

# *LePhoning*

## **1 Project Summary**

LE SSERAFIM is a South Korean pop (K-Pop) girl group that debuted in 2022. Since their first release, they have steadily gained popularity, and they currently have 14.1 million monthly listeners on Spotify. However, they do not have a centralized platform for fans (“Fearnots”) to interact with the members of the group, with Fearnots taking to Twitter, TikTok, and Reddit to discuss and bond over LE SSERAFIM updates and music. This is where LePhoning comes in! LePhoning is an all-inclusive platform for fans to keep up with everything about LE SSERAFIM.

## **2 Description of Application**

We will design a web application to allow fans of LE SSERAFIM to engage with their content in a more personalized and meaningful way online. Our application will offer features such as messaging, live broadcasts, photos and videos of the members, a calendar of events, and integration with LE SSERAFIM’s official web page, allowing fans to stay updated and engage directly with their favorite group in an all-in-one experience. Additionally, we will offer a freemium model where users can pay for a subscription to access exclusive app features.

## **3 Prioritization of Feature Implementation**

### High Priority Features

1. Chat (creation, storage, and updating)
2. User Profile (creation, deletion, database management)
3. Media (photos, videos)

### Low Priority Features (Stretch goals – Future)

1. Song + New Release streaming
2. Calendar
3. Live Stream feature with chat + like/react

## **4           Technically Challenging Features**

For LePhoning, we plan to enhance the app's functionality by building our own chat database and real-time chat system that allows users to interact in a dynamic, scalable way. This would include implementing custom socket-based communication to enable efficient live chat during live streams and special events (updates) that the group has, which will all be integrated into the app. Another unique feature is that we plan to leverage Instagram and other social media APIs (Reddit, Twitter) to pull real-time content such as photos and videos, ensuring fans stay updated with the latest from LE SSERAFIM. We will also be scraping HTML from their official website to display relevant updates and events directly within the app, providing users with a seamless experience. These technically challenging features will create a more interactive, engaging app experience for fans, offering a unique platform that centralizes content and live interactions.

## **5           Usefulness**

LePhoning would be useful in several ways by providing a centralized platform for news and fan engagement for Fearnots. As opposed to websites like Instagram, Reddit, Twitter, and TikTok, the app exclusively serves as a comprehensive interface for Fearnots, and as such, will take the advantages of each social media site and collect them into one easy-to-use platform. The app collects news and provides a calendar about upcoming events, tours, and concerts, as well as collaborations and sponsorships for the various brand deals they receive. Additionally, the app will be a source of various teasers and clips of new song releases in order to be a comprehensive news source for LE SSERAFIM. Through these features, over 14 million Fearnots would no longer have to scour the Internet and various social media platforms to learn more about updates on the group, and instead could find everything they need to know on LePhoning.

Regarding fan engagement, LePhoning would provide a way for Fearnots to interact and bond with each other. Through being a central source of LE SSERAFIM media across the Internet, users can easily find the group members' social media posts, fun dance videos of the group collaborating with other K-Pop groups, and even find the current standings of LE SSERAFIM songs on music charts. Users can chat with one another over their favorite

songs and performances, and can even have conversations with AI chatbots that can simulate members' interactions with fans!

## **6.1 Realness and Data Sources**

In order to ensure that the users have the best possible experience, we will pull data about the LE SSERAFIM members from diverse sources. We will primarily rely on social media platforms such as Reddit and Twitter to fetch photos and videos pertaining to LE SSERAFIM. The photos will be in JPG/JPEG format while the videos will be in MP4 format. Further description of our primary sources and their cardinalities has been provided:

- Reddit: We will use the public Reddit API to fetch media about the members, and provide it to the users of our app, which will thus serve as a “one stop shop” for all things LE SSERAFIM. The cardinality of this dataset that we will generate will be on the order of 50000 items, and will be stored in our own scalable database. An average image would be ~5mb, and an average video would be ~50mb. Considering that the ratio of images to videos would be approximately 9:1, this table in our database would be storing ~500 gigabytes of data.
- Twitter: We will use the Twitter API to fetch updates about the group (their concerts, fan meets, etc), and provide them to our users as and when they happen. During our research, we noticed that some fans are extremely active Twitter users, and that we can leverage this to our advantage, and get every possible update about the group and streamline it to one place - the LePhoning updates page. One of the accounts we identified which does this is: <https://mobile.x.com/LesserafimNews>. This will be implemented as a stream of data, which is going to be fetched and published directly - without intermediate storage.

