CSE 3105/CSE 3137

OBJECT ORIENTED ANALYSIS AND DESIGN

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COURSE PROJECT: *Media Browser Application*

Requirements Analysis Document

Group 12

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2 Introduction

We started this project by revealing the pros and cons of today's media browsers. We noticed that they have a lot of old-fashioned features along with their positives. We tried to protect their positive aspects and improve their shortcomings. Our system ensures improved usability and improved reliability for its customers. Our system was made with a very simple design in order to make the lives of its users easier.

3 Current System

Most of today's media browsers do not support cloud storage system. A media browser that does not support the cloud system is useless in today's world. Our system will benefit its users with this feature, as well as the other features. Its advanced and simple interface will provide ease of use.

4 Proposed System

4.1 Overview

The rest of this document provides general instructions, including the characteristics of the project and the functional and data requirements of the application. Functional and non-functional requirements of the system can be found below. Also, you can find our systems use case model and scenarios in section 3.4.1 and 3.4.2. And the glossary can be found in section 5.

4.2 Functional Requirements

The user can display picture, audio and video files without any problems with the media browser we designed. While displaying audio and video files, the users can use functions such as stop, continue fast-forward or rewind, change the volume or mute, etc. While displaying the image files, zooming, rotating or various edits can be made on the image. The browser allows users to monitored together. The application has a flexible structure in terms of storage. It can work in a traditional or a cloud storage system. When the user experiences any problems, they can reach a solution in a short time by making an instant notification.

4.3 Nonfunctional Requirements

4.3.1 Reliability

The system securely stores user information and files. Without a permission nobody can access a user's data. It intervenes immediately in case of any crash or attack and protects user data. Also, the system shall provide storage of all databases.

4.3.2 Usability

It can be used in almost anywhere because Media Browser Application can open files with or without internet. App runs various file extensions without any trouble. Therefore, you don't have to worry about opening a media file.

4.3.3 Flexibility

The system can be connected with other systems easily and converting the system into desired shape which makes the system flexible. Some software or subsystems can be used to convert it easily, so our application compiles with other systems. We considered the flexibility in terms of species, attributes, functions. The App runs with almost all audio codec and file extensions.

4.3.4 Multilingual Support

Media Browser Application has language options. You can use the app in your native language.

4.3.5 Performance

Minimum system requirements are low. It can run smoothly on many devices and operating systems. Also, the apps minimum internet requirement is low. Thus, the internet connection is stable despite of the bad internet connection. It supports high speed bandwidth.

The system can support up to 4 people to be connected to the same party and you can watch same thing with you friends at the same time.

4.3.6 Security

Embedded Website protection is used to ensure that third-party users do not participate during group meetings. Also, usernames and passwords are encrypted with the Sha-2 algorithm. Any third-party user or hackers cannot access this information. User's personal data and application usage data are not shared with third party applications. Your data is safe with us.

4.3.7 Supportability

Our application can work with numerous operating systems such as Android, Windows, MacOS, iOS or almost any Linux-Based operating systems. Rest assured you can run the app in any environment.

Media Browser App supports screen resolutions up to 4k and adjusts the screen size of the application.

4.3.8 User-Friendliness

The Media Browser App has an easy-to-understand interface. It is easy to learn so everyone at all ages can use it without instructions.

4.4 System Models

4.4.1 Scenarios

Scenario 1:

Scenario Name: Road Trip

Participating Actor Instances: Bob: User

Flow of Events:

1.Bob and his daughter Alice is on a road trip with caravan.

2.At the 6th hour of the road trip it was getting late, so they pull the caravan to the caravan site on the gas station to sleep.

3.There is a video that Alice needs to watch before going to sleep, she can't sleep without it. Bob looks for his laptop to open the video but can't find it and he realizes that he left it at home.

4.When Alice just starts to worry Bob remembers that "he uploaded the video to the media players cloud system, so he opens the media player from his phone and opens the video from the cloud system of the media player.

5.After watching it Alice goes to sleep easily. Next morning, they continue the road trip happily.

