

CPSC 6620 METUBE

Technical Report

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Overview

The Project “MeTube” is an Interactive website similar to YouTube. It is designed and developed to improve upon YouTube, it supports various types of media files like videos, Images, Audio, Gif etc. It also allows to Add Friends, form Groups and allows messaging.

The Me Tube project we developed is hosted on:

http://webapp.cs.clemson.edu/~schatra/metube_template_2017/index.php

System Design

MeTube system, allows users to register or login to upload media and they are considered as “Channels”. Other users can find media using keyword searches, categories, or by viewing Friend’s Channels. Users can update their email address, password. Users can add other users as their contacts and friends to view their channels and also message them.

When a user uploads a media file, Meta information about the media file should also be an input. The Meta information includes the title and description of the media file. Users can also add media to their Playlists and favlists.

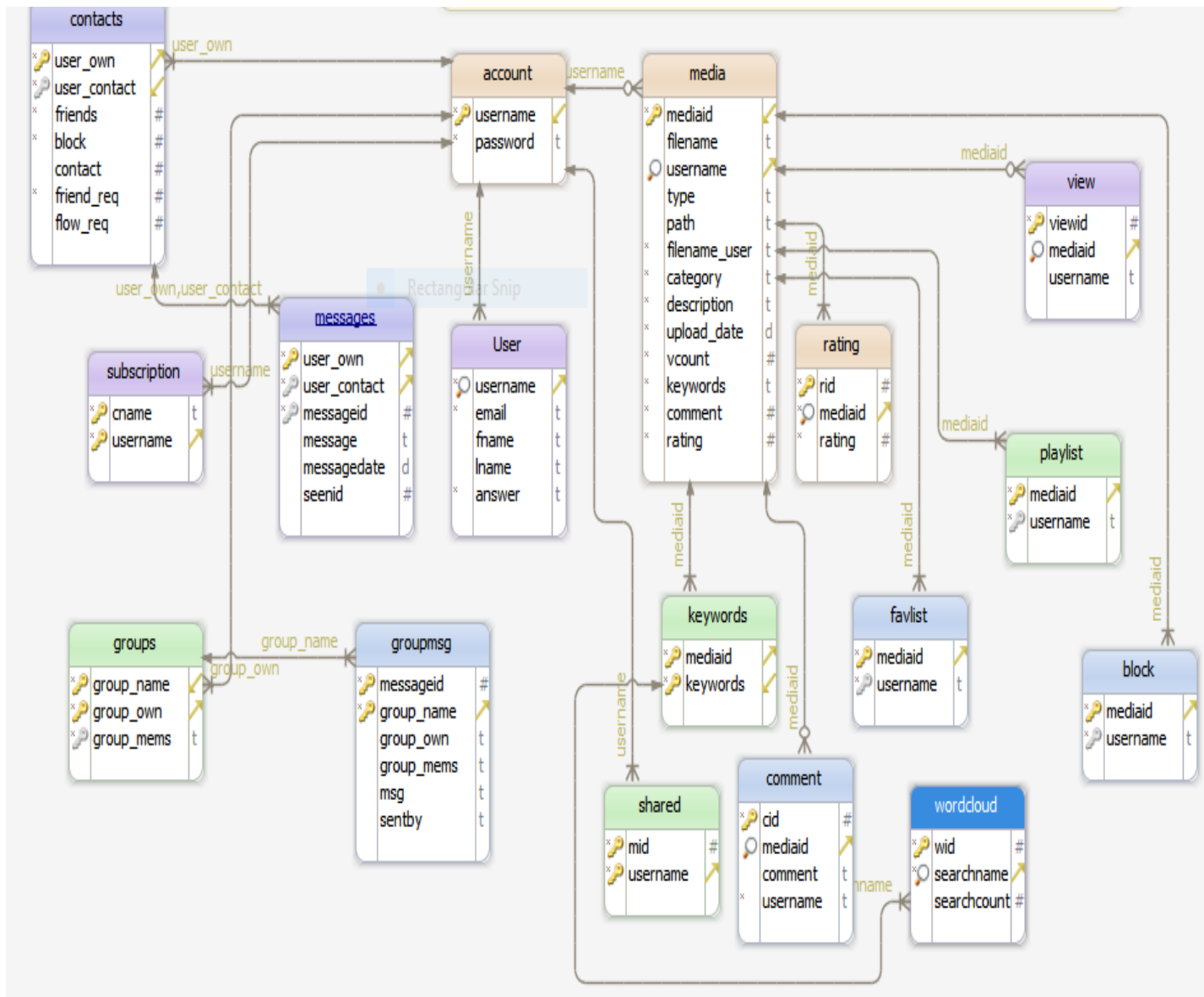
This messaging system works as a web-based email system with which users can send, receive, reply, and manage messages. A user can also create or join a group in which users share interests.

