THE FINAL REPORT OF OUR PROJECT: A MULTIMEDIA WEBSITE METUBE

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CONTENTS

INTRODUCTION

According to the requirements which provided in the course website, we builded the multimedia website: Metube. The Metube project is planned to build a website, like youtube or other multimedia websites, and every users could be register and sign in through the port on navbar. When the user signed in, they can click into their own web page and the sidebar will show all the functions they could be used. They can upload and download media files, give some comments and rate on the media. For specific media, users who are signed in can build a group to discuss the same topic. Also, Users can send messages to others based on our message system. Channels can be set by each signed-in user, and others can subscribe to different channels. They can add every media to their favorite list or playlists and set the permission of each file for each user.

SYSTEM DESIGN

Our website is a classic MVC architecture, which include model layer, view layer, and controller layer. The module layer use to data handling related operation, which used to query, insert, update, or delete data in the database and provide related API for the view layer and controller. The controller layer receiver the requests from the view layer and do some handling base on the request. According to the specific request, the controller layer takes charge of logical handling and operate the database using the API provided by model layer. The view layer as a user interface is provided for user to operate our system, which means accept the user's action and then send the requests to controller layer. The following figure gives the specification of the relationship between those three layers.

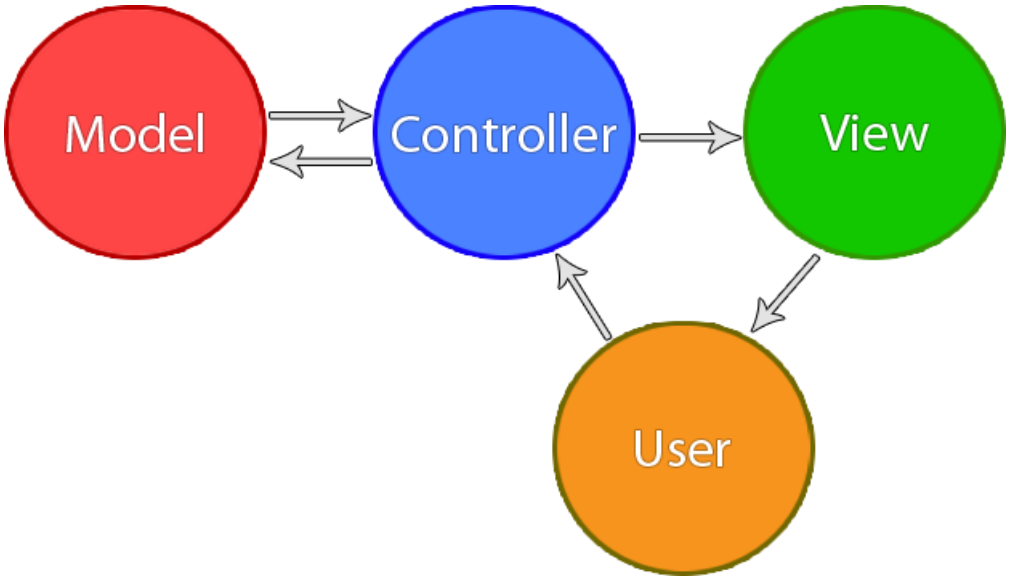

Figure 1. The Relationship of Model, Controller, and View

For our system, there are totally two kind of roles, which are normal user and register user. For the normal user, they only have some basic operations, like view, browse, search the media and comments. However, the register user can have many operations, include download, comment, create playlist, chat, etc. The following figure shows the functions provided by our system.

