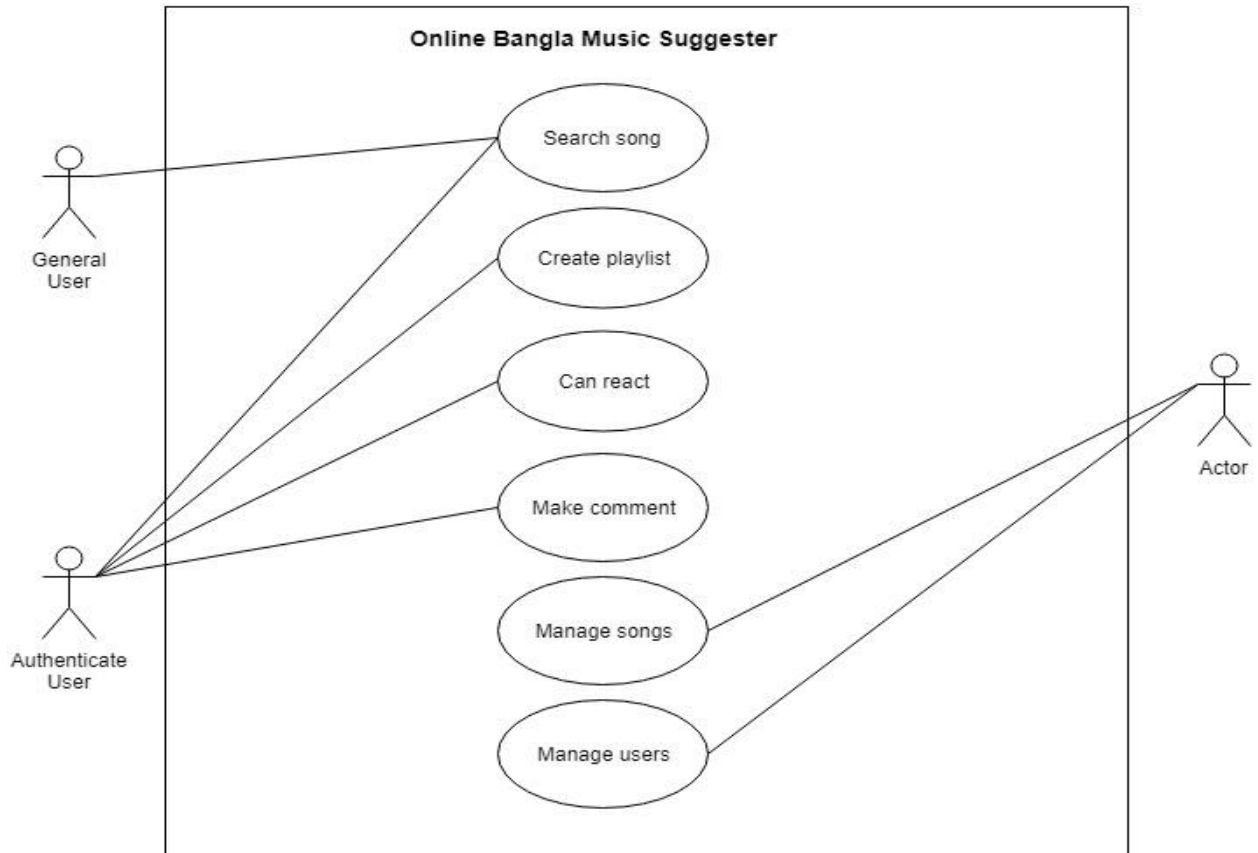


Fig: 3.1 Use Case Diagram

3.2 Use Case Description (for each use case)

3.2.1 Search song

Use Case ID	OBMS_1
Use Case name	Search song
Actors	General user, Authenticate user
Description	This use case will allow user to search song according to search type. The search types are search by song name and search by some type of category (artist name, year (from-to), genre). The user has to input song name into the search bar or fill any of the category on the search field. After the system will bring out that search result.
Precondition	<ul style="list-style-type: none">• User must input valid data.• Text should not be empty.
Post condition	<ul style="list-style-type: none">• The system displays the adjusted or relevant result.

3.2.2 Create playlist

Use Case ID	OBMS_2
Use Case name	Create playlist
Actors	Authenticate user
Description	This use case will allow user to react on a song. The system will be able to display the reaction to that user and as well as others user.
Precondition	<ul style="list-style-type: none">• User must be an authenticate user of this site.• User should be logged in status.
Post condition	<ul style="list-style-type: none">• System should add that song successfully.• System should notify user.

3.2.3 Can react

Use Case ID	OBMS_3
Use Case name	Can react
Actors	Authenticate user
Description	Authenticate user can create playlist. In every song there should have a button named 'add to list'. If the user clicks on it, the system will add that song to the user list and will notify that user, the song added successfully.
Precondition	<ul style="list-style-type: none">• User must be an authenticate user of this site.• User should in logged in status.
Post condition	<ul style="list-style-type: none">• System will count all that reaction and make it visible to the all user.

3.2.4 Make comment

Use Case ID	OBMS_4
Use Case name	Make comment
Actors	Authenticate user
Description	This use case will allow user to make a comment on a song. The system will able to display that comment to that user and as well as others user.
Precondition	<ul style="list-style-type: none">• User must be an authenticate user of this site.• User should in logged in status.
Post condition	<ul style="list-style-type: none">• System will count all that reaction and make it visible to the all user.

3.2.5 Can react

Use Case ID	OBMS_3
Use Case name	Can react
Actors	Authenticate user
Description	Authenticate user can create playlist. In every song there should have a button named 'add to list'. If the user clicks on it, the system will add that song to the user list and will notify that user, the song added successfully.
Precondition	<ul style="list-style-type: none">• User must be an authenticate user of this site.• User should in logged in status.
Post condition	<ul style="list-style-type: none">• System will count all that reaction and make it visible to the all user.

3.2.4 Make comment

Use Case ID	OBMS_4
Use Case name	Make comment
Actors	Authenticate user
Description	This use case will allow user to make a comment on a song. The system will able to display that comment to that user and as well as others user.
Precondition	<ul style="list-style-type: none">• User must be an authenticate user of this site.• User should in logged in status.
Post condition	<ul style="list-style-type: none">• System will count all that reaction and make it visible to the all user.

