mediaa—Saiph

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Mediaa attempts to give power to the user by making streaming your own media server streamlined and flexible. We will evaluate our interface design concept using a heuristic analytical evaluation and an empirical evaluation. We will utilize our revised paper prototype to gain insight into user experiences at this stage of development.

KEYWORDS

Heuristic evaluation; Analytical evaluation; Empirical evaluation; UI Usability; User-friendly; Discoverability

1. Introduction

We will perform an analytical evaluation and an empirical user test to evaluate the usability of our media server software. By using two types of evaluations, we will be able to reach a broader conclusion about what aspects of our software needs to be improved. The analytical evaluation will consist of two separate heuristic analyses. We will use Nielson's 10 heuristics for user interface design to evaluate our software prototype. The empirical tests will be conducted on two separate individuals. This will allow us to create a more accurate sample for the use of our prototype. We will also take into account the previous knowledge and experience the users have to conduct our tests. We hope to gain insight into how users will interact with our software as well as potential issues that might arise from these user tests.

2. Analytical Evaluation

Our analytical evaluation's primary purpose is to gain insight into how to develop our application's usability experience to help ease our users' cognitive load when making a decision. We have decided to use Nielson's heuristics, performed by two of our team members, for our evaluation criteria. Both team members will walk through various tasks that expose our application's core functionalities to examine their conformance to a few of the heuristics. These particular heuristics apply to the context of our application's use.

Some of the key tasks that will be used throughout the evaluation include:

- Using a premade account to login to the media server application
- Navigating to different media screens
- Adding media to the media collection
- Selecting, playing and restarting media
- Browsing media details

Throughout the heuristics evaluation process, our team members aim to put aside the fact that they worked on this application's design. In doing so we will try to see through our target user's lens to search for a more satisfactory media server experience. We will also examine our usability

experience from different user standpoints based on different technological skills. By doing this, we believe that it will help find an optimal solution to our application's usability experience and discoverability for a broad user base.

Adapted Heuristic Criteria

Here are Nielson's heuristics criteria that will be used to evaluate our application usability experience, as mentioned above earlier :

- Visibility of system status
    - Does our system always keep the user informed about what is going on, through appropriate feedback within a reasonable time?
- Match between system and the real world
    - Does our system speak the users' language, with words, phrases, and concepts familiar to the user?
    - Does our information appear in natural and logical order?
- User control and freedom
    - Does the user have the capability to leave an unwanted state without having to go through an extended dialogue when they make a mistake?
- Consistency and standards
    - Do our words, situations, and actions mean the same thing as the users expect?
- Error prevention
    - Does our system prevent errors from occurring and/or check for them and present users with a confirmation option before they proceed?
- Recognition rather than recall
    - Does our system minimize the user's memory load by making objects, actions, and options visible and recognizable?
- Flexibility and efficiency of use
    - Does our system cater to both inexperienced and experienced users by speeding up the interactions they have with accelerators?
- Aesthetic and minimalist design
    - Does our system have any irrelevant information?
- Help users recognize, diagnose, and recover from errors
    - Do error messages contain precise language to indicate any issues that the user might encounter?
- Help and documentation
    - Do we have concise documentation that helps the user better understand our system if they encounter an issue or have questions?

To make it easy on the team members who will be reporting on the issues found during the evaluation of our application's usability, they will rate each case they find according to four severity ratings. The severity ratings are as follows:

0 - I don't see this to be a usability issue.
1 - Low priority usability problem; should only be fixed as a stretch goal.
2 - Medium priority usability problem; there is a better way to optimize this solution.

3 - High priority usability problem; need to be fixed right away before our application's release.

Using this severity rating for the various heuristics while evaluating our application usability experience will help the team to focus on fixing the most critical issues first. This way, our team will be better prepared for a product release if there should be a delay in completing our product.

3. Empirical Evaluation

Our empirical evaluation aims to provide necessary information about the usability of our application and any issues in our current design. To expand our research and development we chose two users that exemplify two subsets of our user base. Although both users are computer savvy – an assumption we are making of users of media servers – one of the users has never used a media server in their life. The other user, however, has some experience using media server software in the past.

