8tracks Windows application

*Matija Lukic, C-2011, mini project proposal*

Project name: 8tracks WinApp

Description: The 8tracks WinApp is aimed to be a desktop-based music player that streams music from the 8tracks.com playlists. More about 8tracks: <http://8tracks.com/about>

Motivation: I’ve been using for a long while 8tracks.com to listen and discover new music. However it is browser-based and in order to play music I have to have a browser open at all times. Playing music is a “background” activity most of the time and having a browser opened just for that is not practical. That’s why I would like to have a separate application that would communicate with 8tracks.com via their API and offer the same features as the website does

Main use case:

* The user enters login credentials
* The system displays the playlists the user likes
* The user selects one playlist
* The system shows details about the playlists (e.g. which songs does the playlist contain)
* The user issues a command to play a playlist
* The system initiates playlist playback

Technology / development approach

The communication with the 8tracks server is done using their predefined API that is based on JSON or XML. The music stream is based on the .m4a files which can be manipulated with using the QuickTime. The application itself will be developed in .NET 4.0, utilizing the Parallel and Task libraries. Also, the stream manipulation can effectively be done with the.NET Reactive Extensions which exploits the power of LINQ. For the UI-side development, the top pick is the Reactive UI library which provides a good mechanism for building and testing the UI. Perhaps WPF will be used also, but I still haven’t made enough research to pinpoint which technologies for this part. For sure, I want to do something different than standard Windows forms.

As far as the development approach is concerned, I want to try out to do some by-the-book TDD

Feasibility study: I’ve already made a proof-of-concept application that performed the following:

* Start a session with 8tracts server
* Pick one playlist
* Play the first song in the playlist.

The project scope is greater than the given 7 days, but for the purpose of the mini project itself, I will focus on the main feature and the main use cases.

Sources:

* 8tracks API: <http://8tracks.com/developers/api>
* QuickTime: <http://www.apple.com/quicktime/download/>
* Reactive Extensions: <http://msdn.microsoft.com/en-us/data/gg577609>
* Reactive UI: <http://www.reactiveui.net/>