Cinemus Development Members:

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|  | Milestone 1 Project Proposal and High-level Description |
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|  | Project Group 12 (“Cinemus Development”)  CEN4010 Principles of Software Engineering, Summer 2020  6/16/20 |

History:

Ver. 1 -–- 6/16/20

# Executive Summary

Cinemus (short for Cinema Us) will be an online platform for people to watch YouTube videos with other people together in real time; it is aimed to cater to those who used to go to movie theaters with friends, but now cannot due to quarantines.

Besides the primary purpose of filling the role of real-life movie theaters, Cinemus will also serve as a platform to meet people with similar interests, as well as highlight and share lesser-known content creators on YouTube.

It will be structured similarly to the streaming platform Twitch, and users watching videos together will be able to communicate within the site using an open text chat. Users will be able to create and join various “rooms,” and can either join “popular” rooms with many people in them, search specifically for their friends’ rooms, or join rooms recommended to them based on their previous rooms.

# Competitive Analysis

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| Competitor | Similarities to Cinemus | Key differences to Cinemus |
| Twitch (streaming site) | Both are platforms where multiple viewers can watch content and talk with each other live and in real time.  Both have multiple “rooms” that viewers can host and join. | Twitch’s content comes from a single person (the streamer), while Cinemus’ comes from an outside source (YouTube). This lessens any delays between a host of a room and their viewers. |
| YouTube livestreams | Both are platforms where multiple viewers can watch content and talk with each other live and in real time.  Both host YouTube content. | YouTube livestreams are meant for creators to get new content to viewers instantaneously, while Cinemus allows users to watch existing YouTube videos together. |
| Netflix Party | Both are platforms where viewers can watch preexisting content together, and both aim to simulate the experience of a movie theater. | Netflix Party allows users to watch movies available on Netflix, while Cinemus hosts YouTube videos. |

# Data Definition

* Cinemus users may create and join **theater rooms** (or simply **rooms**) to watch content. Each room may play one YouTube video at a time.
* The video player in each room is **synchronized** to all users such that when any viewer changes the video or segment of video being played, that change is reflected for all viewers. Any difference between users’ players is known as **desynchronization**, or simply **desync**.
* The creator of the room is known as the **host** and may change the initial settings of the room upon creation.
* All other users in a room are known as **viewers** and may have varying amounts of control of the room (depending on the settings that the host set).
* Each room may have one or more **directors** who may change the video being played in the room, the part of the video being played, the master volume of the video, etc. The host will always be a director, but the role of the director may pass between other users, depending on the settings of the room.
* Each room will have a **queue** of videos set to play. When one video finishes, the next video in the queue will begin to play. The queue may be accessed and managed by directors and viewers, depending on the settings of the room.
* Each room may have a **text chat** (or simply **chat**)that users may type into to create public messages to the room.
* Among the room’s settings, the host may assign some number of **tags** to a room upon creation. These may describe the genre of video planned to play, the size of the room, or other attributes. When searching for public rooms, viewers may filter their search to only include rooms with specific tags.
* Each room shall have a **thumbnail** visible to users browsing through rooms on Cinemus’ homepage. This thumbnail will be the currently playing video’s default YouTube thumbnail, updated approximately every ten seconds (in case the played video changes).
* In a room, all viewers will have control over the **personal volume**. Changes to the personal volume are only reflected to the user who made the change. Meanwhile, certain viewers may be able to change the **master volume**, which applies to all users simultaneously (in conjunction with their personal volume).
* All users will have some number of other users that they are **friends** with. The list of these other users is known as the **friend list**.

# Overviews, Scenarios, and Use Cases

## Scenario 1:

Alice, Bob, and Charlie are friends who live apart and are stuck at home. Before the quarantine, they had plans to go to the nearest theater to watch a film but now cannot do so due to lockdowns. They agree to instead use Cinemus from home as a substitute.

Once they create Cinemus accounts, Charlie creates a theater room and waits for Alice and Bob to join. While creating the room, he ticks a box to make the room “private” so that only users on Charlie’s friend list can see the room. Once the room is created, Charlie sends a link (outside of Cinemus) for the new room to Alice and Bob. Alice clicks the link and a new tab opens on her browser into Charlie’s room. Meanwhile, Bob is already on the Cinemus homepage, and so he navigates to the “Friends’ Rooms” tab to find and enter Charlie’s room. When both have entered, Charlie begins playing the video that he had already chosen and added to the queue prior.

When creating the room, Charlie also changed other settings of the room so that all viewers would be able to add videos to the room’s queue. Once in the room, Alice and Bob use the text chat to add their favorite short films into the video queue, and then begin to talk with each other and Charlie in the chat.

## Scenario 2:

Dave is stuck at home between semesters with nothing to do, so he decides to open up Cinemus. Not looking for anything in particular, he browses through the Popular Rooms tab on the homepage and sees multiple rooms with many people on them.

Dave can see the tags and thumbnail of each room, but nothing he sees particularly appeals to him, so he switches to the Search tab and selects two tags to filter results: Comedy and Short Videos. Dave also filters the rooms found to only show those with closed queues.

With a more specific selection of rooms, Dave finds and joins a public room that seems appealing and begins talking to the many viewers in the text chat. One other viewer in particular gets along with Dave and shares his interests, so Dave sends a friend request on Cinemus and they exchange contact information in the room’s text chat.

