



Faculty of Engineering and Applied Science

Software Project Management

Lab 2

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Music Hub:

Description:

The music industry is struggling to find a solution to the issue of piracy and music duplication. Because of the digitization of music due the downfall of physical media (such as cassettes, vinyl, CD/DVDs, etc), the media industry has moved onto digital platforms. However, with the rise of digital media also comes the rise of digital piracy. Digital media (movies, music, etc) is extremely easy to duplicate and redistribute - especially if the format is a simple .mp3, .mov, .mkv, or others. Many media distributors have taken attention to this and addressed this with encryption and DRM, which is a good step forward into reducing piracy. However, many media distributors also do not give much credence to the singer/songwriter's finances - Spotify, for example, only gives about \$0.006-\$0.0084USD per song streamed to the *holder of the rights of the music*. (<https://www.cnbc.com/2018/01/26/how-spotify-apple-music-can-pay-musicians-more-commentary.html>). Additionally, the holder can actually be split between the label, producers, and the actual artist who was involved in the creation of the song. As a result, many artists don't consider Spotify or other music streaming services as long-term financial investment. The new streaming project we wish to make, titled JiroStream, is a service designed to give artists a fair share of profits for songs streamed, and a strong commitment against piracy.

Project objectives:

- a. Each verified artist has a unique license that he/she uses on the platform.
- b. The platform should be able to support multiple genres of music and allow artists to create a new genre subject to approval.
- c. Royalties are paid directly to artists based on the number of listeners per month.
- d. The artists should be able to track their earnings on the application anytime.
- e. The clients can subscribe to the platform with a premium account to listen to any music of their choice with no advertisement.
 - i. Clients can choose to can create a free account that allows advertising and restricted features.
- f. Premium account holders can listen offline.
 - i. The platform should not support off-the-platform download from the application.
- g. The investor can add new artists, create new genres of music, and track the performance of artists in the platform.

- h. Clients have a recommendation service that tracks the type of music they play most.
- i. The platform shall then suggest similar music to listen to.

Measures of Success

1. Scope

The intended result of the project is to establish a music hub application that fulfills all of the proposed objectives. Overall, the combined achievements of our objectives will result in creating an overall music application that is friendly for users and supports artists in every way possible, by providing the ability to create unique genres and maintaining a clear process of royalties and licensing.

The scope of our project addresses 3 core ideas, one of which is **protecting the rights of the artists by fighting piracy.**

To protect the rights of our artists, we will, for example, prevent piracy by forbidding the software to run while audio recording software is running on the computer (software like Audacity, Reason, etc). Certain restrictions will be given to users who use the platform for background music on streaming services such as Twitch or Mixer. jiroStream will pause music playing in the background if this software is opened mid-use, and will request the user to close the recording software if they wish to continue listening. The main reason for this feature is that, even with DRM and encryption tools (such as those of Spotify), users can still directly rip the audio playing from the computer for a pirated (albeit lesser audio quality) file of the music. jiroStream will implement this monitoring as well as encryption tools and DRM to prevent audio piracy.

2. Schedule

A very important measure of success to always keep in mind is proper planning and scheduling of different phases of the project. A measure of success will be if you are able to meet all deadlines of each project phase to ensure easy advancements to each next step of the project. This will ensure a nice even timeline for delivery of each phase, and allow proper time for review of each phase before moving to the next step.

We will split the project into 6 phases: planning, analysis, design, development/implementation, and maintenance. These steps and this order will allow us dedicated time to focus on the backend, front-end, UI, profitability, and security of the overall application platform.

Overall, this allows for a more detailed project which is open to analysis and is one of the most crucial steps in order to successfully deliver any project.

3. Budget

Managing the budget is also a crucial aspect of creating a successful project, and must be maintained meticulously. All expenses will be noted down and tracked for further review, and we will allocate a proportionate amount of funds into each part of the application such as server expenses, database management and maintenance, and also to the artists on the platform.

An advertisement structure will be set up to gain revenue, with advertisements every few minutes listened to with more perks users are premium members such as offline download, no advertisement plays, and playlists personally curated for the premium users.

The other 2 core ideas of our platform are **providing a platform for artists to receive significant financial incentives for their efforts** and **maximizing profit for revenue to divide amongst both the company and the artists on the platform.**

To provide a platform for artists to thrive, jiroStream will maintain a 65/35 split of profits to the service and to the artists on the service. For every song played on Spotify, jiroStream will give \$0.02 CAD to the artist *directly*. An additional \$0.01 CAD will be given to the holder of the rights of the music (which includes label, shareholders, etc). To maintain profits, jiroStream will provide a \$10 CAD/month membership to jiroStream premium which grants the user to many other features such as offline play, high quality (320kpbs mp3 or 1411kpbs FLAC) music streaming. To enact greater profit for free users, a small advertisement will be played (~6-15 seconds) before the music app is opened. Additionally, there is an advertisement on cycle in the sidebar of the UI for mobile and desktop users, and an advertisement is played every 10 songs. With the use of advertisements, jiroStream wishes to accumulate 75 cents per 10 ads. This way, there can be approximately 25 payouts of 3 cents per 10 ads, which is easy to accumulate just by launching the app amongst 10 users.

4. Team satisfaction

This is more subjective in nature and is often overlooked when evaluating project success. But I beg to say that team satisfaction should be at the top of your success criteria. They're the ones who were deep in the trenches, and they'll be the ones by your side on the next project adventure too. They also have deeper insights that even the top stakeholders may not have.

5. Customer satisfaction

Customer satisfaction is also a major success indicator of the application, especially one that thrives on creating and maintaining a steady base of users. User listening habits will be tracked to curate specific playlists, genres and artists allowing a user specific experience for every member. Every facet of this implementation will request user feedback and the option to opt out of the feedback in order to force as little pressure for users to provide feedback. This allows users who really want to use feedback as a way to improve their experience and voice their concerns more efficiently, as then we have less but more quality feedback in order to improve the application as much as possible. Premium membership is not required making the free version of the software just as viable as the paid version. Since this application would be on both desktop and mobile platforms, reviews will be accessible through the application store and can also be sent directly to the company.

6. Quality

It is important for the customer to be content with the quality of the software once completed and released. Prior to release, there are many iterations during the project which fulfills constraints leading to a good quality software.

Customer feedback after the software release will allow for future patches and bug fixes. The software will be put through routine testing phases which will ensure its proper functioning for release but, suggestions can always be implemented with future software versions.

The release of jiroStream will be in multiple phases:

- *backend*:

- server setup
- data encryption and DRM security
- financial server setup for revenue

- *frontend*:

- UI setup

- *alpha testing*:

- smaller release to alpha test users, who give feedback on all aspects of the software.

- *beta testing*:

- general release to alpha test users, who give feedback on backend-frontend efficiency and UX.
- *release*:
 - general release to the public.

4. Infrastructure

The nature of our application is a mobile application that supports streaming, downloading and uploading of audio files to the service. These tasks will be handled by the support of specific infrastructure such as:

- Software for real-time **data management and processing** to allow for high data traffic with mass amounts of users.
- Infrastructure for **model-based tests and Python integration** to simplify for alpha-beta test users.
- **Storage service** for cloud-based music streaming to store the music and playlists users create.
- **Data processing applications** for platform infrastructure, advertisement, data scraping, music downloading for the user.
- A proprietary **desktop and mobile application** for the user to browse the music, stream to their devices, etc.