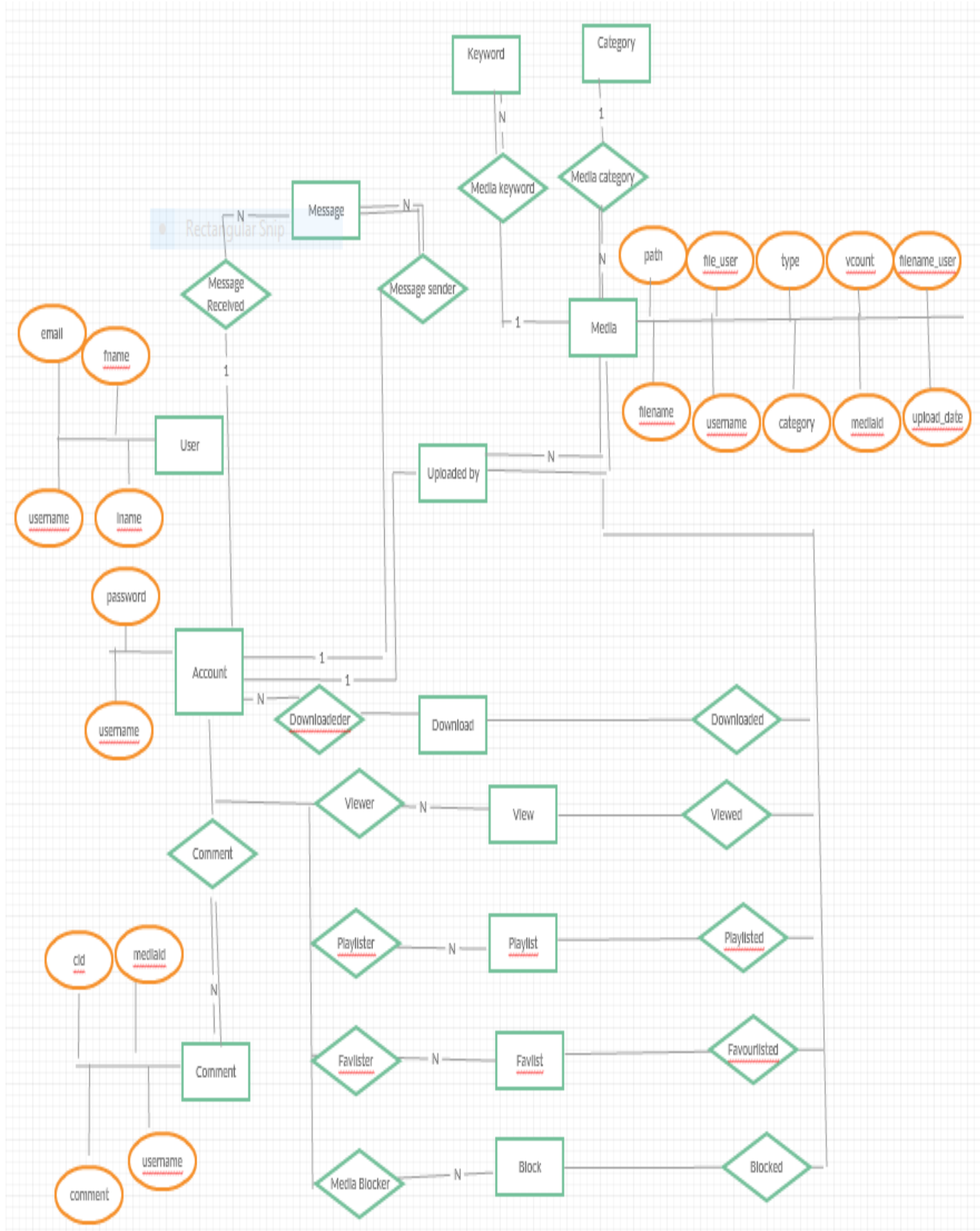
Any user can search MeTube system based on keywords or media file features (such as dates uploaded, file size, data format, etc.). Users can also browse media files by category, time, popularity, etc.