Scenario 2:

Scenario Name: House Party

Participating Actor Instances: Lana: User, Janice: User, Richard: User, Michael: User

Flow of Events:

1. World is crushed with a Covid-19 pandemic. Therefore, everyone was stuck inside their homes.
2. Lana calls Michael and said that she misses hang out together.
3. Lana called their friends which is one of the favorite groups of their high school "The Four Horseman" and Janice and Richard join the call.
4. After some chit-chat and laughs, Richard remembered their old days and saying that how much he misses them.
5. After an emotional moment, Janice suggests them to open the Media Browser App and join her party.
6. Janice who is the host of the party uploads some of their videos and photos which is stored in her phone to the cloud service and shows all of them simultaneously.
7. After spending some time watching old videos together, they realized that even with the pandemic they are still close friends.

Scenario 3:

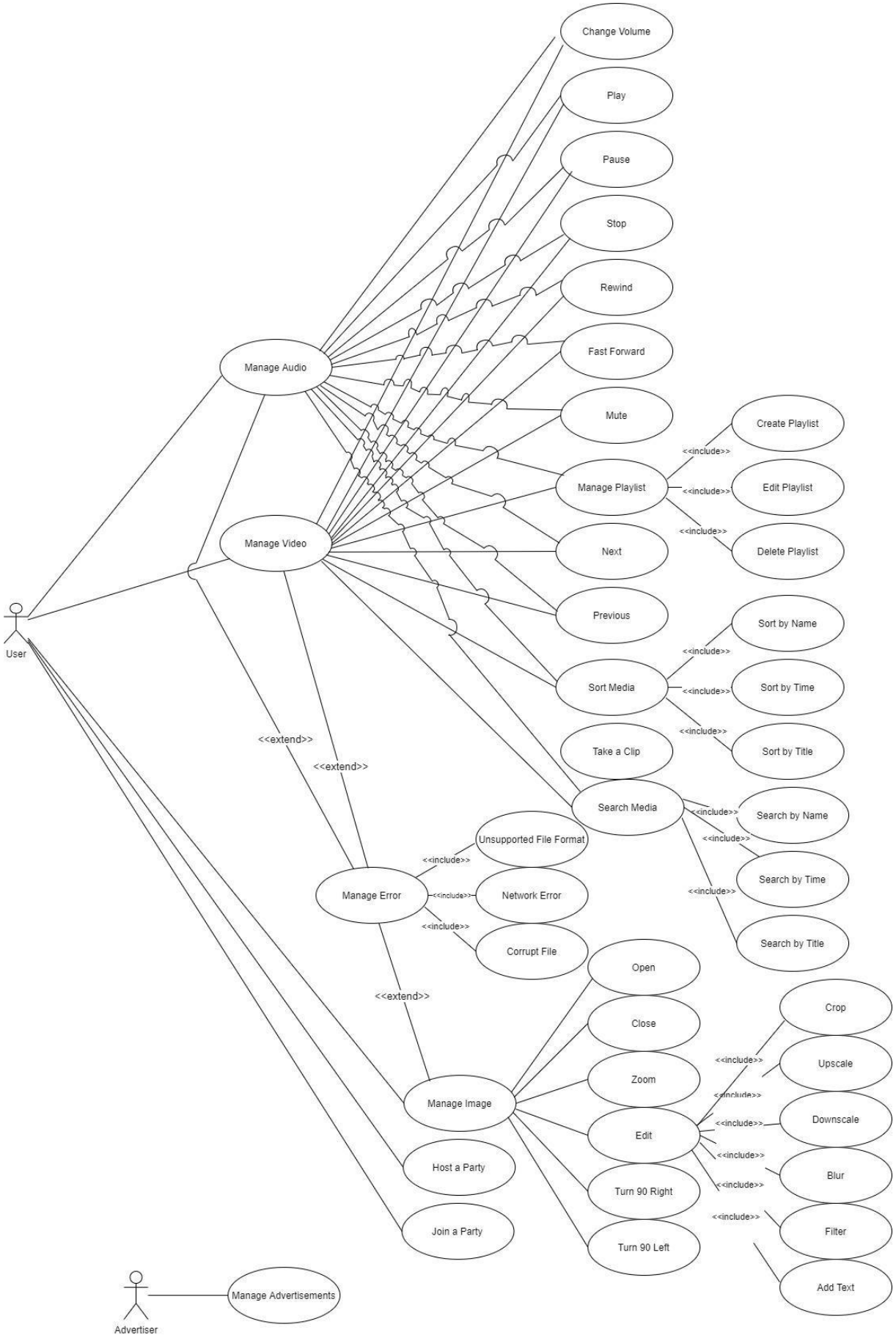
Scenario Name: Counterfeit Jewel

Participating Actor Instances: Bride: User, Groom: User

Flow of Events:

1. After the wedding ceremony bride and groom go to their local jewelry store.
2. They want to exchange their jewels which is gifted in the wedding to the cash.
3. The jeweler checked the golds he spotted one of them is counterfeit and can't exchange any of the goods.
4. Bride and her husband were shocked. They did not believe one of their relatives is fraud.
5. They immediately opened their wedding tape on their phone with Media Browser Application.
6. After some time searching who is the dishonest among them they find the one of the Bride's cousins steals one of the gifts and replace it with a fake one.
7. With a shock and a small argument between them they left the jewelry store unhappy and penniless.

4.4.2 Use Case Model


Change Volume
Play
Pause
Stop
Rewind
Fast Forward
Mute
Manage Audio
Manage Video
Manage Playlist
Create Playlist
Edit Playlist
Delete Playlist
<<include>>
Next
Previous
Sort Media
Sort by Name
Sort by Time
Sort by Title
Take a Clip
Search Media
Search by Name
Search by Time
Search by Title
User
<<extend>>
<<extend>>
Manage Error
Unsupported File Format
Network Error
Corrupt File
<<extend>>
Manage Image
Open
Close
Zoom
Edit
Turn 90 Right
Turn 90 Left
Crop
Upscale
Downscale
Blur
Filter
Add Text
Host a Party
Join a Party
Advertiser
Manage Advertisements

Critical Use Cases:

Edit: It allows user to edit the image like adjusting the aspect ratio, cropping the edges or adding a filter etc.