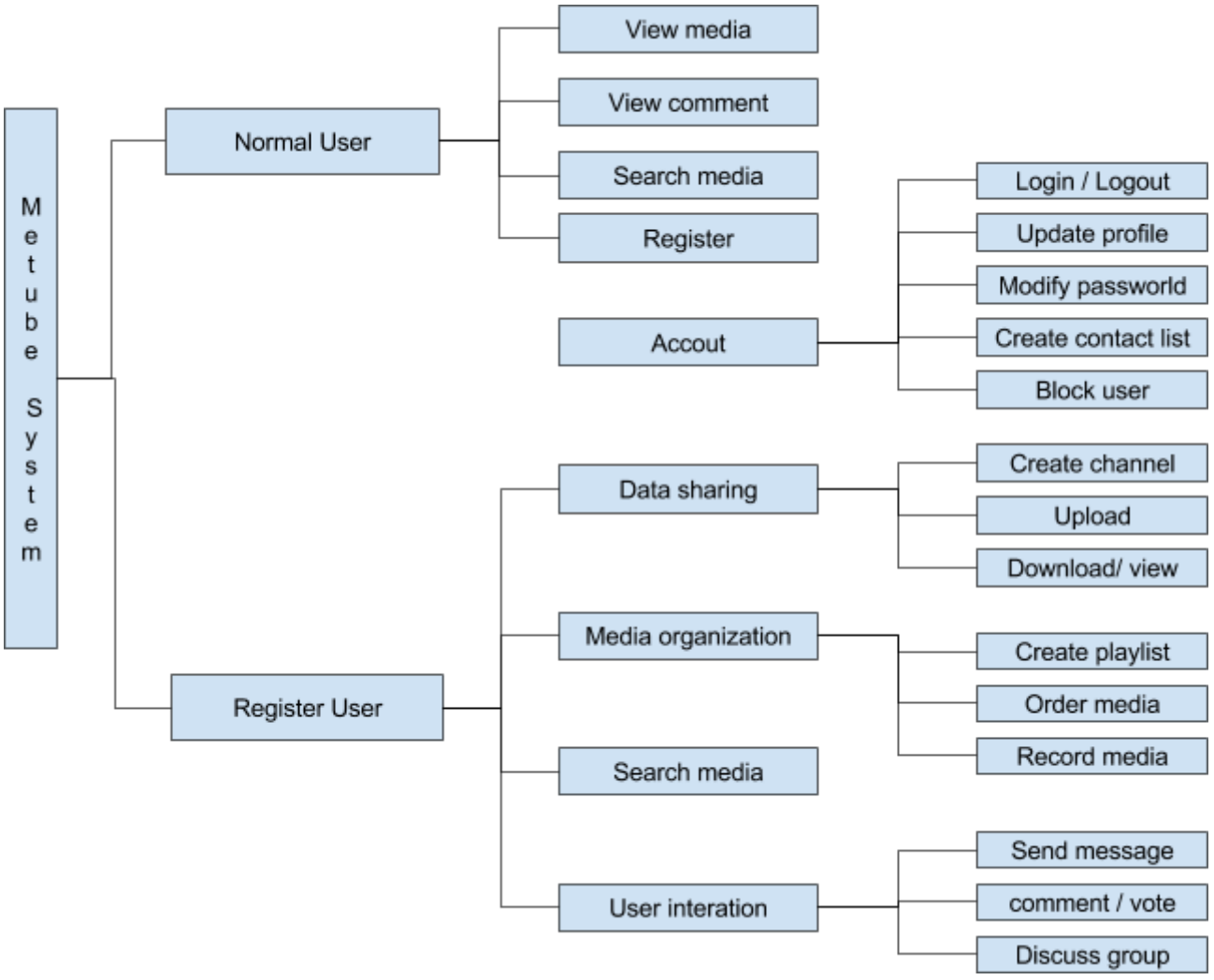

Figure 2. Function design

E-R DIAGRAM

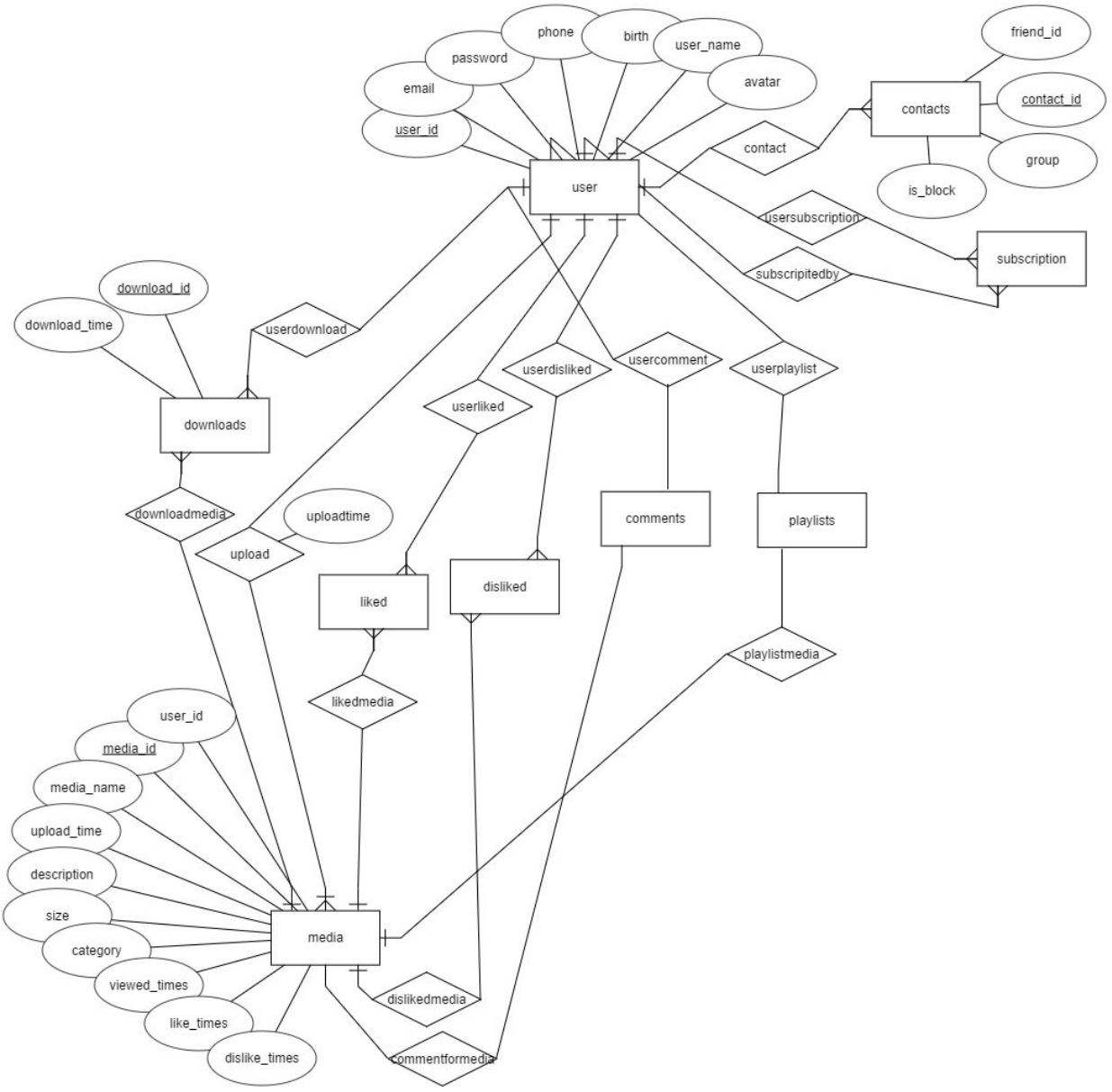

Figure 3. E-R Diagram

DATABASE SCHEMA

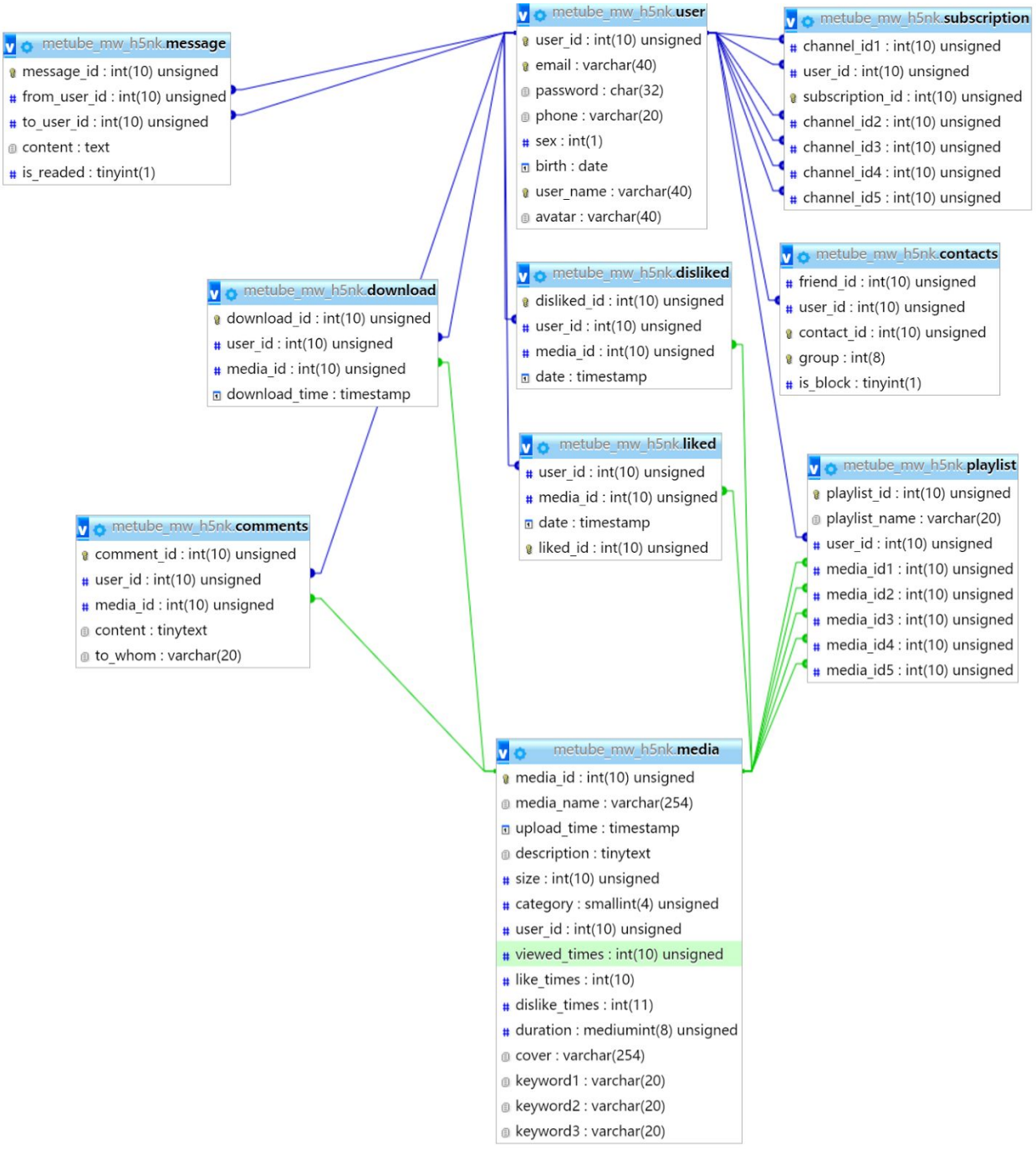

Figure 4. Database Schema

FUNCTIONAL SPECIFICATION AND TESTING

According to the requirements which provided in the course website, we accomplished all the functions and features. The following will presents all the details using screenshot.

1. User Account

For this part, according to the requirement, we achieved all the features which include registration, login, profile update, the management of contact list, blocking specific user in the contact list.

a) Registration feature

Any user can create an account though clicking the sign up button in our website, and they should provide their user name, email address, and a password. Here we create a user whose username is wang2, and his user id is 4, email with wang2@g.com.