This empirical evaluation will provide crucial information to our team and test if our application's designs are up to our standards of usability. We aim to give our users a compelling experience that brings them back to the product, time and time again. To meet our requirements our media server needs to be intuitive and easy to use. This means that it should be simple for any user, irrespective of their skill using media servers in the past, to use our application. By testing our interface designs with two different users of varying degrees of experience, we can compare their experiences with our predefined goals of usability.

The evaluation itself will be prefaced with background information, explaining to our test-users the context of the application and the pre-conditions they will be provided with. Once the proper context has been given, the users will be tasked to use our media server. This task is multifaceted, and tests several fundamental functionalities of the application. The users will need to create an account in our application, using pre-existing login credentials provided to them in our prototypes. Once logged in, the users will then need to navigate through our application screens, and import a directory of movies from their local machine using the folder scanner. At this point their media server will now contain all the movies from the searched directory, as the import process is automated by the application. Finally, the users will need to select a movie and view it. In completing all these tasks, this evaluation will give the team an insight into the usability of our media server.

The first user subject to our evaluation is a male 4th year student studying ecologic engineering at Oregon State University. This user represents a user who is not accustomed to media servers as he has had no experience with them in the past. He is an ideal candidate for this evaluation because of his lack of experience. If the interfaces are not intuitive, it will become clear that our designs have issues in regards to their usability.

Our second user is a male 3rd year student studying computer science at Oregon State University. This user will represent a demographic of our potential users who have had past experiences with media servers. This user is ideal as we will be able to see if our media server performs to the expectations of a seasoned media server user.

The empirical test itself will be conducted using a low-fidelity prototype created by our team. This prototype contains images of our application, with all functional requirements for our test modeled by the various screens. The users will be guided through the prototyped screens by a representative of our team, taking them to and from different interfaces in accordance to the users' choices. The guidance will be limited and will not explain how the task needs to be done, but will instead mediate the user's experience for functional purposes.

The evaluation will begin after the task has been described to our test users, and all relevant background information has been supplied. Before the users begin, they will be asked if they understand the task clearly, and will get a chance to ask clarifying questions. Once the evaluation has begun, the observer will not provide any further assistance, aside from providing the functional support to simulate how our application works.

Throughout the entire process of this evaluation, the observer will record and document the user's behavior and experiences using the prototyped application. User questions and comments will be documented, as well as the observer's own notes about the evaluation process. The

observer will also ask questions after the task has been completed about the user's experience and record their responses. These observations will inform our future designs as we hope to expose any shortcomings in our prototype application. Any issues that are encountered while the users are completing the task will speak to issues in the usability of our media server.

Task Description:

The Mediaa application is a media server software application that will allow servers to host their owned media. With this media, the users can view the media on multiple devices, manage the media, and add more media. The prototype of the application will be utilized to simulate adding a movie to your library and viewing that movie through the application. The assumption is that you already have an account created with the application and that you are logged in, starting at the homepage of the application. You will not start with any media in your collection and instead, you must add the media to view a movie. You may use the simulation just like you would a normal desktop application, selecting, clicking, entering, etc. The navigation flow will be given to the user so that they can follow along with the UI as they navigate the UI to complete their task.

1. From the “Home” page navigate to your settings.
2. From your settings, in the “Manage Collection” section, add a folder to be scanned by the software by hitting the “Scan Folder” button.
3. On the folder pop-up select the correct folder that houses your media for scanning.
4. Navigate back from your settings if the scan was a success and proceed back to the homepage using the “back” button.
5. Go to view your movies by pressing the “Movies” button.
6. Select the movie “The Silence of the Lambs” by pressing the cover art in your movie collection.
7. Watch the selected movie by pressing the “play” button.

Interview & User Interaction:

The guidelines for the follow-up questions asked users about their experience navigating the app, as well as their thoughts and comments on various interactions throughout the app.

1. Was the sign-up process intuitive and easy to understand?
2. How did you feel about the process of adding media to your server? Did you find that too much information was displayed at once or was it just enough?
3. How difficult was it to add a media file?
4. Can you think of any changes that would improve the interface?
5. How difficult is it to find a media file you were looking for? Are there any other options you would like to sort or separate the media by?
6. Did you find any of the transitions or interactions confusing at any point in the application?
7. What was your overall impression of the movie collection page? Would you change it in any way?
8. What did you like the least about the interface?
9. What did you like the most about the interface?
10. Did you have any other thoughts or comments about the application that you would like to share?