3.3 Activity Diagram (for each use case)

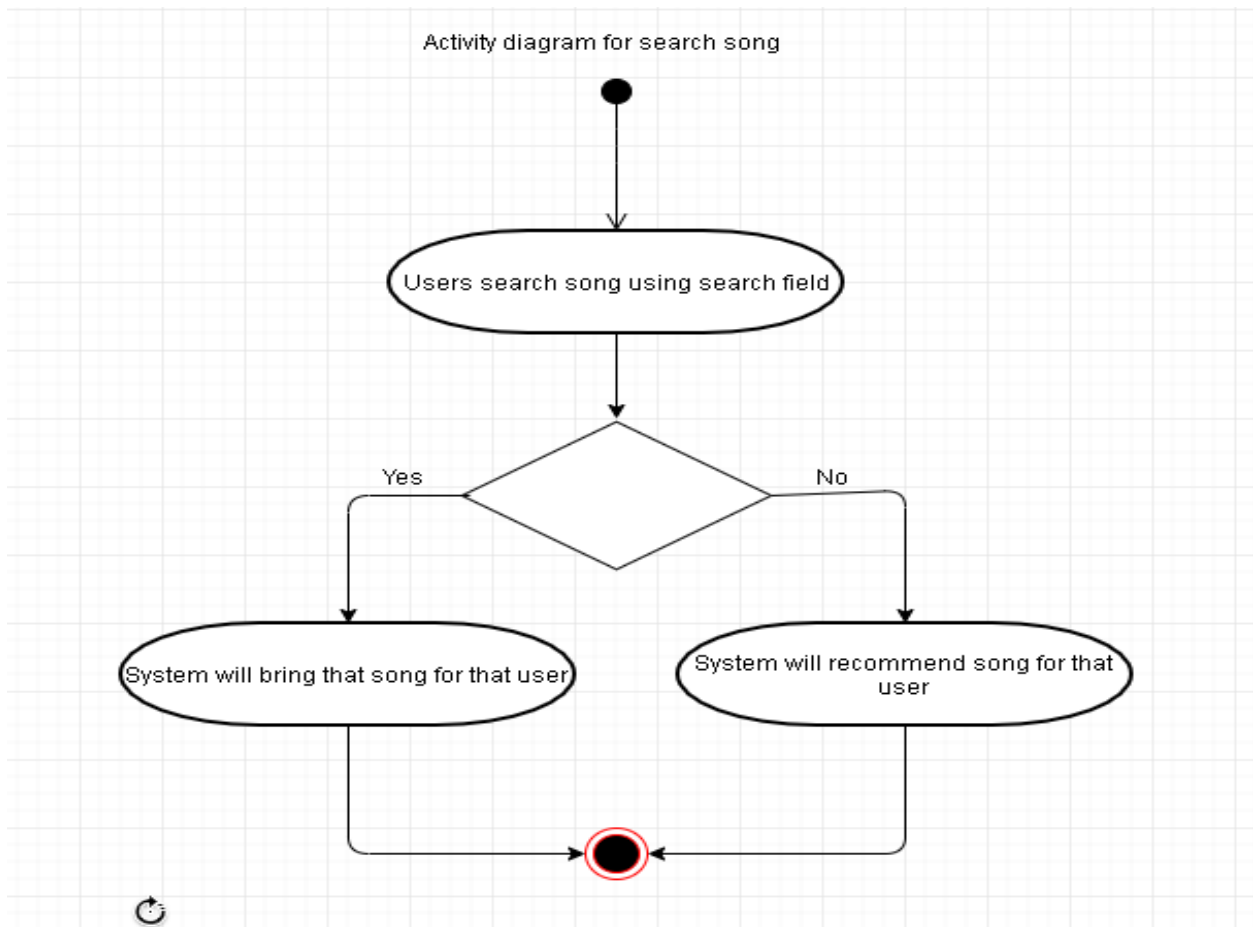


Fig: 3.3.1 Search song activity diagram

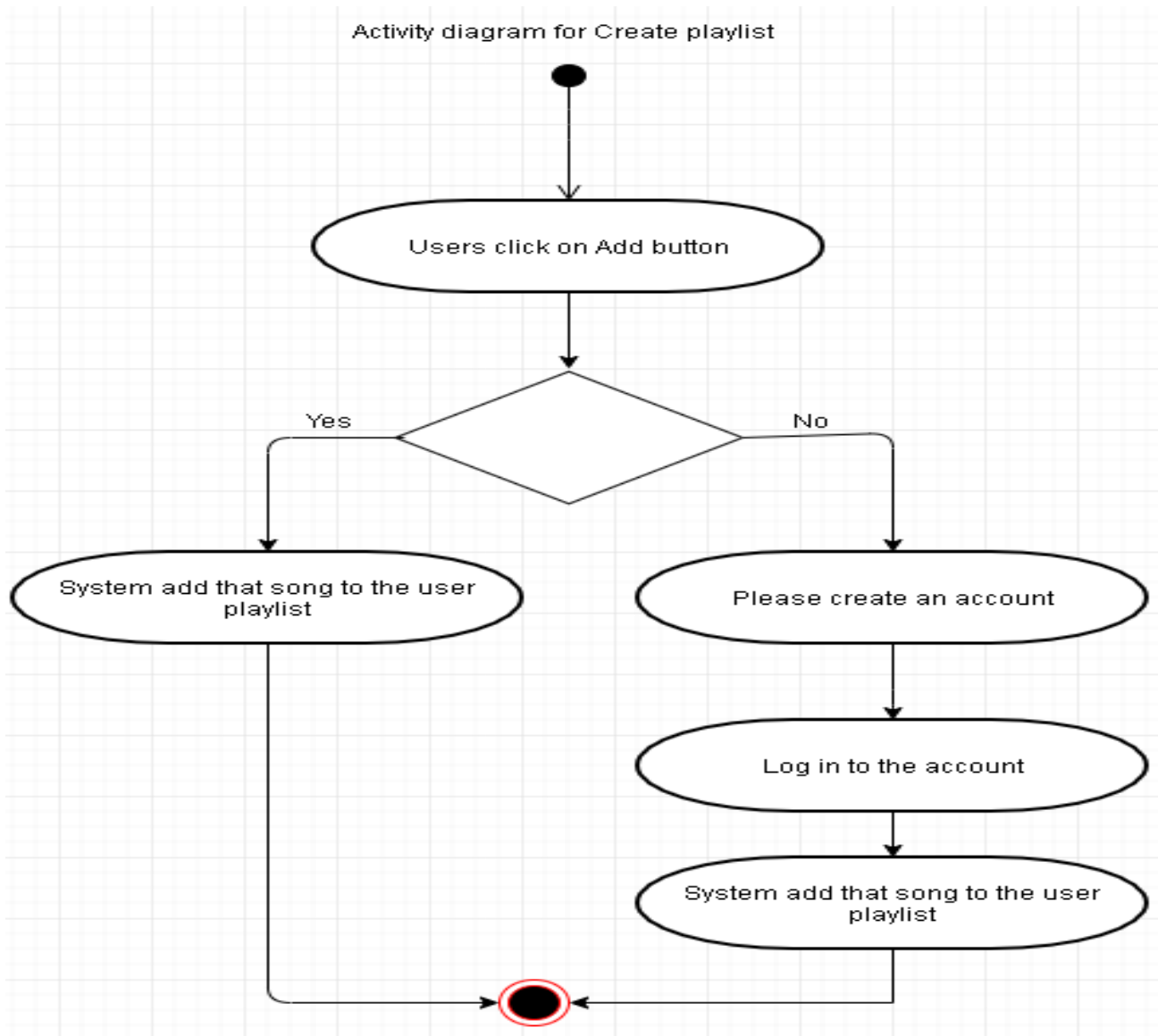


Fig: 3.3.2 Create playlist activity diagram

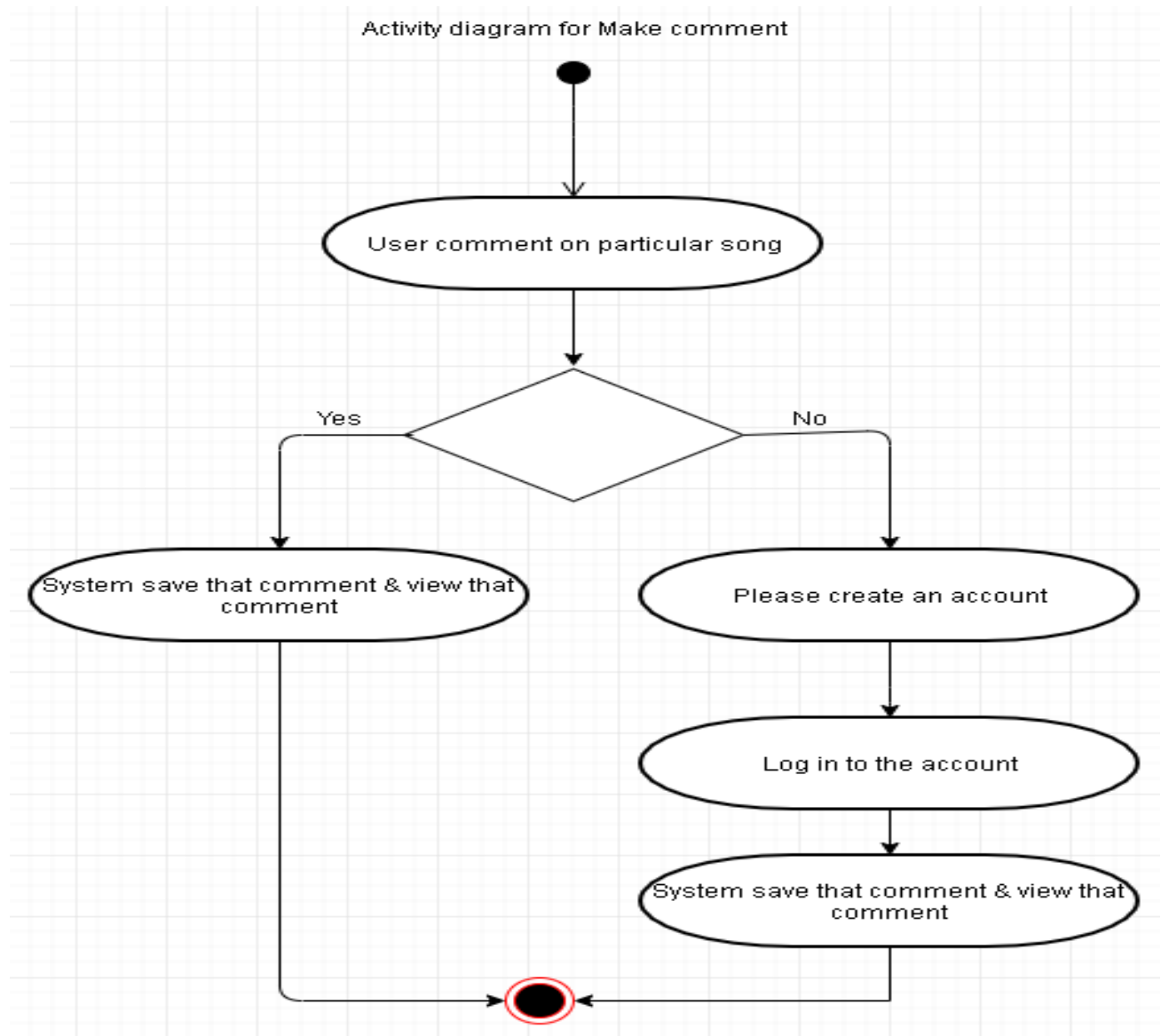


Fig: 3.3.3 Make comment activity diagram