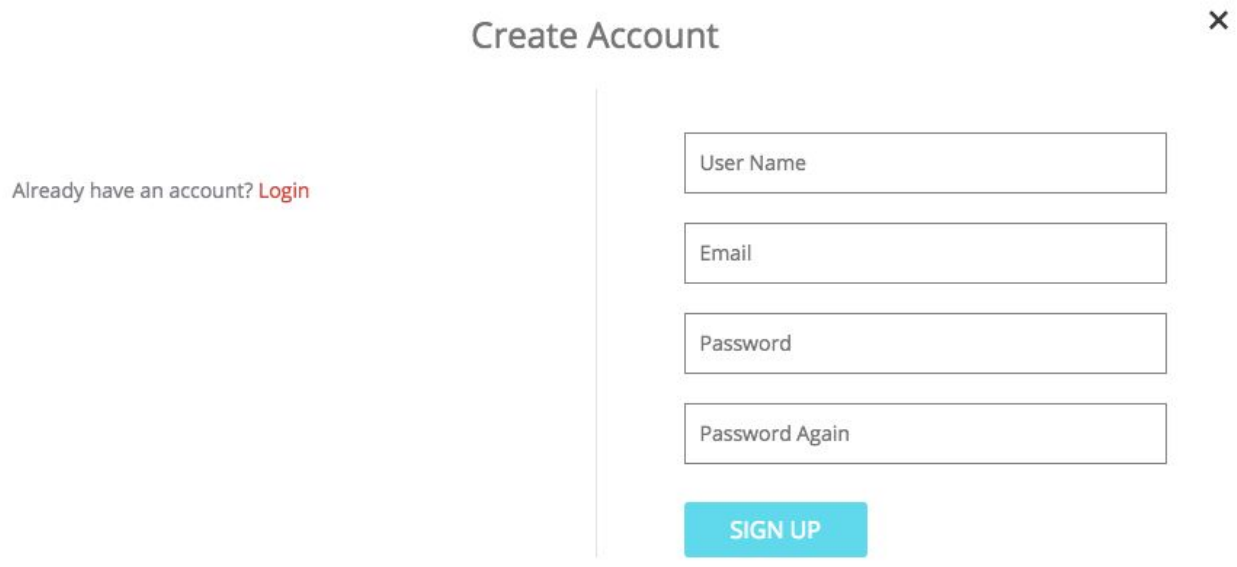

Figure 5. Create Accout

b) Login feature

After creating an account, or the users who already have the account, users can log in to the website though clicking the sign in button in the main page. Users can use email address or user name to log in. Here we signed in use the username wang2, and you can find the result in the next figure.

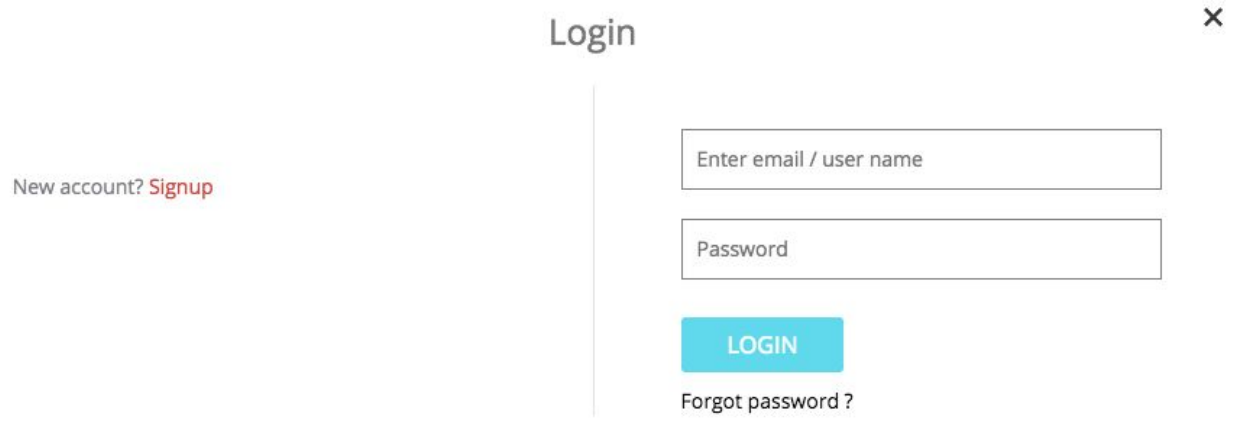

Figure 6. Login

c) Profile update

After logging in, users can update or modify their profile in their personal page, and the items which can be changed include email address, phone number, password. Meanwhile, the users cannot modify their user name and user id.

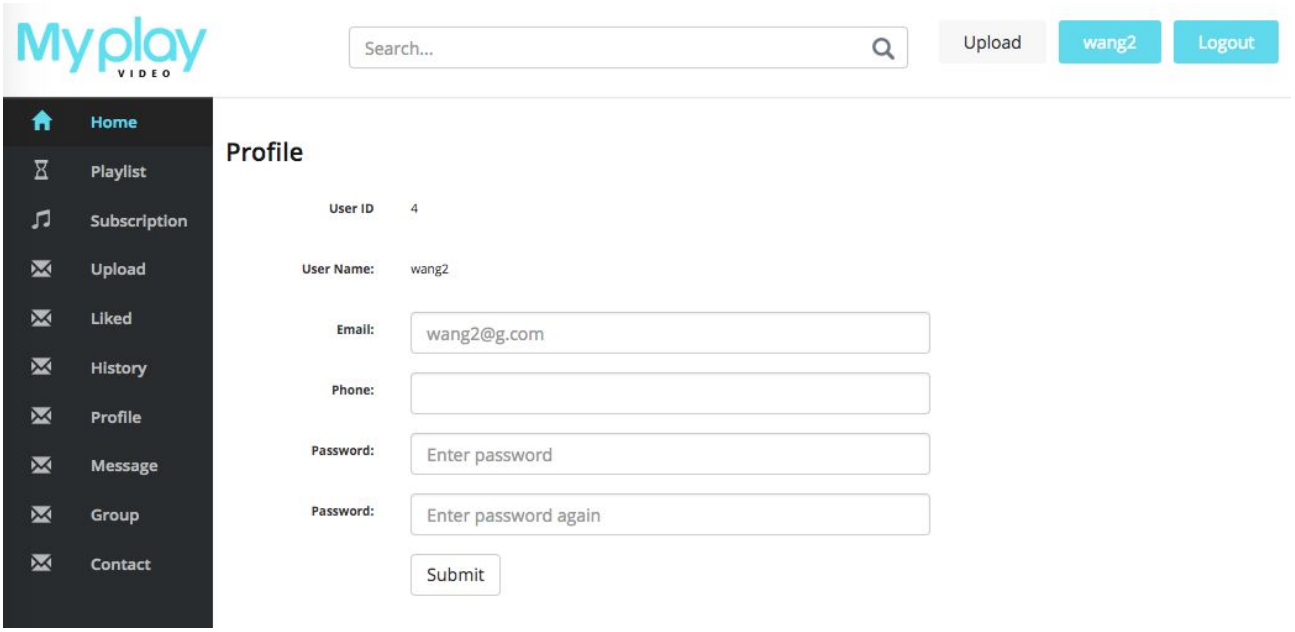

Figure 7. User Profile

As a test, I modified the phone number of wang2, from the following figure you can see the result. The phone number with 18888888888 was added.