Metube doesn’t allow visitors to access the media or files. A visitor has to register and sign in to access the media.

ER Diagram and Database Schema

The Database schema and ER Diagram for the implementation of Metube is shown in following figures.





Functional Design

In my experience, I've found that the MVC (Model View Controller) design pattern to be particularly effective for designing web applications. It allows for a better separation of concerns between interacting with the database, rendering a user interface, and manipulating the application through GET and POST requests.

Because of this pattern the functionality of the application was divided into the following categories:

Models: PHP Classes that would be used to interact with the database to generate "objects" to be displayed and manipulated throughout the application.

Views: Files built for a specific templating language that would render the HTML for the user interface. The views needed to satisfy the following requirements:

Involve as little "code" as possible. The data required for the user interface should be collected by the

Controllers: PHP Classes that are used to manipulate the application's state through Models based on user input and render the associated Views. One method would be used in a GET request to render the form the other method would be accessed through a POST request and would attempt to use the Models to update the application. Controller actions shouldn't be complex. They simply act as the intermediary between Views and Models, calling methods to change the application's state.

Implementation Details

Registration

Users need to register for an account to make use of exciting functionalities of the system. Any user with a valid email can register for an account. At registration, personal information of user such as First name, Last Name, Username Email, etc. User needs to type password two times to confirm and the username selected by user should be unique. User is prompted to enter password again if password doesn't match in both fields. User is prompted if username is not unique. After a successful registration, a user can sign in to the system any time by producing the valid username and password provided at the time of registration. User is prompted if password or username either of them are correct.

Sign in:

User has to enter his username and password to view his profile and media. If the user forgets his password then user can click forgot password and then reset the password. The user can then sign in with the new password.

Profile update

Users profile is generated with the information provided at the time of registration. Users can view their own profile by clicking on the profile link. Users can update their profile at any time by clicking on Profile. Required fields needs to be filled out for a valid update or else the user is prompted to do so.

Contacts/Friends/Foe

Users can add contacts of other users of the MeTube System. Users can send friend request to their contacts. Two users are friends if and only if the recipient of the request accepts the friend request. All friend

requests to a user can be seen by clicking on the contacts tab and “view request” link. All the current requests are shown and a user can accept or decline or leave the decision to later time. All the list of added friends is also shown.

Foes are users who have been unfriended or Removed from the contact list by a particular user.

Block

A user who is a friend can be blocked. If a user is blocked then messaging and media sharing option will not be available

Upload

Only signed in users can upload media, while uploading the user needs to provide Meta information about the media such as the title, category and the description related to that media which can be used while searching. All the uploaded media are stored in media table along with Meta information related to the media.

Meta data input

Users will be asked to provide information about the name of file, description of the media file and keywords related to the file.

The user can also enable or disable commenting on the media file. The user further can enable or disable rating on the media file.

Download /View

Users can download media from metube. Users are able to play different kinds of media using view. A user is able to play video of different formats. when a media is being viewed once is able to see the media title, media rating etc. Whenever a user views the media it is stored in the view table. An average rating out of 5 is displayed for each media. Comments on the media is also displayed on the button sorted according to time.

Media sharing/Blocking

A user can block other user’s media. It prevents him from seeing that media and also no more suggestions about that video occur. Whenever a

user uploads a media by default is shared to public. The user has the access to the condition of sharing from public to share with friends only in the mychannel page.

Browse by Categories

A user can browse media files by the categories such as Sports, Kids, Entertainment, Education, Movies. Whenever a user uploads a media, the application asks to select the category. So based on that category the media is available in browse_list page.

Channels

Channels contain all the public videos by a particular user, each user can only have one channel. Users can view channels of other users through browse by channel. Users can subscribe to other user's channels. Users can view their subscription in my subscription page(subs.php). Every user can view the videos he uploaded through mychannel.

Playlists

Users can add media their own playlist by clicking on the Add Playlist button. All playlists are stored in table Playlist. The user can click on playlists to view the media added to his playlists

Favorite list

Users can add media to favorite list by clicking on the Add favlist button, each media can be added only once by each user. Users can view their favorite lists by clicking on the favorite link at home page. All the media in the favorite list are store in the favorite table.