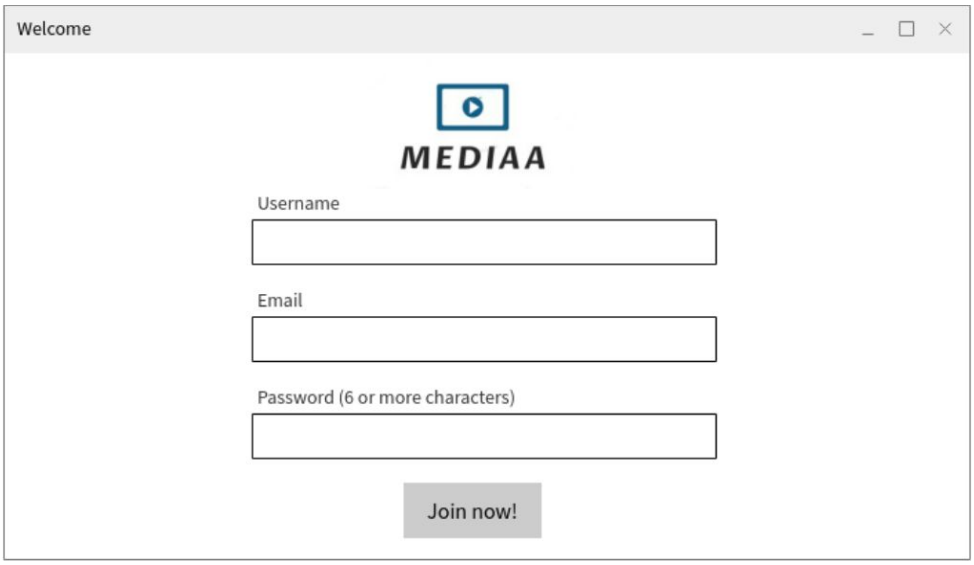
The prototype used for this evaluation is attached at the end of this document. The screens display the basic elements in the design of our interface. The screens will be shown virtually with details on how they transition. The evaluators will be recording the comments, thoughts, and interactions of users while presenting them with these prototypes.

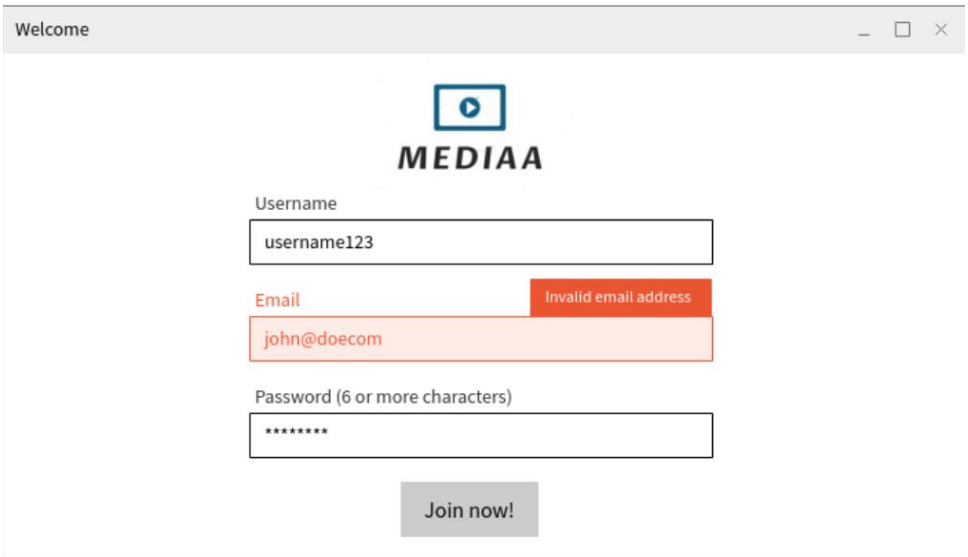
The following bullet points describe the navigation flow of the prototype. Each screen is given a title at the top which will help to describe the transitions.