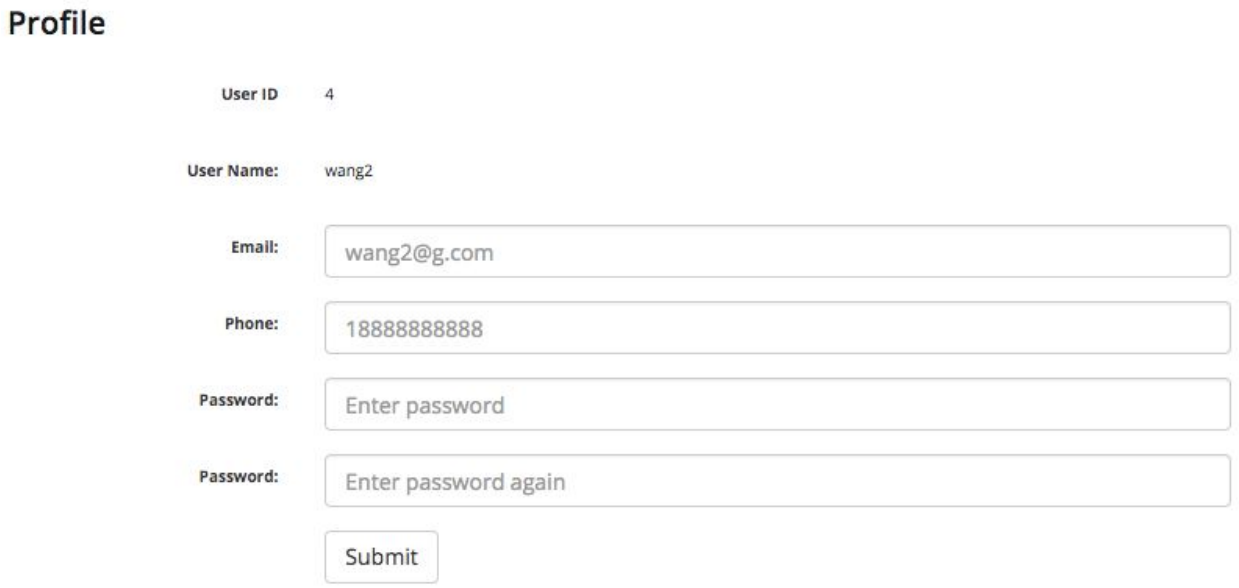

Figure 8. User profile updating

d) Contact list, Friends, User blocking

We also provide the contact list function which allow the users to add others to their contact list, and user can delete, block, or update their contacts. Users can add others to some specific group, and also can delete from the group or update to another group. They can block someone to view or download the videos they uploaded.

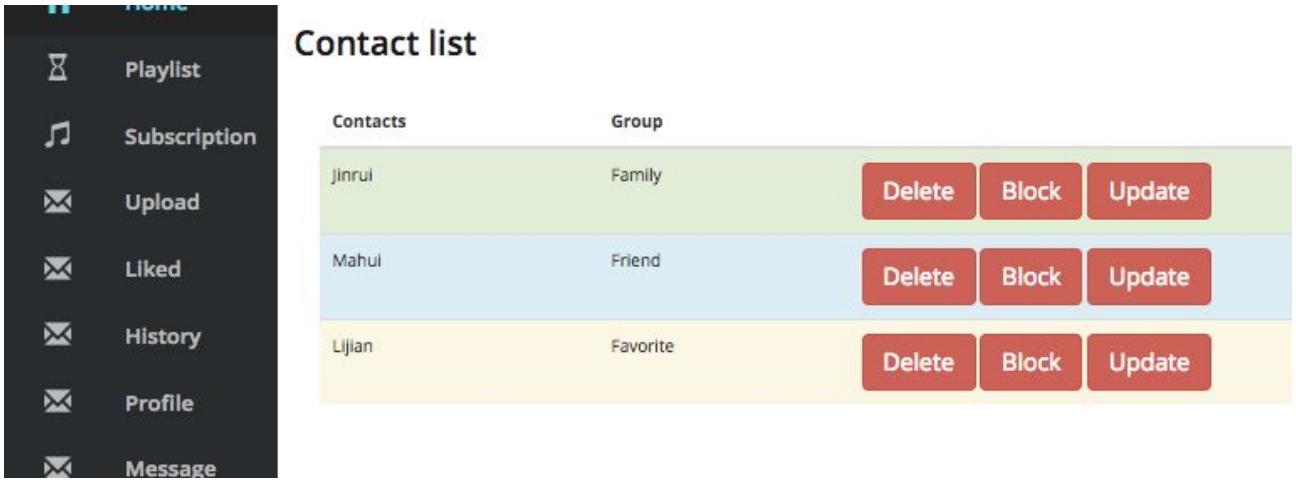

Figure 8. Contact List

2. Data sharing

Users who was signed-in can upload multimedia files into our website. We provide the interface to allow users to input meta-information about the multimedia files. Users, no matter signed-in or not, can download and view media files our website through a web browser. we also provide the function to allow the users to set the sharing methods for media files that a user uploaded. Meanwhile, Users can block certain users from downloading or viewing media files that they uploaded.

a) Upload

Users can upload their multimedia through the interface we provided, they can click the

upload button after they login. The following is an example:

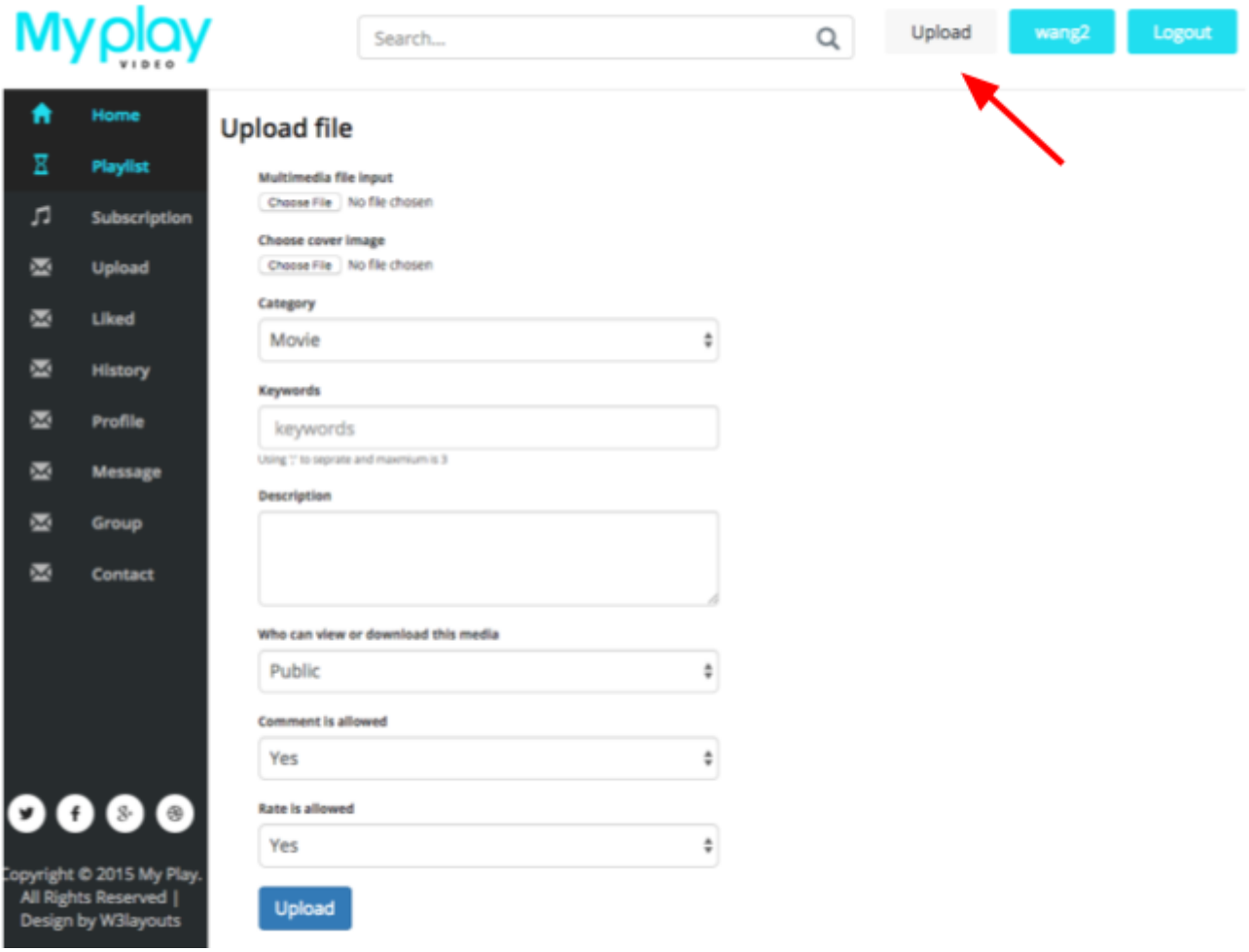

Figure 9. Upload File

b) Meta data input, Download/View, Sharing/Blocking

Users can choose to input some media information about their files, which include cover image, description, category, keywords, etc. Also, when a use upload his file, he can choose the sharing method, which include public, private, or only share to his friends. Meanwhile, users can choose some other users to block according to their user name. The following show the detials:

