

Project: Social Music - Tomahawk features in Amarok

Introduction

Tomahawk is a cross platform, open source social media player that allows users to share music seamlessly and listen to it anytime, anywhere. Specifically, one of the key features of Tomahawk is the ability to connect to other's music collections.

Providing that Tomahawk has gracefully demonstrated how wonderful could be if people were socially connected by their music, it would be unreasonable not to follow their path.

Unfortunately, Amarok doesn't have this ability yet, but this could be solved by making the use of some Tomahawk code in order to support the creation of a new Amarok service. This service would make possible to share user's music files with online friends, thereby allowing them to listen to one another's tracks. All that with the necessary precautions to maintain compatibility with Tomahawk network protocol.

Project goals

Here goes a list of features that I am willing to implement:

1. With the support of Tomahawk people, I endeavour to conclude the development of a library, named libtomahawk, which provides the means that Amarok needs to implement tomahawk social features as a service.

Important: *I want to make it clear that all the work on libtomahawk is only a means to using the desired features in Amarok. This proposal real objective is to integrate Tomahawk social features in Amarok, pure and simple.*

2. Implement Tomahawk social features as a service, using libtomahawk under the hood. With the following in mind:
 - Be able to view and to query other's collections.
 - Be able to view and to query other's playlists.
 - Be able to stream your musics to others and the other way around.

Along with these tasks, I promise to keep posting about any relevant achievement in my blog. My objectives to do so are the following:

1. Motivate more people to contribute with free software
2. Make the community aware of new achievements
3. Get feedback about the project

Technical Details

To implement all the features related to tomahawk's social features I will need to conclude the development of libtomahawk. Put simply, libtomahawk is a effort, started by Tomahawk people, to develop a modular and generic library to provide Tomahawk network protocol and its connection plugins for anyone interested.

The main idea is to provide sub-modules for libtomahawk. All libtomahawk sub-module will depend on libtomahawk-core which will contain stuff like source, artist, album and etc. To deal with the network protocol and to the database synchronisation, there will be libtomahawk-network and libtomahawk-database. The former will depend on libtomahawk-database for syncing music databases between peers and the latter will inherit most of its code from files located into src/libtomahawk/database. Last but not least, there is libtomahawk-sips which uses several files located into /src/accounts and /src/libtomahawk/accounts.

They already have about 85% of this library done, but some modules need a refactoring coherent to what is desired for a library and there aren't headers for them yet. For instance, the connection plugins part is almost fully independent from Tomahawk source, but the network protocol (mainly Servant class) and the database syncing part have to receive more attention.

For this task, Tomahawk developers have offered their support. Hence, they will be actively refactoring libtomahawk with me.

One important thing to notice is that this project won't need any deep stream knowledge, since libtomahawk already deal with streams successfully. Besides that, there is also the advantage to be certainly compatible with Tomahawk network protocol and to have all connection plugins made by tomahawk people available for us as well.

Furthermore, in the Amarok side, I plan to use libtomahawk as a backend to turn Amarok social capabilities into reality.

At first, the service will try to reach peers to connect, in order to synchronise user's music databases. These peers are then found by making the use of libtomahawk's connection plugins. There are connection plugins, for example, to support peers in the local network and peers connected to a GTalk account.

When a user connects to a peer they share their music databases with each other, thereby

allowing one to request any available music to listen. Although this whole process seems to be complex, it is transparent to a user whether a music is from a local collection or not.

In terms of user interface, the service will be able to display collections and playlists from all connected peers. Peer's collections might be displayed in Local Music Browser, while playlists should be displayed in Playlists Browser.

It's important to understand that libtomahawk cannot work by itself. It needs to have access to all Amarok collections and playlists, otherwise the user wouldn't be able to share them with other peers. However, this is easy to achieve by making the use of CollectionManager and PlaylistManager respectively.

Timeline

April 23 to May 6 (3 weeks):

Continue to create the part of libtomahawk that will be used in this project. Here, any unknown technical detail that I, for any reason, had forgotten to consider will be analysed and if necessary the missing skills will be improved.

May 7 to 20 (2 weeks):

Here I want to start coding the service infrastructure for the social feature service. This includes the creation of a configuration dialog that will be used to activate/deactivate/configure every connection plugin. Fortunately, my acquaintance with Amarok services is relatively solid due to last GSoC, so I don't need much time here.

May 21 to June 17 (Four weeks):

Implement service ability to view and to query other's collections.

June 18 to July 8 (Three weeks):

Implement service ability to stream your musics to others and the other way around.

July 9 to 29 (Three weeks):

I'll have finished my university courses for this semester from July 10st onwards. So if anything fall behind schedule I will have a lot more time to dispose for the project.

Implement service ability to view and to query other's playlists.

JULY 13 -- MID TERM EVALUATION DEADLINE

July 30 (One week):

This week will be dedicated for documentation and bug triaging.

August 6 to 24 (Three weeks):

A buffer of three weeks has been kept for any unpredictable delay.

August 24 -- FINAL EVALUATION DEADLINE

After GSoC 2012:

Continue constantly improving the code I had developed, using the feedback from the community, to achieve the best results. And, as a plus to the proposed functionalities, I intend to make an applet to show friend's recently played tracks as soon as the GSoC is over.

About me

Name: Lucas Lira Gomes

Freenode Nick: MaskMaster or MestreArsenal

Location(City, Country and Time Zone): Recife, Brazil (GMT -3)

E-mail/GTalk: x8lucas8x@gmail.com

University: UFPE(Federal University of Pernambuco)

University E-mail: llg@cin.ufpe.br

In this last section I will try to talk a little about myself.

At first, I am a 22 years old undergraduate Computer Engineering student, that have been using GNU/Linux and KDE during 5 years with absolutely no regrets. I have been working with C/C++ as my main programming language during three years in a variety of projects from high level to low level. And since I'm completing one year of contributions to Amarok, I can also say that I have a quite good Qt knowledge.

Everything began in last year GSoC. It was my first attempt to be more active in the free software world and fortunately a succeeded one. Basically, my project goal was to integrate gpodder.net web service with Amarok podcasting functionalities. I had gotten through it and all that enjoyment that this experience provided had kept me contributing with Amarok since then.

So I'm here again, expecting to learn a lot more about software development, Qt, C/C++, git and etc. Besides all the technical knowledge that could be acquired, there is also the social side of the program. GSoC is, more than anything else, a program to know people and to share experiences.

Finally, I have to say that I'm very excited with the opportunity to help such a great community as KDE one more time.