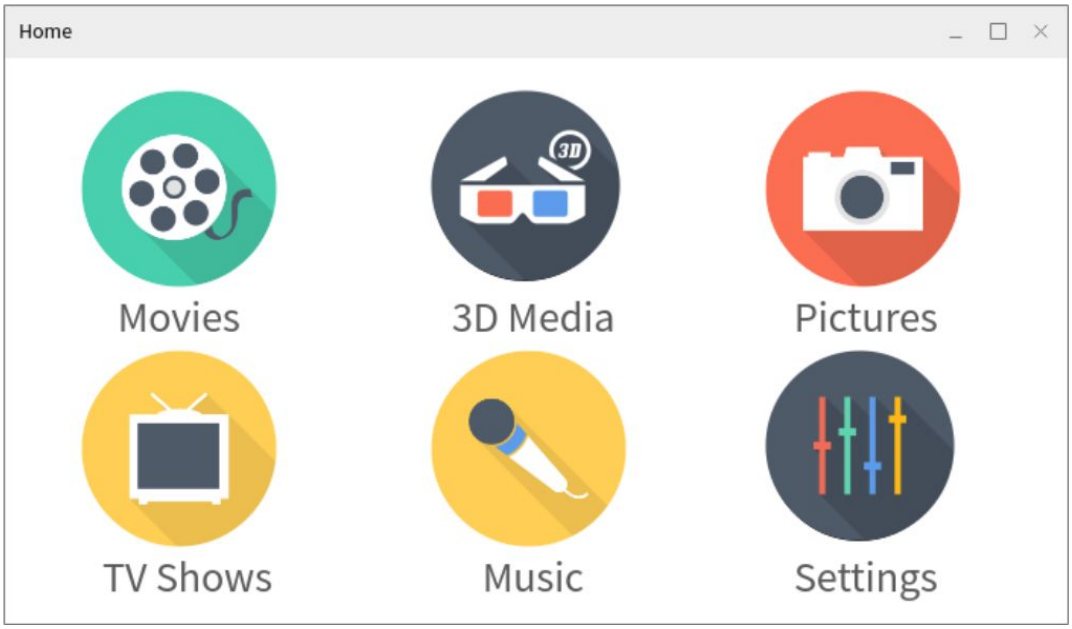
- Screen #1 goes to Screen #3 after a user successfully makes an account
- Screen #1 goes to Screen #2 if there is a login error
- Screen #3 has several buttons
    - Clicking ‘Movies’ will take the user to Screen #4 or #5

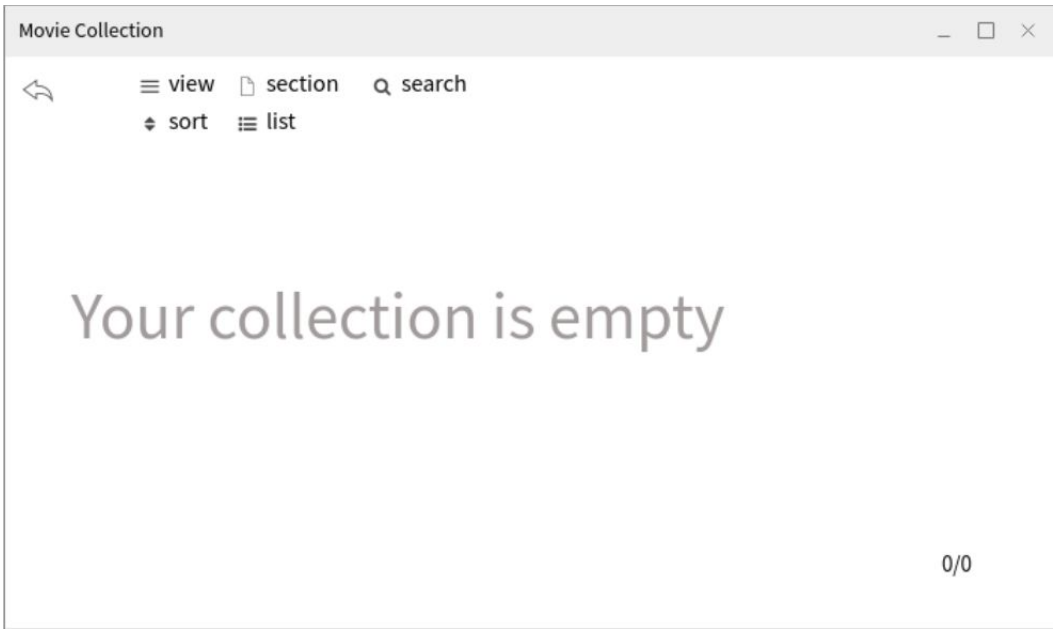
        - Screen #4 - User has not yet added media
        - Screen #5 - User has added their media collection
    - Clicking ‘Settings’ will take the user to Screen #6
- Screen #6 goes to Screen #7 is user clicks ‘Scan Folder’
- Screen #7 goes to Screen #8 on folder select
- Screens #5 goes to Screen #9 if the user selects a movie
- Screen #9 goes to Screen #10 if the user clicks play