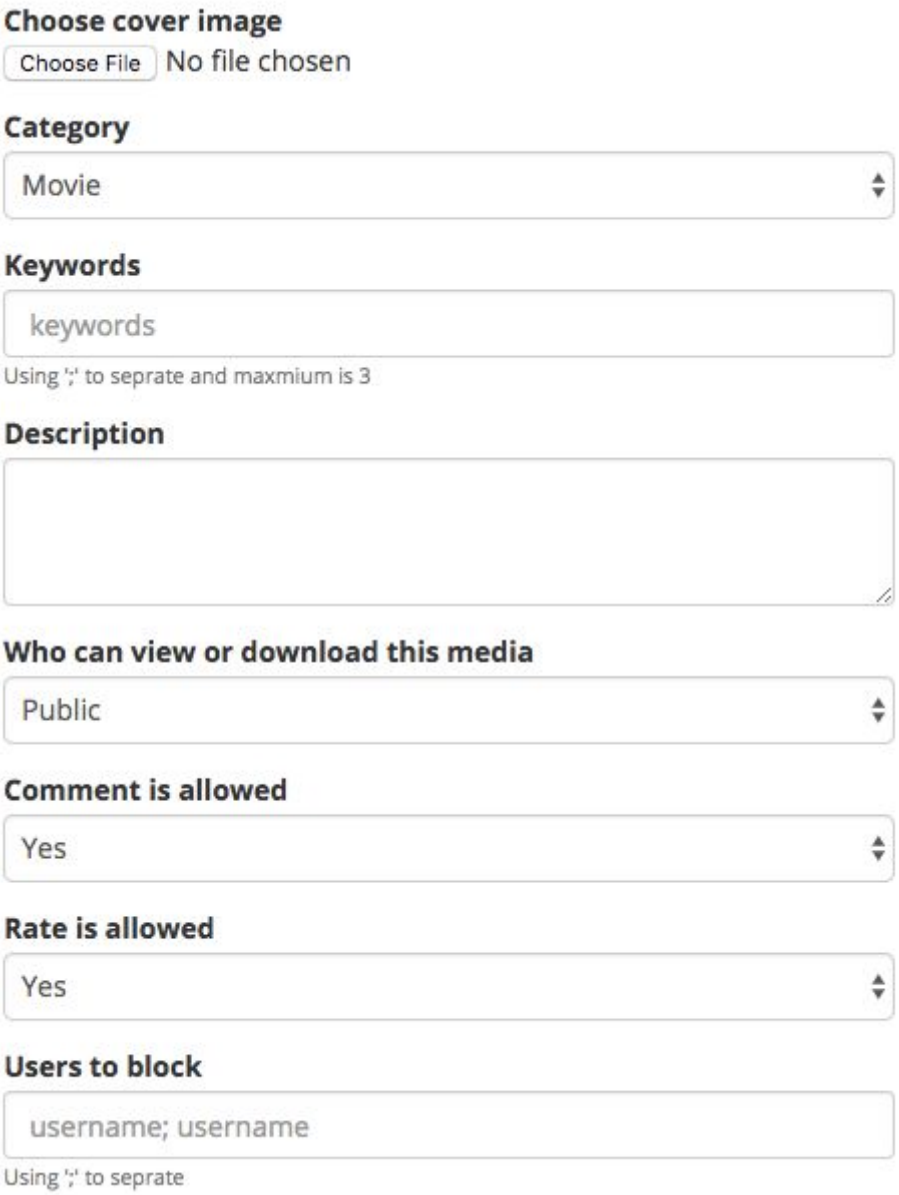

Figure 10. Detail of the Upload File

3. Media organization

In our website, all users can browse the multimedia files by categories. The users who signed-in can organize their multimedia in different ways, which include favorite lists and playlists. In addition, users can view the media file by different ways, like most-viewed, most-recently uploaded file. People also can order the files in different way.

a) Browse categories

We have a sidebar in our website with categories which include video, audio, and image, and the video consists movies, cartoons, and sports, audio consists songs and talk shows.

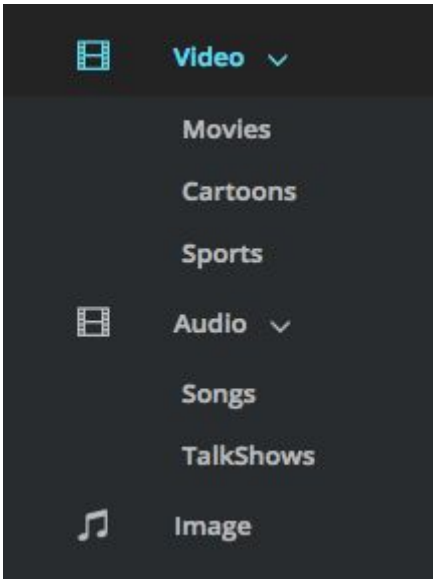

Figure 11. Categories

b) Channels

Users can browse all the channels in the website, and they can choose to subscribe the channel or remove a channel from their subscription lists. When user click the channels button in the sidebar, it will list all the channels.

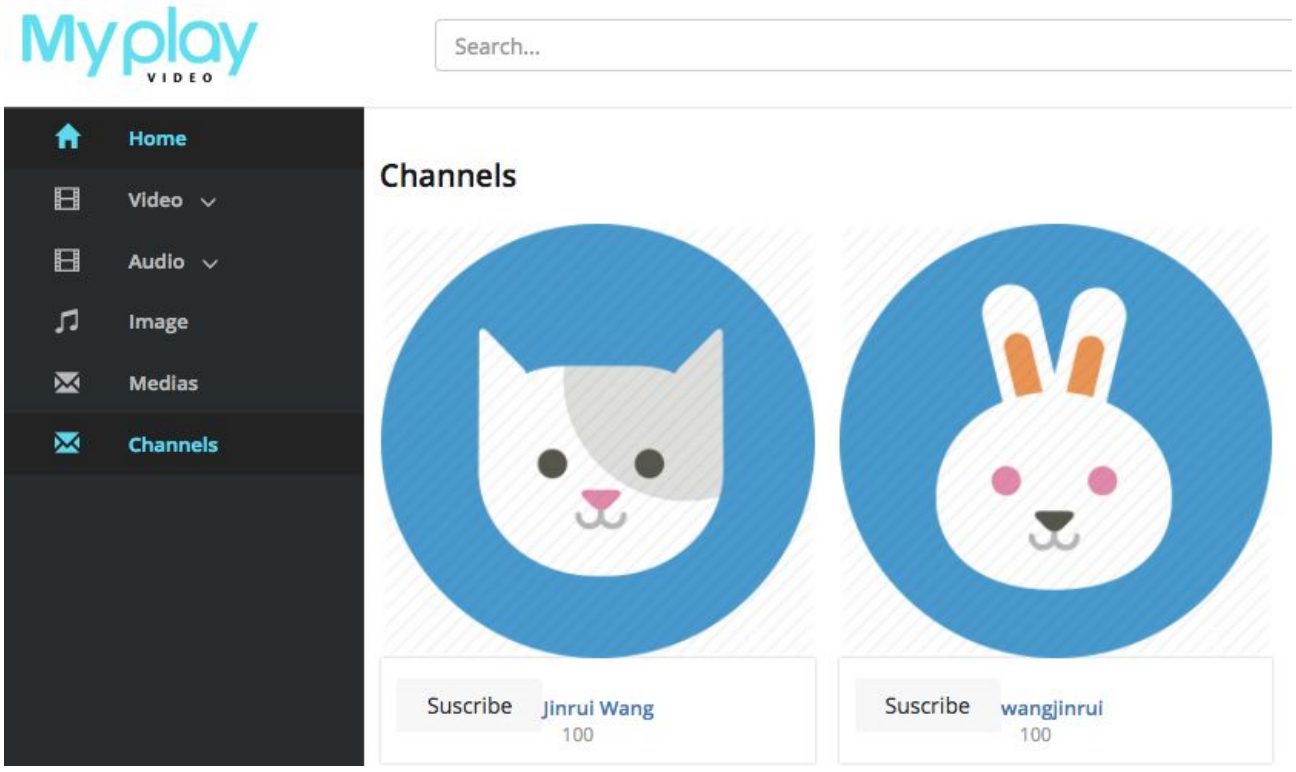

Figure 12. Channels

c) Playlists, favorite list

Signed-in users can create their own playlist by themselves, they can browse all the playlists they created by click the button playlist in their own personal page. The following shows the playlists of wang2, we can see he has two playlist which are favorite and favorite2.