## **6.2 Database Usage**

LePhoning has several features which require the usage of a database:

- Photos and Videos: As described in the “Data Sources” section, we will be fetching media about the members of LE SSERAFIM and storing them in our database, eventually posting it on LePhoning as a “one stop shop” for the users. As shown previously, this database would have a cardinality of around 50000 items, and would be storing ~500 gigabytes of data.

- Chat Logs: One of our main features is to let users talk to the members, as well as amongst themselves. It is of prime importance that we store these chat logs, so that users can access them whenever they want. Therefore, one of our database tables will store these chat logs. If we think about the cardinality of this table, it is flexible based on the traction this app gets; however, it has the potential to be on the order of magnitude of millions of messages. Therefore, we will make this quite scalable.
- User profiles and settings: Each user of our app will be able to personalize their profile as well as web-app settings in order to ensure optimal experience. Each time a user logs on to LePhoning, we need to make sure that their settings are restored; therefore, we will store this information in our database, with user settings and profile linked to their unique identifier (username).
- Calendar: Updates, fan meets, concerts, etc would be stored on a calendar, which users would be able to check for quick access. This is a feature which would be stored in our database, as then users will be able to check for events whenever they want.

## **7      Functionality, UI Mockups and Work Distribution**

For LePhoning, the website will offer an impressive experience tailored for LE SSERAFIM fans to stay connected and interact with their favorite K-Pop group. Users will be able to create personalized profiles, join live streams with real-time chat functionality, and explore various features such as exclusive photos, videos and events. Here's a detailed breakdown of the functionality across the website:

1. User Profiles: Users will be able to create, update, and delete profiles. Each profile will include personalized features like favorite member, custom notifications, and personal fan achievements.
2. Live Stream & Chat: Users can join live streams hosted by LE SSERAFIM, with integrated real-time chat functionality. Fans will be able to send live messages during events, send likes, interact with other fans, and potentially have their messages appear on the live stream feed.

3. Content Integration: The platform will provide continuous updates, using API's from Reddit and Twitter and other social media platforms to pull in real-time photos, videos, and posts from LE SSERAFIM. Fans will be able to browse, like, and comment on these posts directly within the platform.
4. Event Calendar: Users can view an updated calendar of upcoming LE SSERAFIM events, including live performances, releases, fan meets, and more. The system will allow fans to bookmark or RSVP for events, sending reminders and notifications to the users.
5. Search and Discovery: A search functionality will be available for users to find specific content like photos, videos, or posts related to a particular LE SSERAFIM member. Users can filter content by date, type, or popularity (likes/comments).
6. Notifications and Alerts: The platform will deliver real-time notifications for live streams, content uploads, and upcoming events. Users can customize their notification preferences based on their favorite group members or content types.
7. Settings: Users will have access to a customizable settings page where they can manage their personal preferences. This includes updating profile information, adjusting notification settings, choosing preferred content types, and managing privacy options. Through the settings page, users can create, update and delete their account details in the database. For example, they can change their username, manage saved events, update chat preferences, or even delete their account if needed. All changes will be reflected in our database and will be updated automatically in real-time for a smooth user experience.

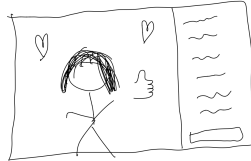
In terms of the backend, we will set up a robust infrastructure to handle user data, manage real-time chat, and integrate with external APIs. This will include the creation of a secure chat database to store messages and user data, as well as scraping LE SSERAFIM's website for updates, ensuring users always have the latest information. The live stream functionality will also be backed by scalable server support, allowing thousands of users to engage simultaneously.

The frontend as well as backend systems will be distributed across team members, with more emphasis on the backend since that is fundamental for our desktop application. Two people will focus on real-time chat

infrastructure, another will be on API Integration for all our services, and the last person will manage data scraping and event management to store/retrieve from our custom database. By distributing tasks this way, we ensure that each backend component is developed efficiently and integrates seamlessly into the final product.

Features:

- Photo/video feed
- Updates
- Livestream with live chat
- Chat with members (botted)
- Calendar
- Settings



Live streaming with live chat and reactions for premium subscribers.



Popup bot chats with LESSERAFIM members in bottom-right corner of screen.

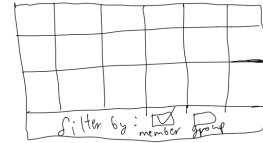
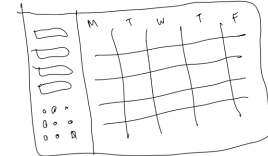


Photo gallery updated in real time from Instagram and other sources. Can apply various filters.



Calendar to track events, concerts and fan meet-ups.



Settings page with various user actions to customize the app experience.