Most Viewed

Users can view the most viewed media on the home page. This automatically gets sorted based on the view count and displays on users page.

Recently uploaded

Users can view the recently uploaded media of others users through the recently uploaded page. It sorts according to the date and displays it to the user.

Messages

Users can send messages to one another, any user can send a message to other user, if both the users are friends. Users can compose a new message by the click of Message button on the user's profile, and also users can reply to a specific message. Messages are stored in message table with related information such as sender, receiver, timestamp etc. Messages are ordered by time.

Group discussion

Users can create groups and can add their friends in to the group. By clicking on group tab user can see all the groups he is part of and also he can create new group by clicking on group discussion. But he needs to have friends in the friend list table to be able to add members in the group. All members of the group can take part in group discussion and can post their comments on the discussion. Admin who has created the group can only add members to the group. All the different groups are stored in the groups table and all the discussions related to each group are stored in groupmsg table.

Comments

When user views a media, he can also view the comments for that media. He can also post comments. All comments are present below the video. User can delete the comments entered by the user.

Media Rating

Users can rate the media from a scale of 1 to 5. There is an average rating which will be displayed for each media.

Keyword based search

There is a search bar in the browse page. The user can enter various keywords and the search results will be displayed accordingly. The user can view these media

Word cloud

Users are able to view the word cloud which is provided on the search page accessible at all times. The word cloud displays the search keywords for any media file. Each word in the cloud is hyperlink and clicking on any word would give you the search results(media files) for that keyword.

Media recommendation

The application automatically suggests some recommendation to the media. It is based on the type of videos which user watches more frequently.

Feature-based media search

The search page contains filters option. This filter option contains various features. So user can click on those features and view the results accordingly.

Sign out

A user can sign out at any time using the sign out button. The session is cleared and user is redirected to index page.

Test Cases and Testing Results

Unless it is specified, all the following test case is tested under a Metube account.

Case 1

A user can register for an account to use the Metube system. Password

needs to be confirmed during registration. If you use email to register, the email format needs to be checked during the registration.

A user can sign-in and update his/her personal profile, such as changing the password and other personal information. After logging in, a user can log out at any time.

Steps

1. Click "Register" at home page
2. Fill out the fields and click "Register". Test different cases of email address and password to confirm they are correct.

3. Check that the user name is not taken by any other users.
 4. Sign out of MeTube and try signing back using wrong password.
Confirm that the form has not been submitted and that the User has not been signed into MeTube
 5. Sign in again and click on "Profile"
 6. Change the email and password
 7. Click on "Save"
 8. Click on "profile" to confirm the profile has been changed
- Results: Passed

Case 2

A user has a contact list, a friend list and can manage these lists. You can block some users so as to prevent them from adding you to their friend/contact lists. You can also remove the block.

Steps

1. Click on "Contacts" on the navigation
2. Click on "add contact" for random users.
3. Click on "Add Friend" for those in your contact lists.
4. Check if "Add Friend" is changed to "Request Sent".
5. If user2 accepts friend request then user1 can send a message or block

Results: Passed

Case 3

A signed-in user should be able to upload multimedia files into the Metube system. During uploading, the user should be able to input the meta-information about the multimedia file, including the title and description of the media file.

A user can delete any media she/he uploads.

Steps

1. Confirm that the "Upload file" button does exist in the navigation
2. Confirm that you can upload with title input, description and category.
3. Fill out the form to upload a file.

Results: Passed

Case 4

Internet user should be able to view media files available in Metube system through a media player embedded in the web interface.

Blocking user: a user can block the media. A user can also remove the block.

Steps

1. Sign in with user 1 and upload a media.
2. Block a media.
3. Go to block list in the navigation bar and unblock the media
4. The media appears back.

Results: Passed

Case 5

All users should be able to browse the media files by categories

Steps

1. Click on “More” section on the navigation
2. Go to Browse by category
3. The media appears based on category

Results: Passed

Case 6

Users can also organize media files they viewed into playlists. A user can add medias to the playlist and remove medias from the playlists.