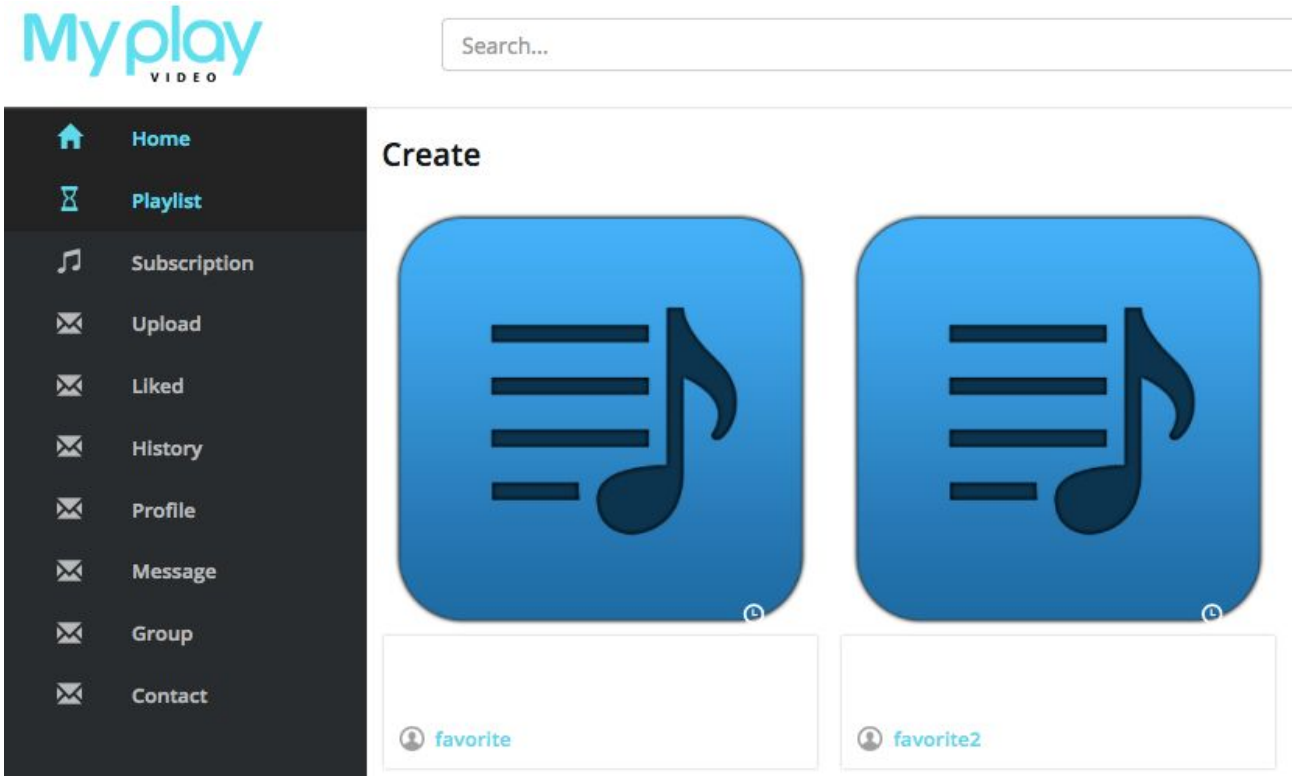

Figure 13. Playlist

d) Most viewed, Most recently uploaded

Users can browse all the medias by click medias button in the main page, they can order the medias by most viewed, most recently, size, and name of the medias. The following is based on the most viewed result, that you can see the most viewed media in the front.

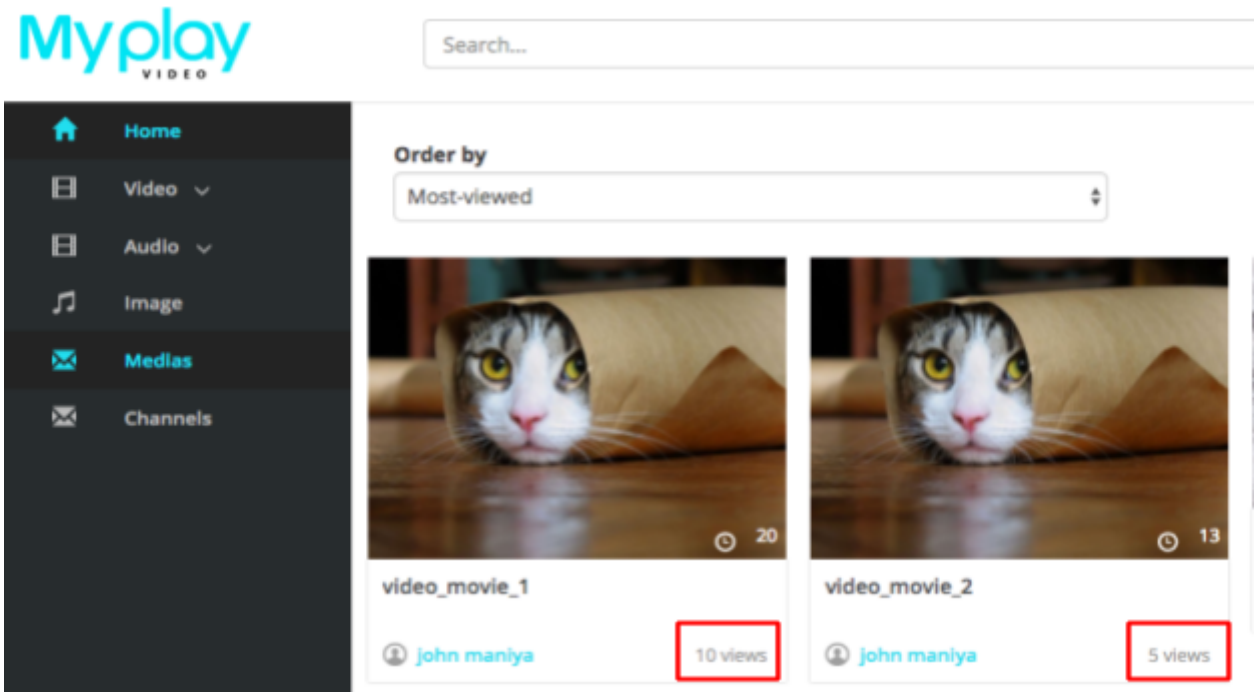

Figure 14. Ordering medias by most-viewed

4. User Interaction

In our system, signed-in users can interact with each other which include rating the media files, forming discussion groups, messaging to others, commenting a media.

a) Message

Users can exchange message through our message system. They can send message, receive message, and reply message.

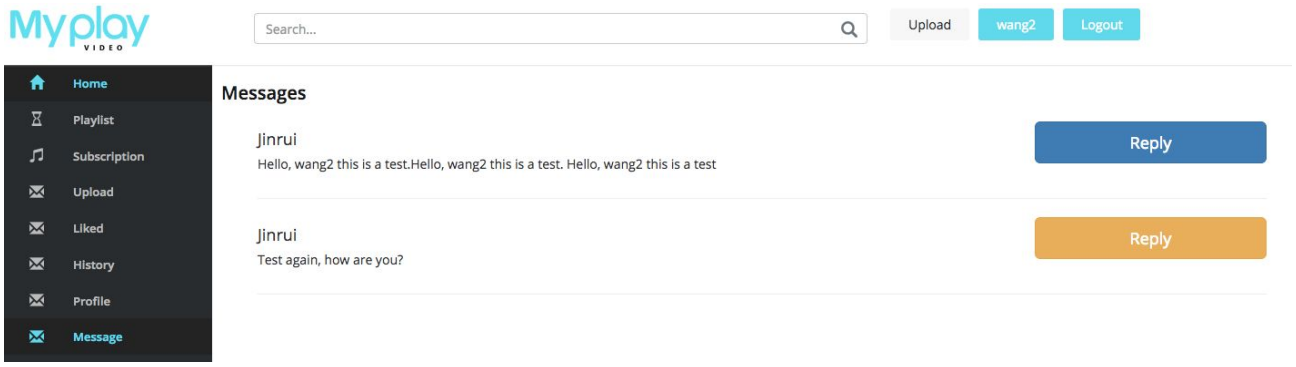

Figure 15. Mesage

b) Group discussion

For each media files, users can form a discussion group, they can talk the specific topics about this media file.