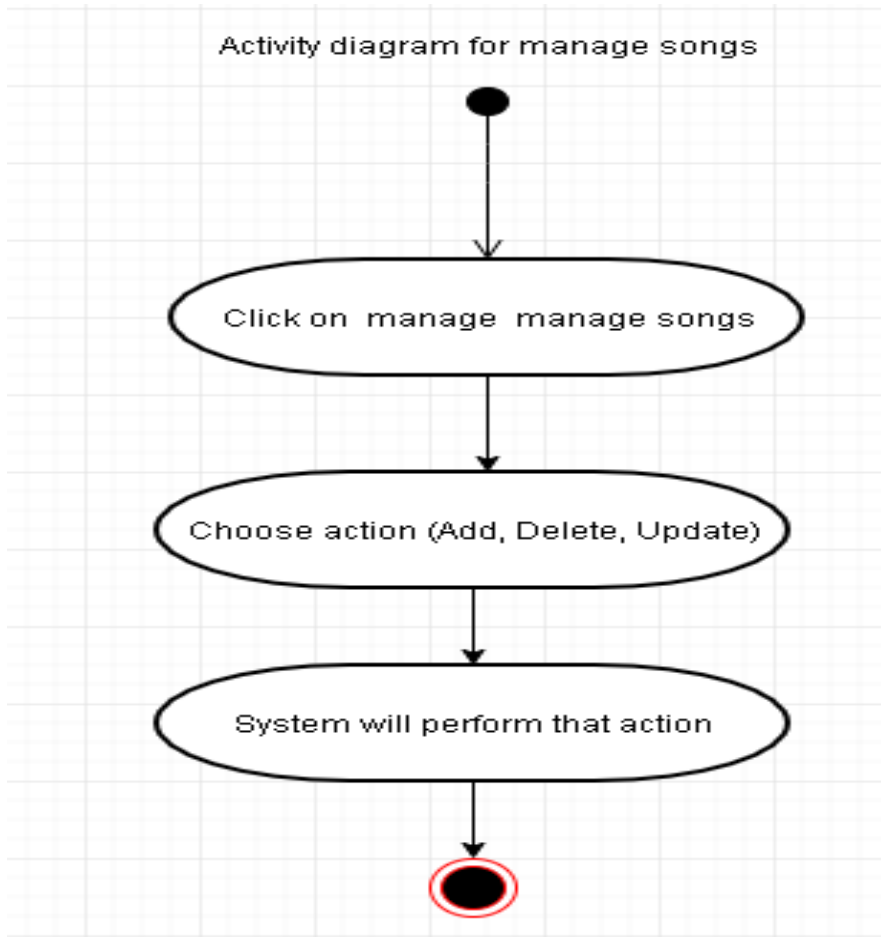


Fig: 3.3.4 Manage songs activity diagram

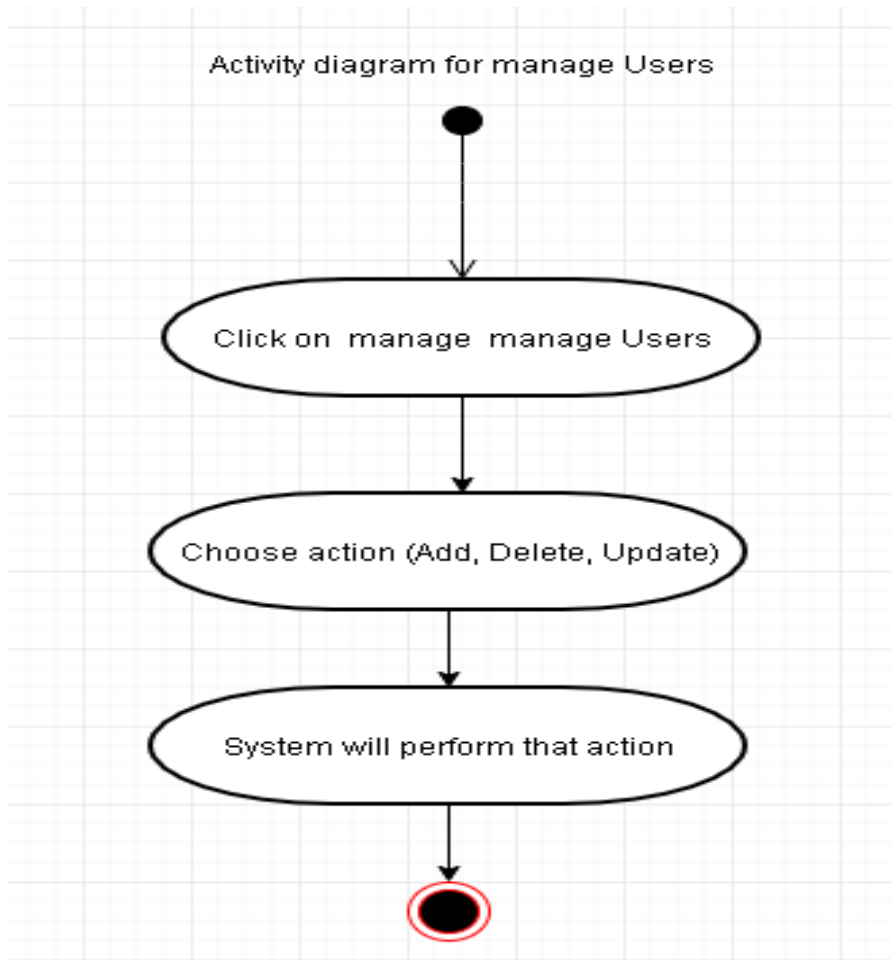


Fig: 3.3.5 Manage user's activity diagram

3.4 System Sequence Diagram (for each use case)

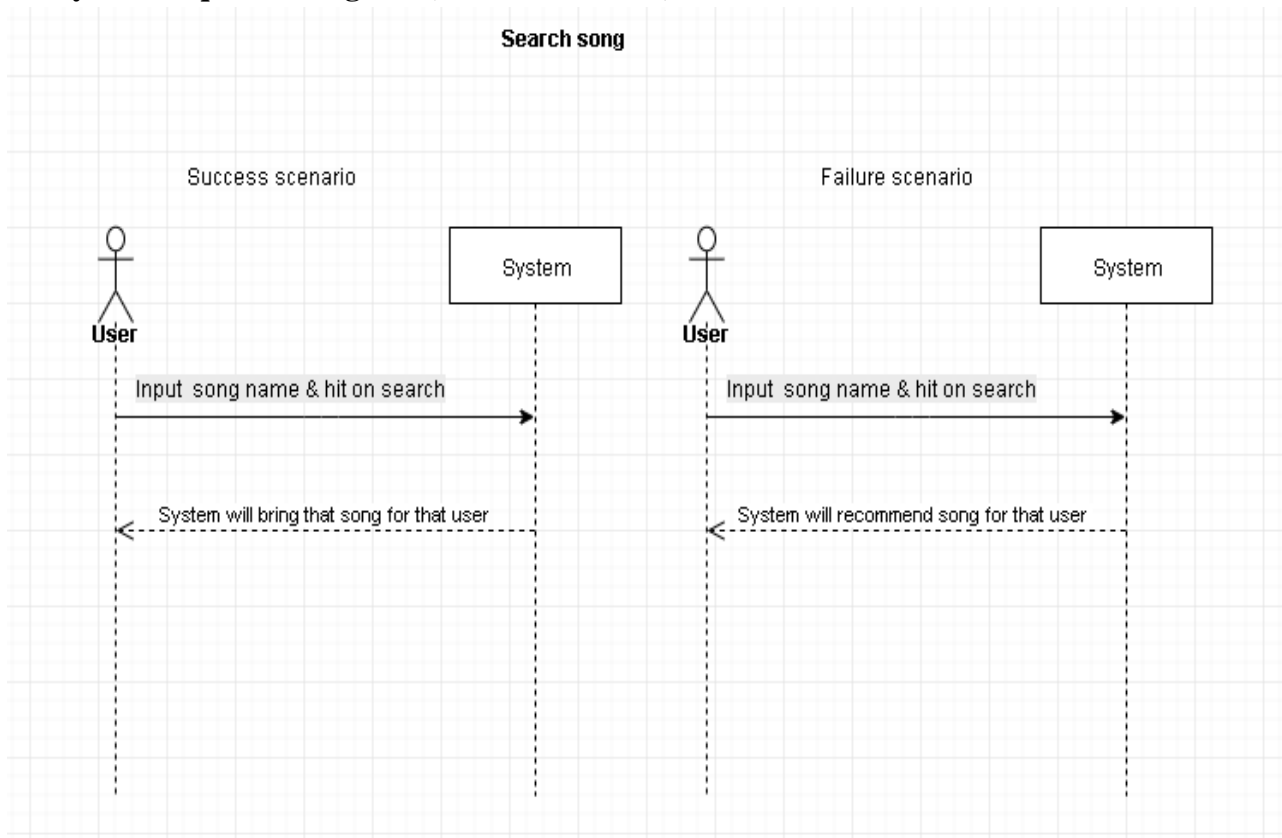


Fig: 3.4.1 Search song system sequence diagram

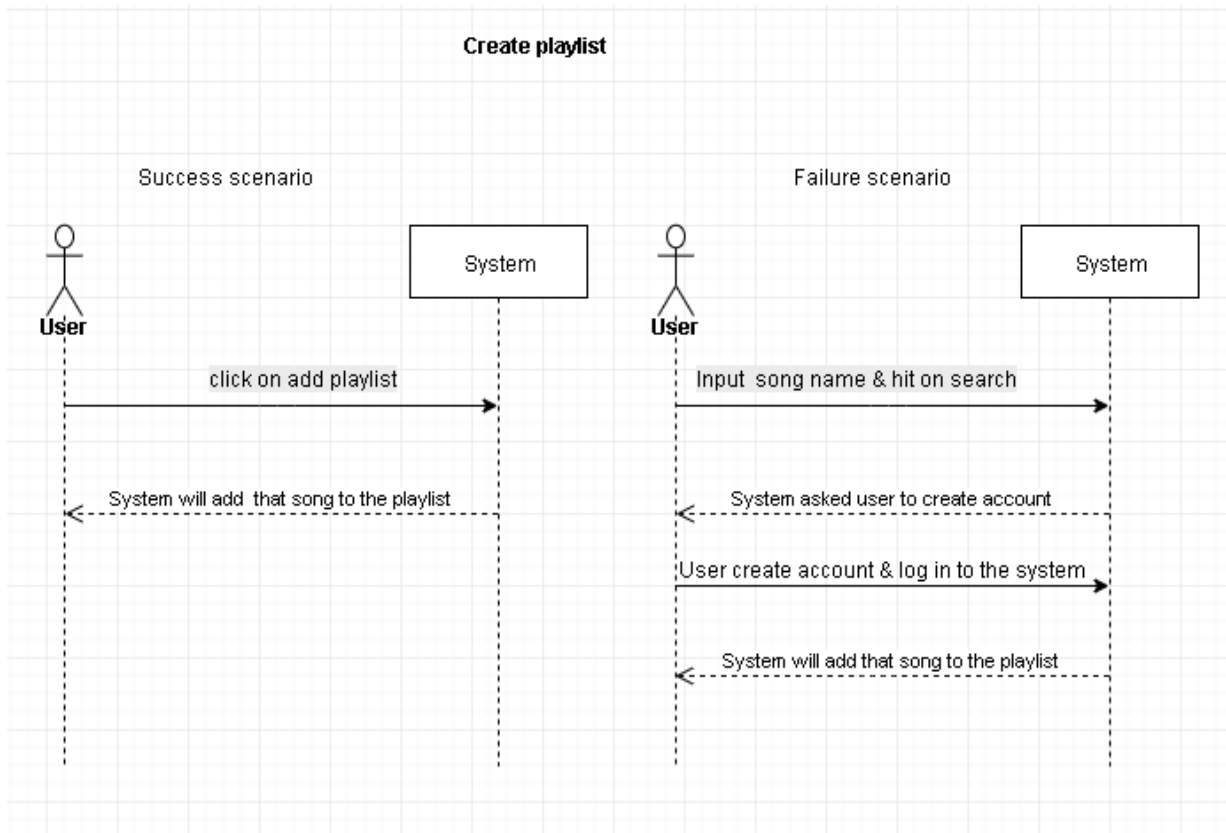