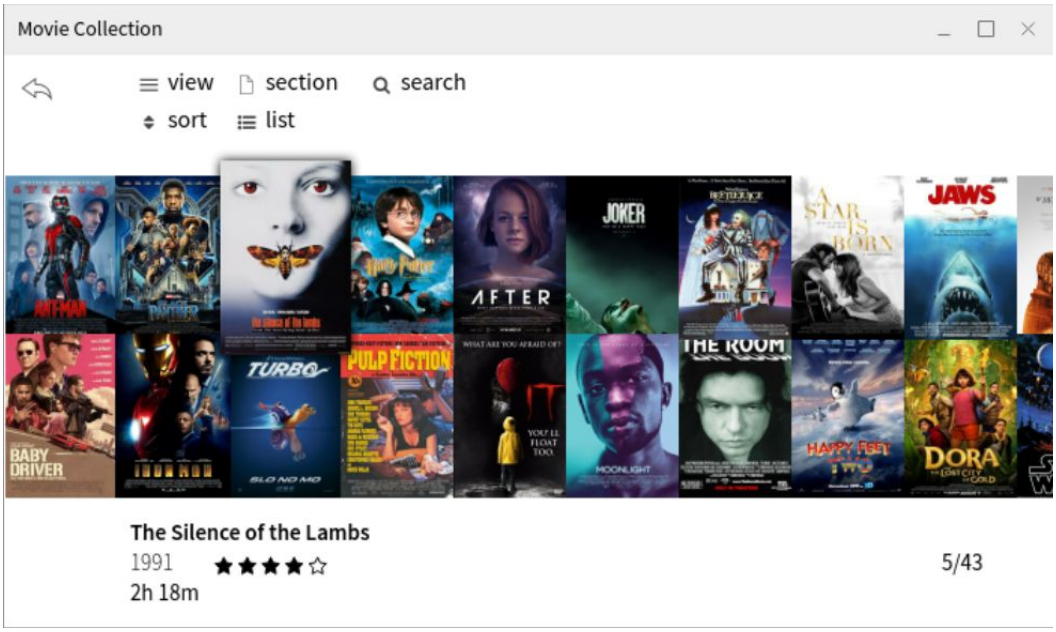
Screens:

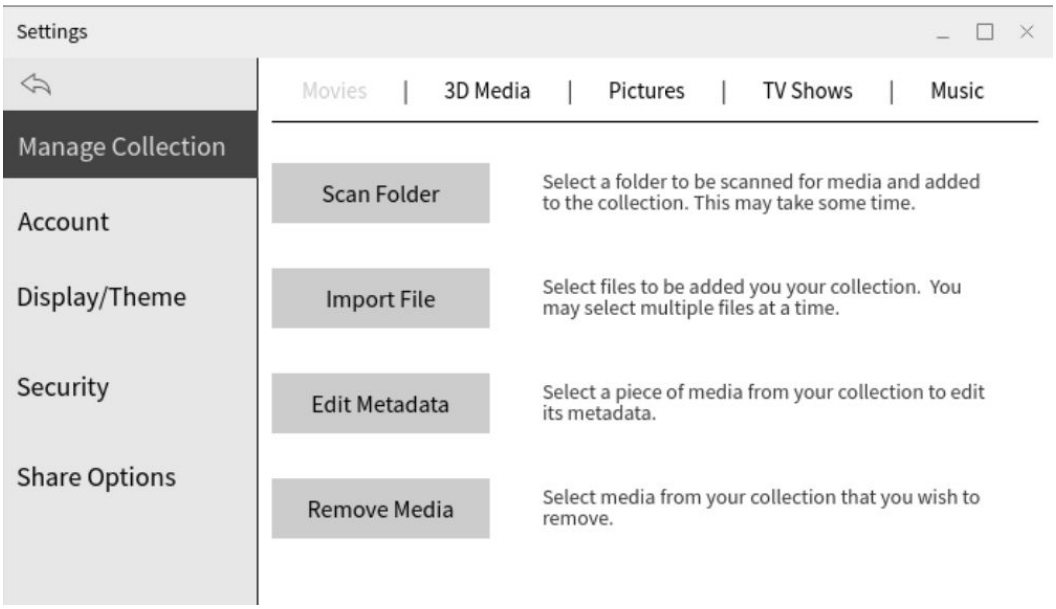


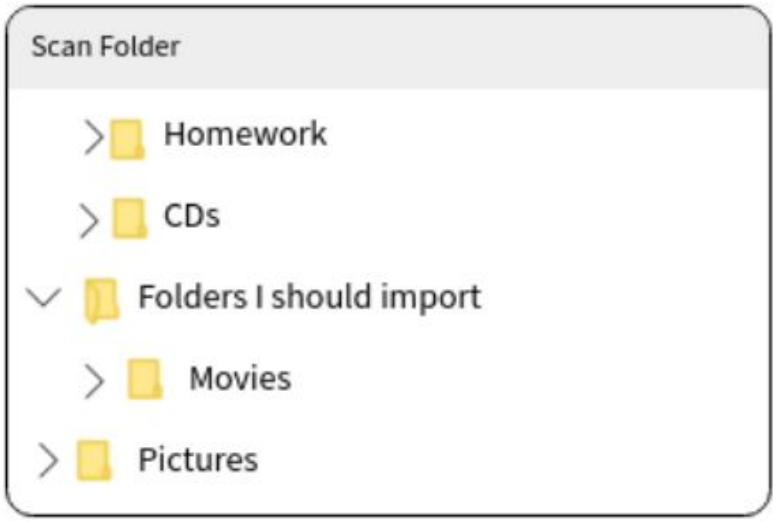


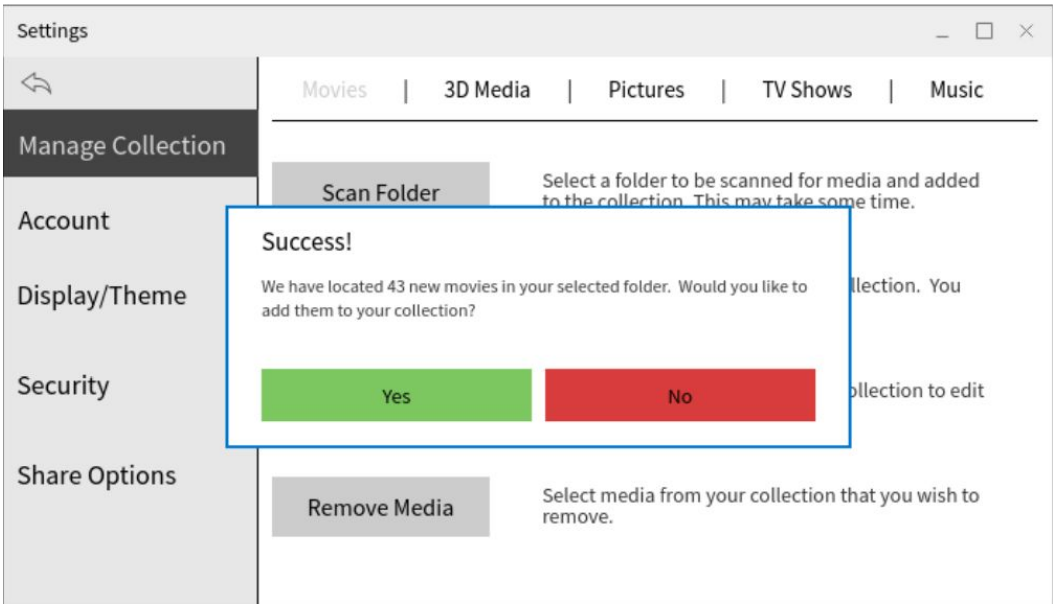

Home
Movies
3D Media
Pictures
TV Shows
Music
Settings

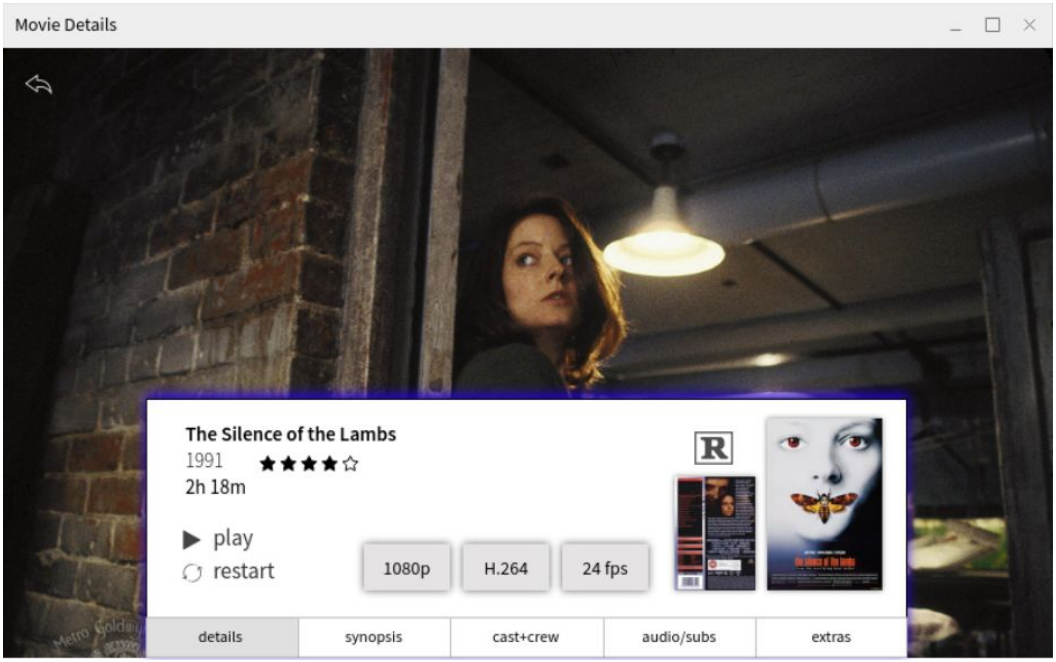

Movie Collection
view
section
search
sort
list
Your collection is empty
0/0


Movie Collection
view
section
search
sort
list
The Silence of the Lambs
1991
2h 18m
5/43


Settings
Movies
3D Media
Pictures
TV Shows
Music
Manage Collection
Account
Display/Theme
Security
Share Options
Scan Folder
Select a folder to be scanned for media and added to the collection. This may take some time.
Import File
Select files to be added you your collection. You may select multiple files at a time.
Edit Metadata
Select a piece of media from your collection to edit its metadata.
Remove Media
Select media from your collection that you wish to remove.


Scan Folder
Homework
CDs
Folders I should import
Movies
Pictures


Settings
Manage Collection
Account
Display/Theme
Security
Share Options
Movies | 3D Media | Pictures | TV Shows | Music
Scan Folder
Select a folder to be scanned for media and added to the collection. This may take some time.
Success!
We have located 43 new movies in your selected folder. Would you like to add them to your collection?
Yes
No
Remove Media
Select media from your collection that you wish to remove.


Movie Details
The Silence of the Lambs
1991
2h 18m
play
restart
1080p
H.264
24 fps
R
details
synopsis
cast+crew
audio/subs
extras


The Silence of the Lambs
ORION
PICTURES
00:00:00
00:00:00
SUB

Cited Source

Nielsen, Jakob. *10 Usability Heuristics for User Interface Design*, 15 Nov. 2020, www.nngroup.com/articles/ten-usability-heuristics/.

Member Name	**Role**	**Responsibilities & Assigned Tasks**	**Tasks Completeness Grade**
Cameron McCawley	Leadership/Management	Set up the document template. Create all prototype screens. Introduction. General Proof-Reading.	5
Benjamin Mayinger	Writing/Deliverables	Wrote the Empirical Evaluation Section. Proof-read the paper.	5
Danmar Green	User Research and Communication	Wrote the Analytical Evaluation section.	5
Joshua Shequin	User Research and Communication	Wrote the Task Description section.	5
Anthony Trinh	Visual Design/UX Design	Wrote the Interview and User Interaction Section.	5