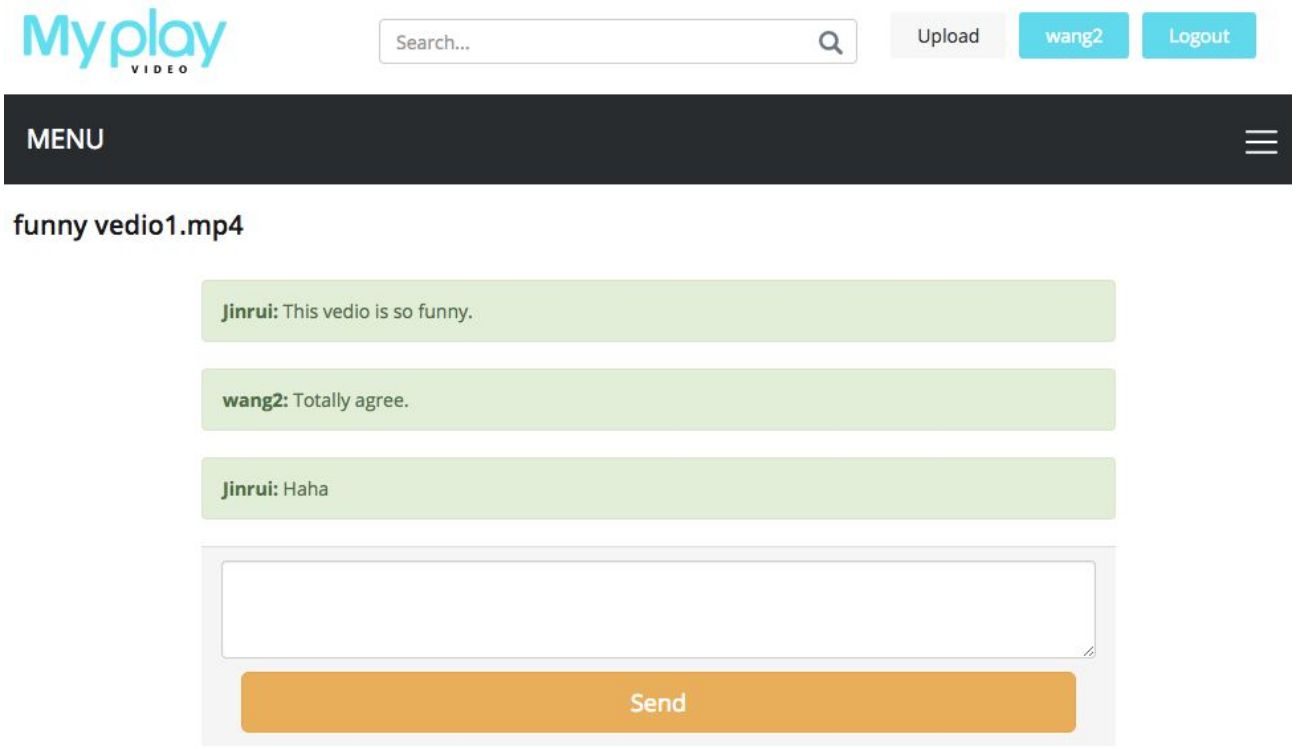

Figure 16. Group Discussion

c) Media Rating, commenting

For each media, the signed-in user can vote and comment to express their opinion. They can choose like and dislike and write some comments in the media play page.

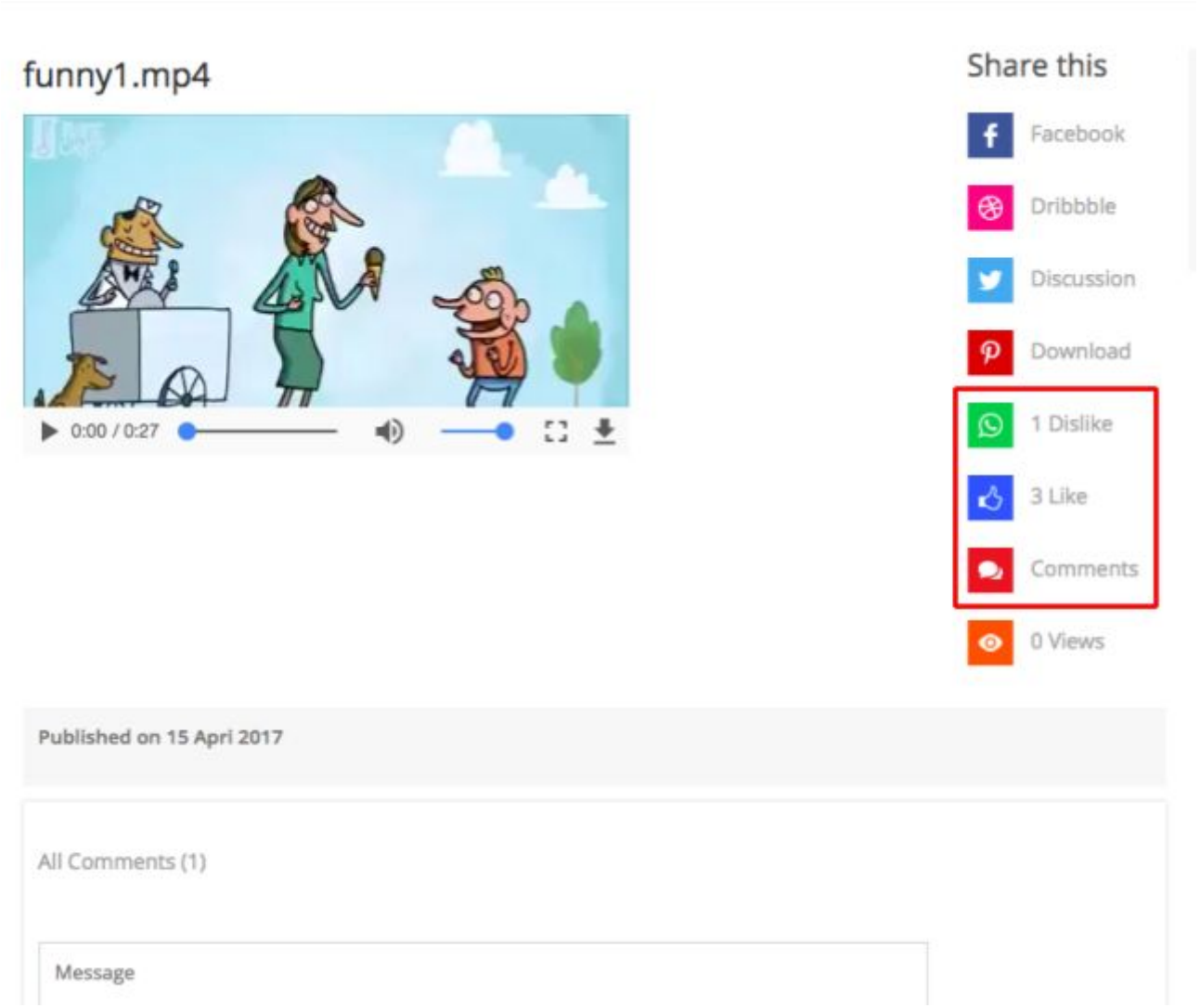

Figure 17. Voting

5. Search

In our system, users can search the media files using the search interface we provided. The search function are not only based on keywords, but also can use some basic features of the media file, like categories, size. Our system also can recommend user related media file according to what he or she viewed.

a) Media recommendation

When people watching some kinds of media, we will recommend the same kinds of media to them, like Youtube, our recommendation are in the side of the play page. You can see from the next figure that someone are watching a funny video, and we will recommend him others funny video.