Fig: 3.4.2 Create playlist system sequence diagram

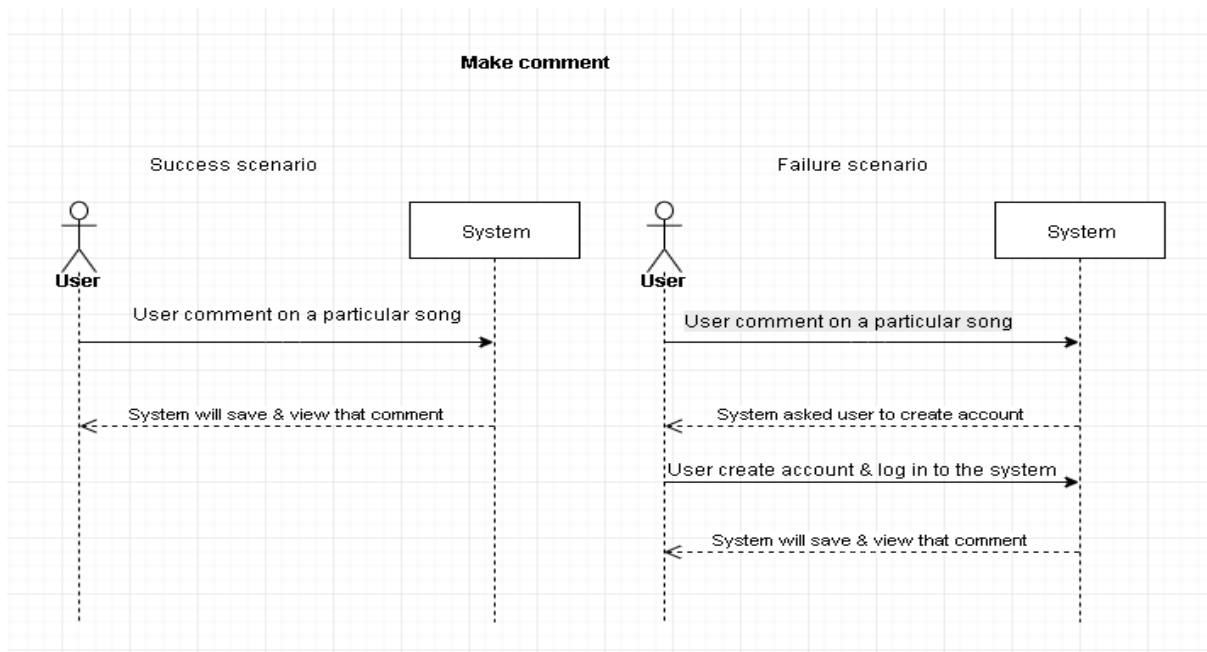


Fig: 3.4.3 Make comment system sequence diagram

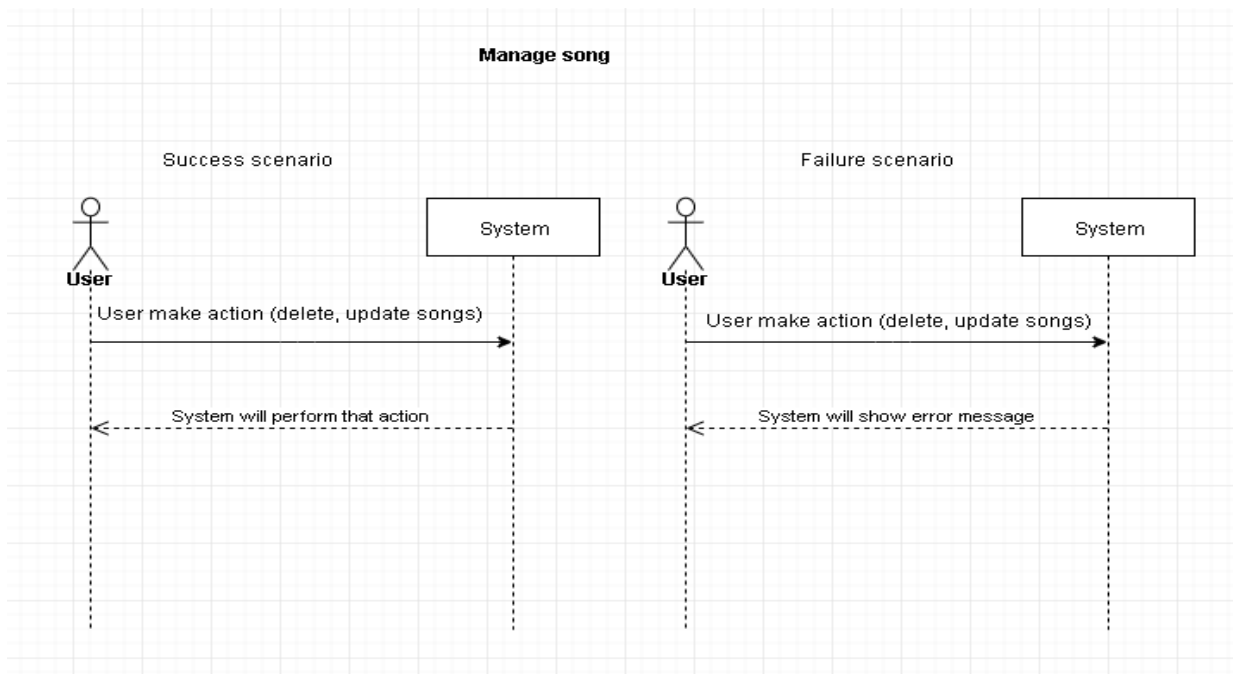


Fig: 3.4.4 Manage song system sequence diagram

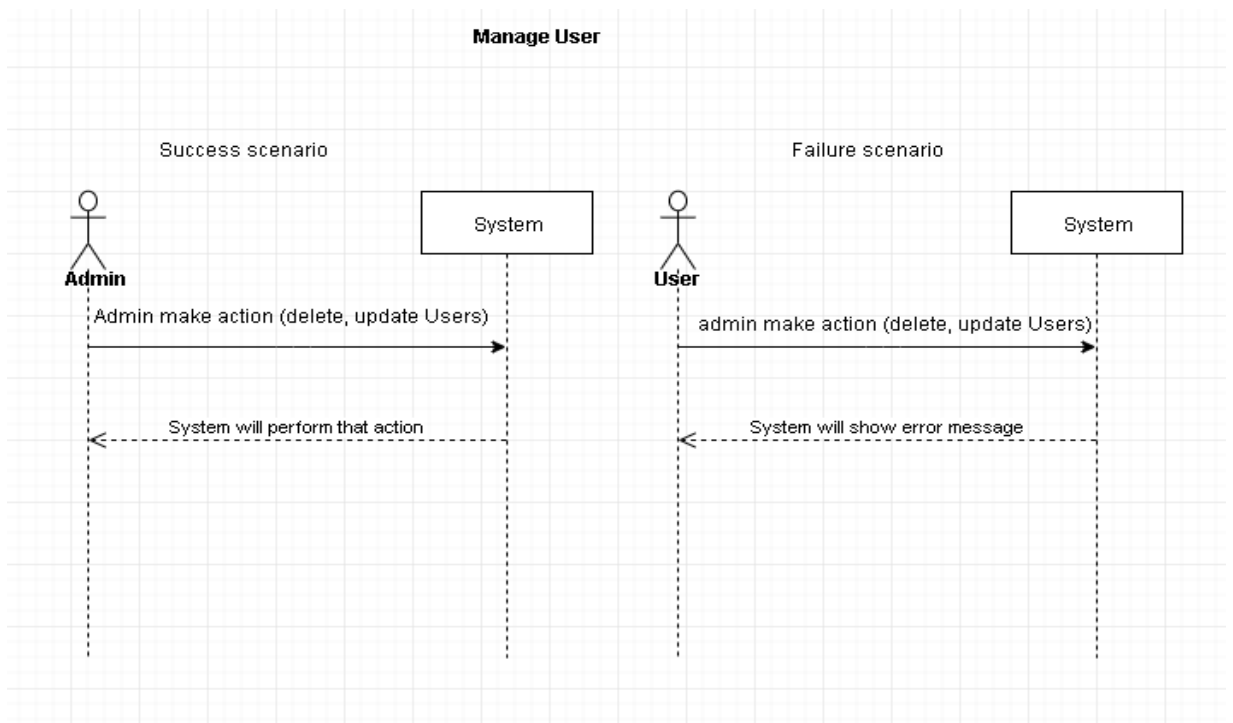