# Initial List of High-Level Functional Requirements

1. Cinemus shall be able to host multiple separate rooms, each with one video player synced to all viewers. Users shall be able to create their own rooms at any given time.
2. When creating a room, users shall be able to modify the settings of the room to allow for various changes and customizations.
   1. Users shall be able to mark rooms as either “public” or “private.” Public rooms shall be visible to all users, while private rooms shall only be visible to users on the host’s friend list.
   2. Users shall be able to modify how the role of the director is handled. Options should include:
      1. “Host only”: only the host has the role of director.
      2. “Assigned”: the host can give and revoke the role of director to any user in the room.
      3. “Random”: the role of director shall pass between viewers (selected randomly) at set time intervals.
   3. Users shall be able to modify what permissions the viewers and directors each have. Any permissions granted to viewers shall also be applied to directors. Permissions should include:
      1. Adding and/or removing videos in the queue
      2. Changing the segment of the video currently being played and/or the master volume
      3. Reading and/or sending messages in the text chat
   4. Users shall be able to enable and disable the text chat.
   5. Users shall be able to choose up to five premade tags to attach to the room (see requirement 3c).
3. The homepage shall have several “tabs” that allow the user to find rooms in various ways. These tabs should include:
   1. A “popular” tab that displays all public rooms, sorted by descending amount of viewers present.
   2. A “friends” tab that displays all rooms created by people in the user’s friend list. This shall show both public and private rooms.
   3. A “recommended” tab that displays a selection of rooms based on the tags in rooms that the user has recently entered.

There shall also be a “search” bar that allows the user to enter text. The search tab shall display all public rooms whose title matches the search term(s) used. The user shall be able to select up to five tags to filter their search by.   
While browsing through rooms in any of these areas, the user shall be able to see the thumbnail, tags, and host name of each room.

1. Each user who signs up shall have an account with various items attached to it:
   1. A unique username that will appear next to messages they send in text chats and next to rooms that they host
   2. A password of at least 8 characters that contains at least 1 non-alphabetical character, not visible to any user
   3. An email account, not visible to any user
   4. A friend list, not visible to any users besides the account holder.
2. Users shall be able to send friend requests to other users. These requests should be initiated from within the site, such as by searching for the recipient’s username in the user search (see requirement 7).
3. Users shall be sent alerts through the site when they have received a friend request from another user, as well as when a user on their friend list creates a new room. These alerts shall **not** be sent to the user’s email.
4. The site shall have a “user search” bar that allows users to search for the username of any other user, and from there send a friend request to that user (see requirement 5).

# List of Non-Functional Requirements

1. Security: All passwords shall be hashed and salted before being stored on the LAMP server.
2. Speed: For any two users with similar connection quality, the video player’s desync *shall* not exceed three seconds and *should* not exceed one second.
3. Portability: The site *shall* work on the latest versions of Google Chrome and Mozilla Firefox, and *should* work on the latest versions of Microsoft Edge, Internet Explorer, and Safari.
4. Ease of Use: Users completely new to Cinemus (but experienced with computers) should express satisfaction with the site’s UI and design.
5. Reliability: The daily downtime of the site shall not exceed 5 minutes more than that day’s downtime of FAU’s LAMP server.

# High-Level System Architecture

Development:

* Brackets, open software, will be used for basic text editing and creating files. License: <https://github.com/adobe/brackets/blob/master/LICENSE>
* Sublime text, open software, will be used for basic text editing and creating files. License: See page 7
* Bootstrap, a premade extension for CSS styling, will be used as a foundation for the site’s UI. License: <https://github.com/twbs/bootstrap/blob/v4.0.0/LICENSE>
* SourceTree, open software, will be used to more easily access and modify the Git repository used for the project. License: No license is used for this software. License: <https://www.atlassian.com/legal/software-license-agreement>
* Cyberduck, open software, will be used as a portal for accessing FAU’s LAMP server to upload files. License: <https://cyberduck.io/license/>

Site:

* Data will be stored on FAU’s MySQL servers. These servers will be accessed by the site using PHP code, and databases will be created using FAU’s phpMyAdmin.
* The video player in each room will use the YouTube API to display and control content. Terms of Service: <https://developers.google.com/youtube/terms/api-services-terms-of-service>

# Team

Trello Board: <https://trello.com/b/87Z9slrr/cen4010-group-project>

Git repository: <https://github.com/cen4010-s2020-g12/Group-12-Project/tree/milestone-1>

Group Members (ordered alphabetically by last name):

* Clifford Ariel
  + Role: Front-End Developer
  + Helped brainstorm initial ideas
  + Pitched idea for online lecturing platform for schools
  + 5/100 points
* Preston Billion Polak
  + Role: Scrum Master, Back-End Developer
  + Wrote draft of Milestone 1 document
  + Helped brainstorm initial ideas
  + Pitched idea for site for matchmaking in online games
  + Helped flesh out Cinemus’ features
  + 35/100 points
* Jorge Risco
  + Role: Front-End Lead
  + Proofread Milestone 1 document
  + Helped brainstorm initial ideas
  + Pitched initial idea for Cinemus
  + Helped flesh out Cinemus’ features
  + 29/100 points
* Madison Verger
  + Role: Back-End Lead
  + Heavily proofread Milestone 1 document, pointed out issues in initial design
  + Helped brainstorm initial ideas
  + Pitched idea for social media that pairs users by interests
  + Helped flesh out Cinemus’ features
  + 31/100 points

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