Steps

1. Click on “add playlist” section on the media page
2. Select a media and click on “add to playlist”
3. Click on “Playlists” section on the navigation and confirm that the media is in the playlist
4. Click on “remove” of the selected media and confirm that it is deleted from the playlist

Results: Passed

Case 7

A user can create a favorite list of media files. He/she can add his/her favorite medias to the favorite lists and remove medias from the favorite lists.

Steps

1. Select a media and click on “Add favlist”
2. Click on “Favorites” section on the navigation and confirm that the media is in the favorite list
3. Click on “delete” of the selected media and confirm that it is deleted from the favorite list

Case 8

A visitor can view the media files or view other users.

Steps

1. A visitor goes to homepage on the website
2. The visitor has to Logon or Register to get into the metube system and perform operations

Results: Passed

Case 9

Show the most-viewed media files: ranking the medias by the number of times viewed by users. Show the most-recently uploaded files: ranking the medias by the upload date.

Steps

1. Click on “More” section on the navigation
2. Select most viewed and recently uploaded
3. Confirm that the medias are ordered correctly

Results: Passed

Case 10

Send message: a registered user can send messages to other users and receive messages from others users.

Steps

1. Sign in to user 1 and click on “Contacts” section of the navigation
2. Click on “messages”. Fill in the form of recipient (user 2) and message and click on “send”

3. Sign out and sign in to user 2.

4. Click on “My Messages” section of the navigation again. Confirm that the message is received by user 2

Results: Passed

Case 11

A user can comment a media file.

Steps

1. Select a media

2. Comment under the media and submit it.

3. Confirm that comment is correctly shown for the media

Results: Passed

Case 12

Media rating: a user can rate the media file he/she viewed by giving a score.

Steps

1. Select a media that is set to be allowed rating
2. Rate the media and confirm that the rating shows correctly

Results: Passed

Case 13

A user can build a group and join in a group for making discussions.

Steps

1. Click on “Group Discussion” section on the navigation
2. Build a group by filling the name and clicking on “submit”
3. Confirm that the group is created
4. Send messages in the group using “Message”
5. Sign out and sign in as user 2
6. Navigate to “My messages” and check for group message

Results: Passed

Case 14

Keyword-based search: a user can search the media file by keyword

Steps

1. Fill in the keyword “Music” in the blank of “Search” and click on “Search”
 2. Confirm that all the results are showed correctly
 3. Fill in a random keyword “dsfsd” in the blank of “Search” and click on “Search”
 4. Confirm that no search is showed correctly
- Results: Passed

Case 15

Word cloud: there is a word cloud to show the keywords of the media files in the system

1. Steps
2. Click on “Word Clouds” near the search bar
3. Click on any of the word clouds
4. Results will be displayed

Results: Passed

Case 16

Feature-based media search: a user can search the media through other features, such as media category, file size, upload date, etc.

Steps

1. Click on “Filters”
 2. Choose the required filter and submit
 3. Confirm that all the results are showed correctly
- Results: Passed

User Manual

What Metube Visitors can do

MeTube visitors are not given permission to access any media files or another user's data. A visitor must Register and provide basic information to be a User of the system.

What Metube user can do

MeTube Users are allowed to upload, edit, favorite, and comment on Media. They can also manage Playlists and Subscriptions, Message other Users, and update their profile information. Users are also able to sign out of MeTube at any time by clicking "Sign out".

Updating Profile Information

A User is able to update their profile information at any time. This allows them to change their information associated with their account, and their password

Adding users to contact/friend

A user can add any other users to contact/friend. After adding, the user can view in the “contacts”/”friends” section of the navigation

Uploading Media

A User can upload Media by clicking “Upload” and filling out the form of title, description, category and keywords

Favoring and commenting on Media

1. User can favorite a media by clicking on the “Favorite” button when viewing a particular Media
2. A User can Comment on a Media by scrolling to the bottom of the page and filling out the Comment form, then clicking “Add Comment”. Comments cannot be deleted

Adding and managing Playlists

1. Playlists can be managed by adding files to playlist
2. To add Media to the Playlist, just select the Media from the list of Playlists when viewing a Media and click “Add to Playlist”
3. The items in the Playlist can be removed in the playlist

Media rating

A user can rate the media and also view the average rating of the media

Messaging

A user can view their Inbox, read Messages, view their sent Messages, and write a new Message. This is accessed by clicking on “Messages” section of the navigation