Fig: 3.4.5 Manage user system sequence diagram

Chapter 4: System Design Specification

4.1 Class Diagram

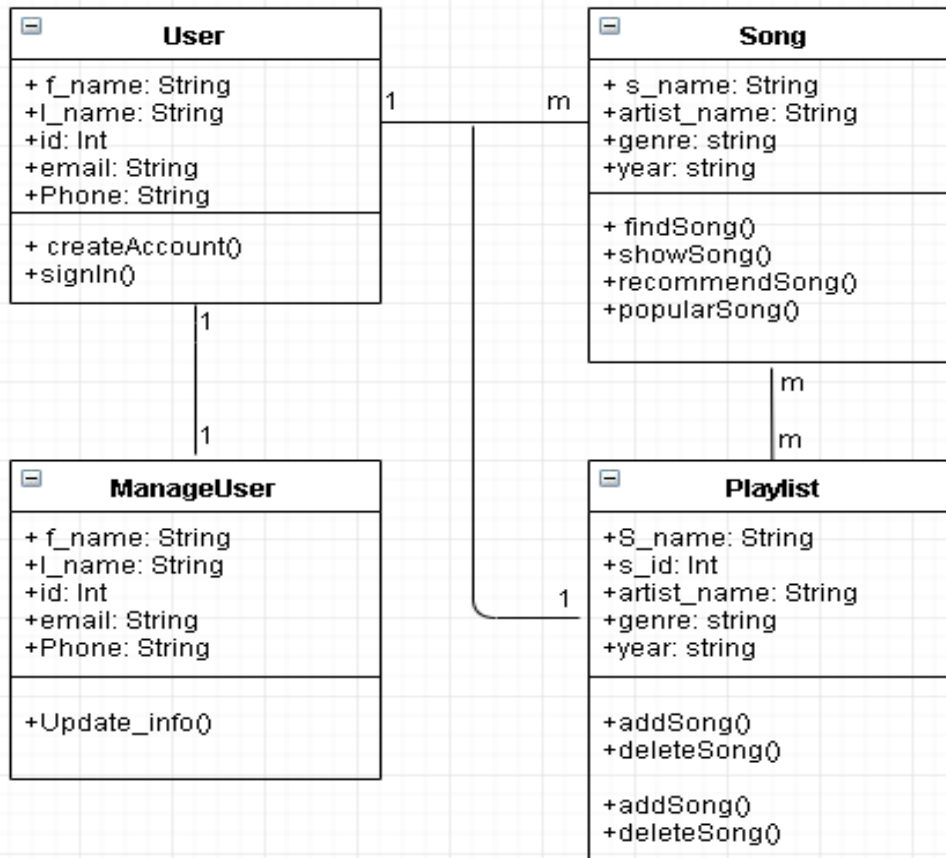


Fig: 4.1 Class diagram

4.2 Database Design Diagram

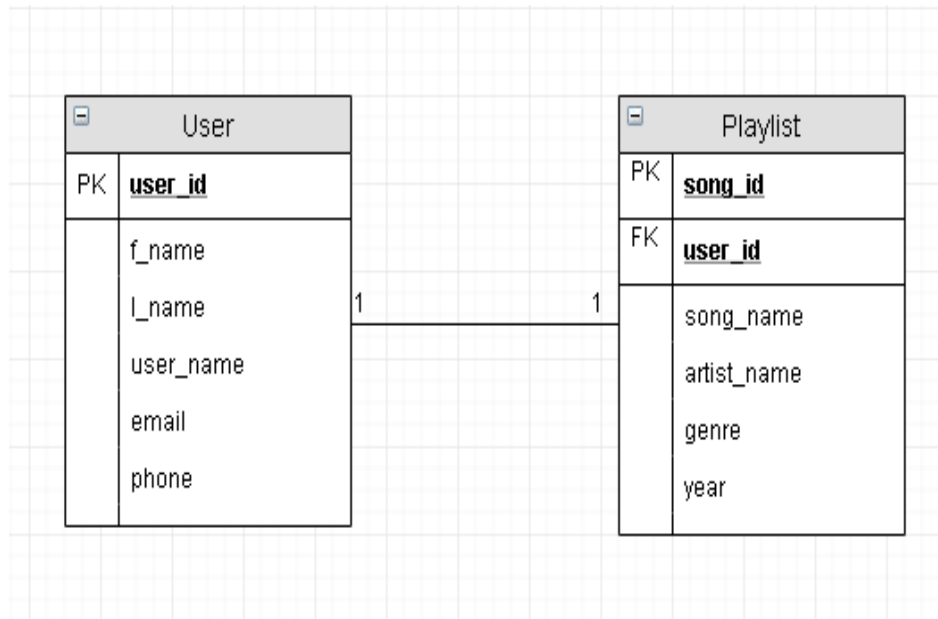


Fig: 4.2 Database design diagram

4.3 Development Tools & Technology

4.3.1 User Interface Technology

In information technology, the user interface (UI) is everything designed into an information device with which a person may interact. This can include display screens, keyboards, a mouse and the appearance of a desktop. It is also the way through which a user interacts with an application or a website.