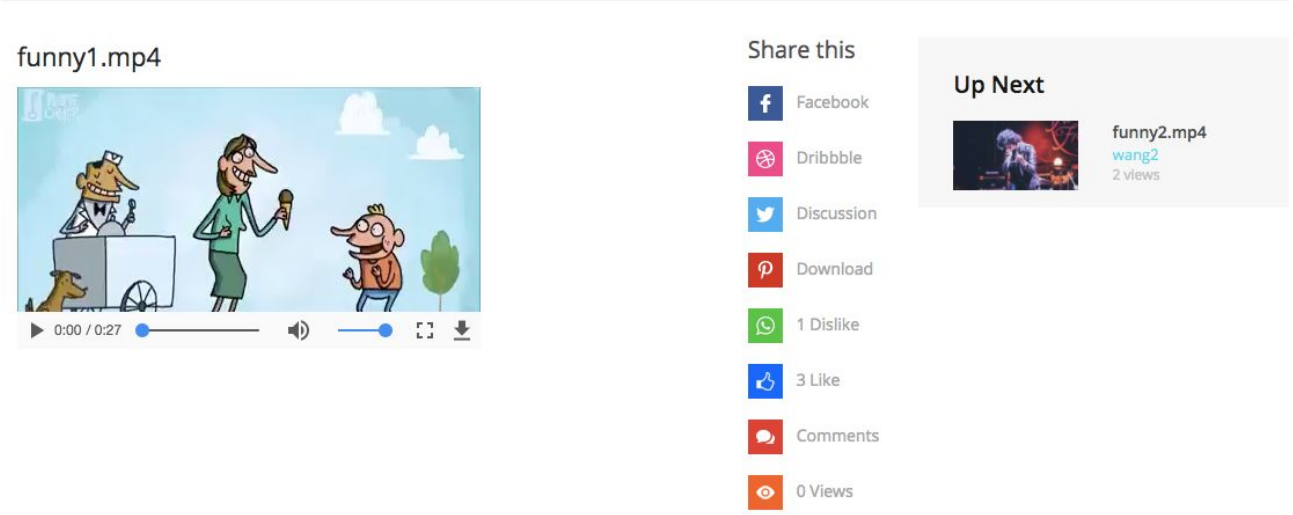

Figure 18. recommendation

b) Search media

In our system, you can search the media by keywords, media name, etc. the following figure shows the result when I searching the keywords funny.

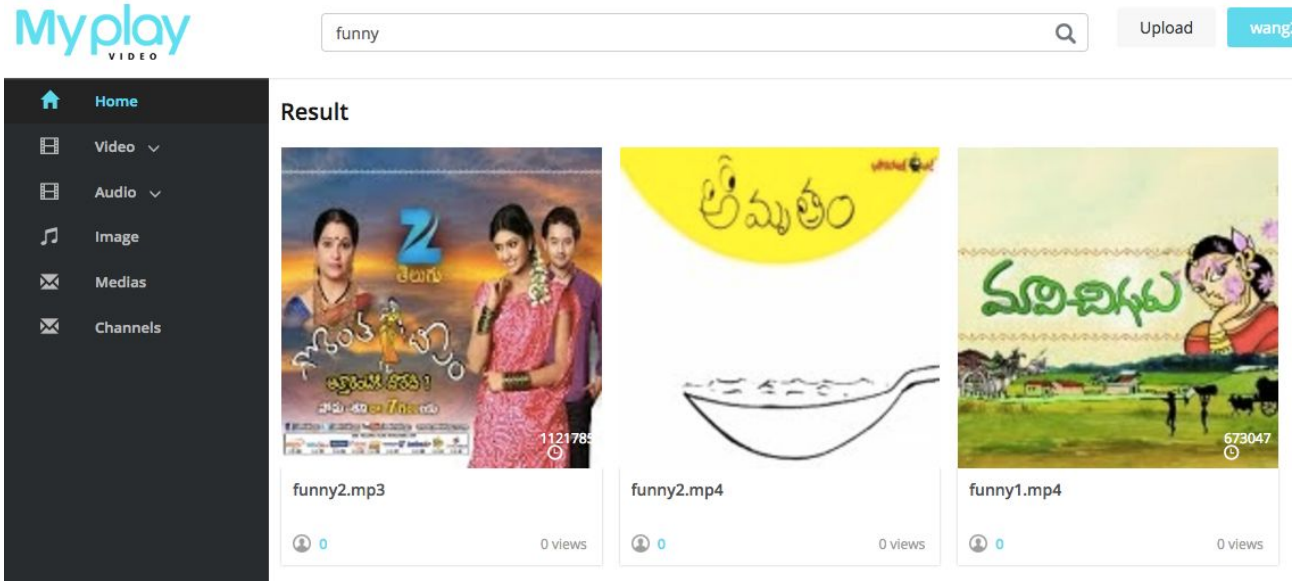

Figure 18. Searching

IMPLEMENTATION DETAIL

In order to implement our system, we use html, css, and javascript as our front end programming language, and we use an front end template which is found online. Based on this template, we made some changes, but we retained the basic framework. For the back end, we use php as our programming language. The following is the source code directories of our system.

```
jinruiw@webapp:~/public_html/web$
jinruiw@webapp:~/public_html/web$ tree -d
.
|-- css
|-- database
|-- fonts
|-- images
|-- js
|-- templates
`-- user

7 directories
jinruiw@webapp:~/public_html/web$
```

Figure 19. Main Directories

The database directory consists all the operations of database, include connecting to database, providing related API to the controller lay. It has the following files:

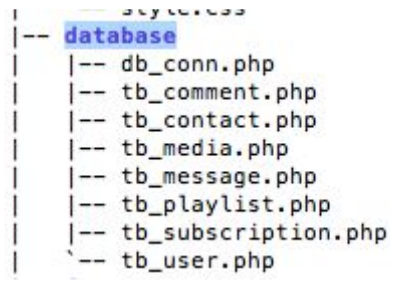

Figure 20. Database Directory Files

The templates directory includes all the templates for this webpage, like navbar, sidebar, or foot. It include the following files:

Figure 21. Templates Directory Files

The user directory includes all the operations in user page, like, update profile, check contacts, check messages, etc. It include the following files:

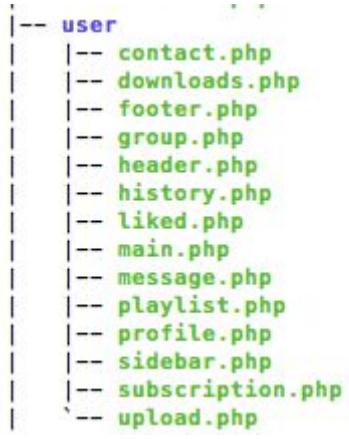

Figure 22. User Directory Files

In addition, in the main directory, we have the some files used to execute some common job, like login, logout, play video, etc. It include the following files:

```
jinruiw@webapp:~/public_html/web$ ls -l *.php
-rwx--x--x 1 jinruiw cuuser 2316 Apr  9 17:13 category.php
-rwx--x--x 1 jinruiw cuuser 2155 Apr 18 21:38 channels.php
-rw-r-xr-x 1 jinruiw cuuser  478 Apr 18 15:52 index.php
-rw-r-xr-x 1 jinruiw cuuser 1396 Apr 17 21:08 login.php
-rwxr-xr-x 1 jinruiw cuuser  213 Apr  8 19:13 logout.php
-rwxr-xr-x 1 jinruiw cuuser 3466 Apr 19 10:36 main.php
-rwx--x--x 1 jinruiw cuuser 2537 Apr 18 22:11 medias.php
-rwxr-xr-x 1 jinruiw cuuser 4978 Apr 19 10:24 play.php
-rwxr-xr-x 1 jinruiw cuuser  996 Apr 18 23:49 user.php
```

Figure 23. Main Directory Files

CONCLUSION

In this project, we use php, html, css, sql, etc to developed a multimedia website which called Metube according to the requirements. In this process, we learned how to build the architecture of a website and software, how to handle the requests use php in the server side, how to layout use css and html, and how to create and use the database by sql. We use the technology and knowledge that learned in the class though this process, and also by this process, we improved and enhanced our technology skill.

Thank you!