Homework 3 (100 points)

cs3157 – Advanced Programming
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Spring 2007

Out: April 16
Due: May 7th

Objective:

1. Learn to work on large project with another team member
2. Make best use of anything programming wise
3. Use your C++ knowledge
4. Learn to program like a ninja or some other cool metaphor..

Background

Software programming involves much more than just hunting for bugs and knowing how to type favoritesearchengine.com it also involves using experience and planning to minimize the effort and maximize the end result of your programming time. To that end there are software engineering, programming practices, and other programmers to help you along this task.

In this homework you will choose one other person in the class (or let me know if you don't know anyone) to work with. The assignment is divided among two people, and you will also write up a report together of your experiences. Each team member has to explain to the other what they are doing (programming wise with code review) and get feedback from the other on ideas/code etc that is don't meet the day before the demo!

Project outline: You will design an online music website and backend server. It will allow the user to setup an account and upload music and search/sample the collection. It will also allow users to share specific music which any other user can sample (listen). It also allows the user to create random playlists of their music to listen to over the net. In addition it should provide stats (how many songs, users, etc). It should be easy enough, your grandmother should be able to use it ☺

Team Member Alpha:

Responsibility will include building the front end of the system using for example C++ and CGI. Please feel free to use a CGI libraries or any other tools which you can find (they have tons in C++). A good start for open source projects would be on freshmeat (example http://freshmeat.net/projects/cawfeecgisdk/) or sourceforge (http://sourceforge.net/) or use google. Also the login/authentication system which should be able to email the user's their passwords if they forget it. You can hook to the mail program (man mail) to send an email. (please test on your own before spamming the entire department).

You need to provide the front end of being able to upload the files, and searching files either personal or shared files. Other team member will provide backend technology. In addition the ability of removing song files (only own of course).

Please dress up the site with some graphics and feel free to add anything else to make it a useful site. In addition you need to coordinate with the other team member for calling methods etc.

The front end also should provide a log of which ip address did what (example song123.mp3 uploaded by 123.123.12.3 at 12:12:12 Nov 5 2006) or (userX logged attempt log in Fail at 12:13:13 on Nov 12 2006) this will provide you with a way of checking on who did what if you have any problems.

Last you need to provide interface so that user can get a random list of files which they want to play (jukebox style). This last thing can be done using anything you know (i.e. not necessarily c++).

Team Member Beta:

Responsibility will be to code the backend technology using anything that works from what we have covered in the class or your own knowledge.

You need to be able to store and search song files and provide technology to create sample files (say 10 second sample) from the mp3 files if the user wants only to sample them (find something on cpan, sourceforg,e or freshmeat etc, don't reinvent the wheel yourself ☺.

Remember when creating the store of files, some are shared to all users and some belong to individual members. Which means a user who didn't upload a file, shouldn't be able to delete it, but might be able to search it.

Last, need to coordinate with other member on being able to provide statistics to the user (about button) to show how many users, how many songs, and other information which you might find interesting

Both members should coordinate with regards to design and coding. There is no reason you can't help each other on each part if you so choose. You will need to create a report.txt file which will document who did what part and anything you typically put into your README file. In addition give credit for any project you took advantage of. A single makefile should be able to run all code compilation.

Last I would like a demo of this once this is done. This demo will replace your final exam….in the demo I want to see what was done and what each member did. In addition when you made decision and programming choices, I want to hear about them and any other experiences in getting this to work.

Hints and tips:

Here are some helpful links to read if you want…

http://en.wikipedia.org/wiki/M3U

http://www.mickwood.com/articles/streaming.shtml

http://www.developingwebs.net/html/mp3.php

http://search.cpan.org/~ilyaz/MP3-Splitter-0.04/Splitter.pm

http://search.cpan.org/~jv/mp3cut/script/mp3cut