4.3.1.1 Laravel Framework

Laravel is a free, open-source PHP web framework, for the development of web applications following the model–view–controller architectural pattern and based on Symfony.

4.3.1.2 JavaScript

It is a language which is also characterized as dynamic, weakly typed, prototype-based and multi-paradigm.

4.3.1.3 Bootstrap

Bootstrap is a free and open-source front-end framework for designing websites and web applications.

4.3.2 Implementation Tools & Platforms

4.3.2.1 PHP Storm

PhpStorm provides an editor for PHP, HTML and JavaScript with on-the-fly code analysis, error prevention and automated refactorings for PHP and JavaScript code.

4.3.2.2 MSSQL Server

Microsoft SQL Server is a relational database management system developed by Microsoft.

4.3.2.2 Apache HTTP Server

The Apache HTTP Server, colloquially called Apache, is free and open-source cross-platform web server software, released under the terms of Apache License 2.0.

Chapter 5: System Testing

5.1 Testing Features

Feature testing is the process of making changes in software system to add one or more new features or to make modifications in the already existing features. Each of these features is said to have a characteristic that is designed to be useful, intuitive, and effective.

5.1.1 Features to be tested

Features	Priority	Description
Registration	2	To create playlist, user must register himself.
Log in	2	Log in as authenticate user.
Log out	2	Log out from this system.
Search songs	3	User search song using navigation bar search box or some category field.
Create playlist	3	User can create playlist using create playlist button.
Make comment	3	User inputs some text in comment box to make comment.
Can react	2	Taps on react button to react.
Manage users	3	Access to database is frequently needed operation. So, this technical feature should be tightly in control for management system.

Here, 1 = Low priority; 2 = Medium priority; 3 = High priority

5.2 Testing Strategies

A testing strategy is a general approach to the testing process rather than a method of devising particular system or component tests. Different testing strategies may be adopted depending on the type of system to be tested and the development process used.

5.2.1 Pass/Fail Criteria

The entrance criteria for each phase of testing must be met before the next phase can commence. Now the criteria for pass and fail are given below. • According to the given scenario the expected result needs to take place then the scenario will be considered as pass otherwise that criteria should be failed.

- If an item tested 10 times, 9 times perfectly worked and single time do not work properly then it will consider as fail case.
- System crash will be considered as fail case.
- After submitting a query in the system, if expected page won't appear then it will be considered as fail case.

5.2.2 Testing Schedule

Test phase	Time
Test Plan Creation	1 week
Test specification creation	2 weeks
Unit testing	Developing time
Component testing	1 week
Test Phase	Time
Integration Testing	1 week
Use case validation	1 week
User interface testing	1 week
Load testing	1 week
Performance Testing	1 week
Release to production	1 week

5.3 Test Environment

Testing environment is a setup of software and hardware for the testing teams to execute test cases. In other words, it supports test execution with hardware, software and network configured.

For test environment, key area to set up includes

- System and applications
- Test data
- Database server
- Front end running environment
- Client operating system
- Browser
- Hardware includes Server Operating system
- Network
- Documentation required like reference documents/configuration guides/installation guides/ user manuals

5.4 Test Cases

It is impossible to build a system without any fault. Sometimes, this fault makes software implementation failure. If we test the system before executing the system, it will help us to find the fault of the system. For testing the system, we need to write some test cases.

5.4.1 Login

Test case id: 1	Test case name: Log In
System: Online Bangla Music Suggester	Subsystem: User data
Designed By: Roman	Designed Date: 07/12/2018
Executed by:	Executed date:
Short Description: The user is registered and trying to log in to the Online Bangla Music Suggester website when the system will check validity.	

Pre-conditions: 1. When any users try to create playlist, they will be asked to login first.
 2. Assume that Username is 'Roman' and password '1234'

5.4.1.1 Login

Step	User name	Password	Expected Response
1	Digonto	555	Wrong username & Password
2		1234	Username can't be blank
3	1234	admin	Invalid username
4	Digonto		Password can't be blank
5			Username & password can't be blank
6	R@gmail.co m	pass	Invalid username
7	Digonto@gm ail.com	pass	Invalid username
8	fafafg	Invalid username & password
9	Admin	password	Song will added successfully to the playlist
10	Password	admin	Invalid username & password
11	Roman	Roman.pass	Invalid username & password
Post condition: User will successfully log in to the system and song will be added to the playlist.			

5.4.2 Search song

Test case id: 2	Test case name: Search song
System: Online Bangla Music Suggester	Subsystem: N/A
Designed By: Roman	Designed Date: 07/12/2018
Executed by:	Executed date:
Short Description: User in homepage and searching song using search option.	
Pre-conditions: 1. User must input song name or input valid data in search field.	

5.4.1.2 Search song

Step	Song name	Expected Response
1		Search field can't be empty
	fadfaf	Song name invalids & system will recommend song
	123	Invalid song name & system will recommend song
	Amar sonar bangla	System will bring out that song for the user.
Post condition: User successfully gets his/her searched song.		

5.4.3 Make comment

Test case id: 3	Test case name: Make comment
System: Online Bangla Music Suggester	Subsystem: N/A
Designed By: Roman	Designed Date: 07/12/2018
Executed by:	Executed date:
Short Description: User in comment section and want to make a comment.	
Pre-conditions: 1. User must input some text.	

5.4.3.1 Make Comment

Step	Comment	Expected Response
1		Comment can't be empty
	fadfaf	Comment will be added successfully
		Invalid song name & system will recommend song
	I like this <script>alert ('Injected!') ;</script> site	System will notify user and will not added this type off comment
Post condition: User successfully added his/her comment.		

5.4.4 Create playlist

Test case id: 4	Test case name: Create playlist
System: Online Bangla Music Suggester	Subsystem: N/A
Designed By: Roman	Designed Date: 07/12/2018
Executed by:	Executed date:
Short Description: User wants to create online playlist to add his/her favorite song.	
Pre-conditions: 1. User must be in log in form.	

5.4.4.1 Create playlist

Step	Create playlist	Expected Response
1	Tap on create playlist	User will be asked by system to log in first. If he/she is not in log in form
	Tap on create playlist	System will create playlist for him/her. If he/she in log in form.
Post condition: User will successfully create online playlist and view songs in the playlist.		

5.4.5 Manage user

Test case id: 5	Test case name: Manage user
System: Online Bangla Music Suggester	Subsystem: N/A
Designed By: Roman	Designed Date: 07/12/2018
Executed by:	Executed date:
Short Description: Admin can remove user, delete user.	
Pre-conditions: 1. Admin must be in log in form.	

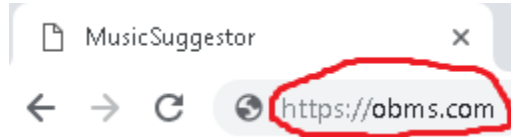
5.4.5.1 Manager user

Step	Create playlist	Expected Response
1	Tap on remove or update user button	User will be asked by system to log in first. If he/she is not in log in form
	Tap on remove or update user button	System will notify him, 'this user is removed or updated successfully'. If he is in log in form.
Post condition: System will show refresh page to the admin.		