Host a Party: It provides user to create a party. Through this case anyone who knows the password can join the party. And they can surf the media together.

Manage Playlist: It provides user to manage playlist. Like adding, deleting,editing,creating,adjusting videos etc.

Sort Media: It provides user to sort media according to time, name and title.

Search Media: It allows user to search and find media which the user sorted before.

4.4.3 Object Model

<Object model section documents in detail all the objects we identified, their attributes, and, operations. As each object is described with textual definitions, relationships among objects are illustrated with class diagrams.>

Step 5 activity

4.4.4 Dynamic Models

<Dynamic models section documents the behavior of the object model in terms of state machine diagrams and sequence diagrams. Although this information is redundant with the use case model, dynamic models enable us to represent more precisely complex behaviors, including use cases involving many actors.>

Step 5 activity

4.4.5 User Interface Mock-ups

Our user interface link : https://pr.to/FSY3A6/

5 Glossary

Media Browser: A program or piece of software designed and written to fulfill a particular purpose of the user.

Database: A structured set of data held in a computer, especially one that is accessible in various ways.

Cloud System: Actually there is no cloud system. There is only someone's computer. This system means you can access this computer anytime anywhere. Your data will be stored in another data storage and through internet you can use that storage area however you like.

User Interface: The means by which the user and a computer system interact, in particular the use of input devices and software.

Data: Characteristic or information. This means data are a set of values and variables about one or more person or object.

Application: Group of programs that designed for users. In this system we designed Media Browser Application.

File extension: A group of letters occurring after a period in a file name, indicating the format of the file.

Audio Codec: A coded is a program capable of encoding and decoding digital data stream. Audio codec encodes or decodes audio.

Operating System: An operating system (OS) is system software that manages computer hardware, software resources, and provides common services for computer programs.

Third-party User: A user that is involved in a transaction but is not one of the principals.