CPSC-6620 Database Management Systems

Spring 2019

Final project

# MeTube System

Team 3:

Ying Cai [cai7@clemson.edu](mailto:cai7@clemson.edu)

Yining Qiu [yiningq@clemson.edu](mailto:yiningq@clemson.edu)

## MeTube system

MeTube system is a modified version of the popular YouTube system (http://www.youtube.com). The content of MeTube system includes graphics objects, video, audio, images, and animation clips.

Using MeTube system, any users can view multimedia files online through proper media players embedded in the web browser. Our system supports .mp4, .mp3, .ogg, .webm, .wav, and all image types. However, .wmv is not supported in Chrome or Edge, but is supported in IE explorer.

Medias can be browsed by category. We have 8 categories, movie, music, sport, tv, talk show, cartoon, game and other. The user can also browse most viewed media, or most recently uploaded files, or most recently viewed medias (by this user or according to the ip if user is not logged in). Our system would recommend medias to user based on his/her recently viewed medias. If the user is not logged in, recommendation is made based the on the user’s ip address.

Any user can search medias. We support 2 kinds of search. The user can simply key in the keywords to search. Or he/she can use the advanced search. By advanced searching, the user can input keyword, choose media type, limit media category, limit media size or uploaded time or number of views.

A user can register an account. After registration, the user can update the information through user account.

He/she can upload multimedia files and manage their uploaded files. When a user uploads a multimedia file, meta information about the multimedia file should also be entered through the web interface. The uploader needs to choose category, input media name and tags, and so on. The user can also specify how to share the media file with others (share with everybody, share with just friends, or not share).

If the user is logged in, he/she can rate or comment medias, add medias to playlist, add medias to favorite list, or download medias.

After the user logs in, he/she can send messages to other users. He/she also can add other users to his/her contact list or friend list. Adding a user to the friend list needs approval. But adding contact is approved by default. A user also can block other users. Those blocked users cannot view the medias uploaded by the blocker.

A logged in user can create his/her own channel. We just allow one channel per user. The user can add any media files uploaded by him/herself to the channel. Other logged in users can subscribe the channel.

If the user is logged in, he/she can create a discussion group, or join a group. Group members discuss through group-message interface.

## ER diagram and Database schema

Following 2 pages are the ER diagram and the database schema. We have 22 tables in the database.

## Function design and implementation

Most functions are defined in the file function.php. But some other files also include functions, usually most of which are only needed locally.

In any table, the primary key is an artificial id, which is an integer.

1. Registration, login, change password, update information and logout.

The user registers through registration interface. The account is kept in table account. When the user logs in, the password would be checked. User will then be given a random string, which is used in user verification. This random string expires in 30 minutes. When the user logs out, the random string is cleared.

The user can change the password or update the information through his/her account.

The files, register, log\_in, require\_login, logout, changepassword, changepasswordprocess, userprofile, updateprofile, etc. handle the tasks.

1. Media uploads, downloads and removal.

Table media keeps the information of medias. When the user uploads a file, one tuple is added into table media. And the file is stored in the server. A thumbnail is captured at the same time. We also check the tags of the media, and add new tuple to table tagwordcloud or update the table.

When the user downloads a media, a tuple is inserted into table download.

The user can remove the files he/she uploads. The tuple in table media is deleted. If there are tuples of this media in tables download, flistmedia, plistmedia, rate, comment, channelmedia, and view, those tuples are removed too.

The file media\_upload, media\_upload\_process, deletemedia, etc. handle these tasks.

1. Browse and view media

The user can browse medias by media category, or by type (video, audio or image), or by the numbers of views of the media, or by the time of last view of the media. The tasks are handled by files index, recentlyviews, recentlyuploads, mostviews, category, videolist, audiolist, imagelist, etc.

When a media is viewed, a tuple would be added to table view, which records the user, time and ip address that this media is viewed by.

1. Rate and comment.

The user can rate a media. Rate should be an interger within [1, 10]. One row is added to table rate each time when a media is rated. If a user has rated one media, he/she cannot rate it again or delete his/her rate. The average rate of the media is shown when users view the media.

The user can submit comment under the media. Comment is insert into table comment. One user can add multiple comments to one media. Comments cannot be deleted.

The files ratemedia, ratemediaprocess, comment, etc. do the job.

1. Channel, playlist, favorite list