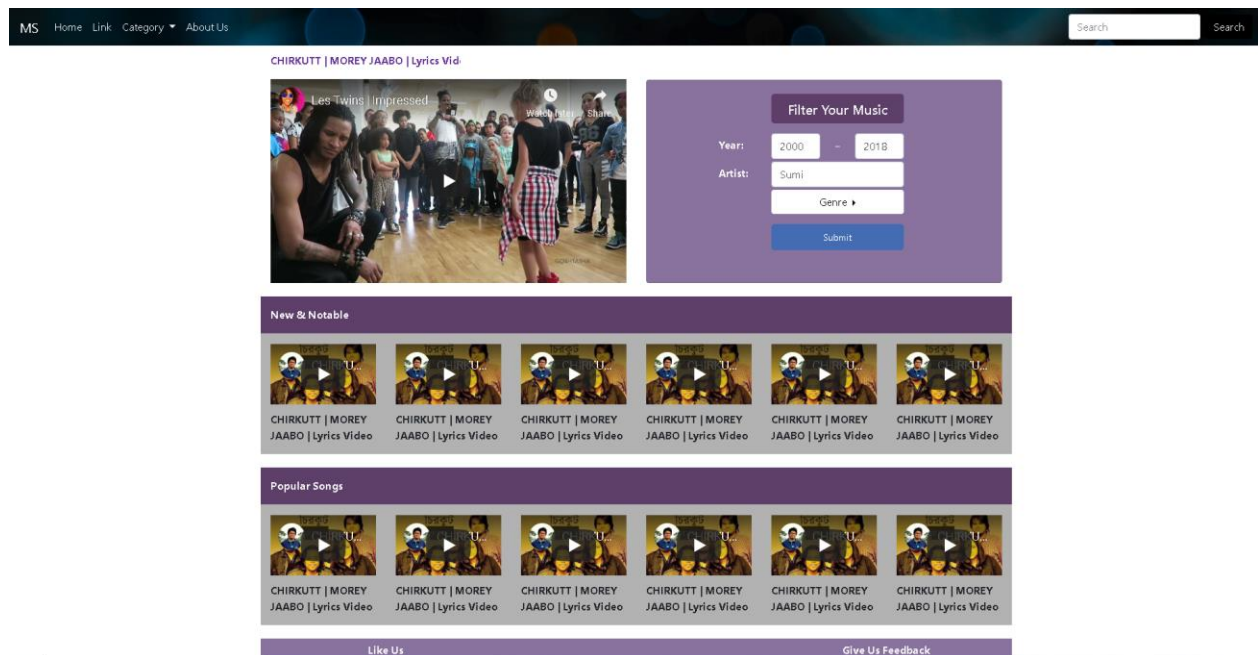
Chapter 6: User Manual

6.1 Getting started

User must open a browser such as google chrome. Then input website URL '<https://obms.com>'

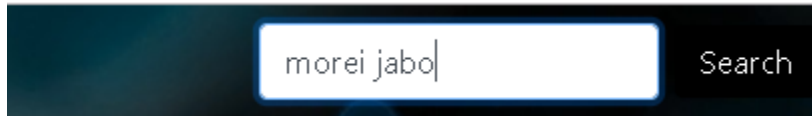


Then the page will open.



6.2 Search song by name

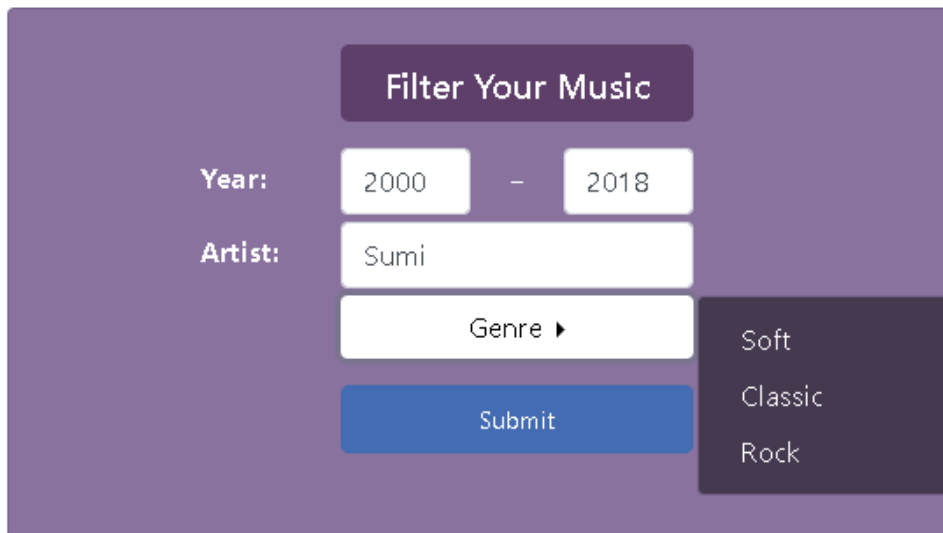
If a user wants to search a song by song names, then he must input song names to the search bar and hit enter to the search button. After that system will bring out that song for the user and user can show it in home page.



A dark-themed search bar with a white input field containing the text "morei jabo" and a "Search" button to its right.

6.3 Search song by category

This searching option will help user find song more specifically. For that user must fill any of the category and click on submit button then he/she gets his/her desired song.



A purple-themed "Filter Your Music" form. It includes a "Year:" field with "2000" and "2018" separated by a hyphen, an "Artist:" field with "Sumi", and a "Genre" dropdown menu with a right-pointing arrow. A blue "Submit" button is at the bottom. A dark purple dropdown menu is open on the right, showing "Soft", "Classic", and "Rock" options.

Chapter 7: Project Summary

7.1 Conclusion

This project has been started from September. From that beginning, I have to work hard to know the user requirements clearly. After that I proposed a design to them by help of my supervisor. They appreciated and said to start developing the project. Then I started to develop the project. From then I gradually develop the project. Here I want to say, all of the songs are coming from YouTube. So, I had to learn web scraping then I think storing the data in database neatly is very important. That's why I did this first and input the desired data to database and made a relationship with the tables. After that I designed the UI. This project's UI is very simple and clean which is very helpful for the user's experience. Then I started coding and executing the project. If I did not test this project there will stay some bug on this project which will ruin the full project. That why give importance to test this project and then I solved some bug which I got after testing this project.

7.2 Limitations

It is very hard to develop something without any limitations. This project has some limitations too. Limitations are: -

- There are some data which is unavailable in some songs.
- In YouTube hidden class is preventing scraping some data which I really need.
- Needed a song id of every song for reacting but unable to get it.

7.3 Obstacles and Achievements

To walk in the good way, one has to face many obstacles. By facing obstacles, one will get some achievements. To scrapping the data from the YouTube and to get the data in a correct format so that it can be processed was an obstacle for me. Although I have done it by taking help from my supervisor, friends and by searching the solution from google. Some obstacles and achievement are as:

- **Scope Change:** Sometimes I was asked to add some features. Then I had to redesign the system. It made me sometimes hopeless.

- **Resource Deprivation:** In some cases, I did not get proper resource to handle that situation.
- **Lack of Stakeholder's Engagement:** Making people get interested with this new kind of web application is difficult.

7.4 Future Scope

By working with this project, I have learnt many things and meet with some great person. This project will give me some opportunity to work with this type of similar project.

7.5 References

By working with this project, I have taken help from some sites. Those sites are in bellow: -

- <https://www.google.com/>
- <https://www.wikipedia.org/>
- <http://php.net/manual/en/index.php>
- <https://laravel.com/>