Open choice project detailed project proposal

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MP3 file organisation application

Overall Aims

More and more people around the world are using electronically stored music for a number of reasons including ease of use, portability and ease of sharing/distributing. The most popular format of digital music people are storing on their computers is Mpeg Layer 3 known as MP3 due to the .mp3 file extension. There are a variety of applications for creating these mp3 files from personal CD collections such as Winamp under MS Windows and Grip under UNIX based operating systems. These applications are capable of finding the Artist and album details from databases on the internet and attaching these details to the mp3 files in a text format known as ID3. with the increase in high data rate (broadband) internet connections Peer to Peer networking (such as Kazaa, old Napster, WinMX) which people use to obtain music over the internet (often infringing on copyright laws) and there are more recently a large number of "legal mp3 download sites" (such as Itunes, new Napster, mp3.com) which provide people with mp3 files in exchange for a subscription fee or pay per download. Many of these systems place all the downloaded files in the same directories which lead many users to have large numbers of files in one directory often 100s or in some cases 1000s. This makes accessing an individual file difficult. Many mp3 playing programmes read the ID3 tags and display these in a "play list" which then can be easily searched which allows users to play a specific file. My aim is to make an application to search through the ID3 tags of mp3 files and organise them into folders by a user defined system such as:

\<Band Name>\<Album Name>\

First of all I need to research what programming language is going to be the best to use for the task taking into consideration factors including: Portability, Efficiency, Maintainability and scalability.

I am going to make a Graphical User Interface (GUI) as most users prefer to use a GUI and find a Command Line Interface (CLI) hard to use. However I may create the GUI separately from the CLI so that people who prefer to use a CLI can do so.

Motivation

I have been a computer user since I can remember having never known a time without computers in my life and as the years have progressed along with my experience I have become an administrator of computer systems. My work placement in a college put me in contact with a number of computer users mostly young people with a broad range of experience and understanding. And many of them collected mp3 files from many different artists and genres. Due to the increasing popularity of electronically stored music, bigger hard disks and faster internet connections people are getting more mp3 files which are in need of organising.

I am a big fan of electrically stored music as I am a big music fan and I am constantly on the move because of this I have managed to get a large collection of mp3 files which are poorly organised.

I hope that through this project I will gain a better understanding of digital music formats and programming as I will have to learn a lot of new and advanced programming techniques for large amounts of file IO. I will also gain a better understanding of application development.

Objectives - Core

- Research and compare programming languages to find the most appropriate language for the job based on Portability, Efficiency, Maintainability and scalability.
- Research Digital music formats and how they store extra information about artist and tracks.
- Organise MP3 files into appropriate directories based on information extracted from the ID3 tag. E.g. \<Artist Name>\Album Name>\
- Learn appropriate language and programming techniques for the task.
- Construct an easy to use GUI for my application
- Research legal aspects of converting CDs to mp3 to make sure that in testing the application I don't infringe on copyright laws

Objectives – Advanced

- Research ID3v2 tag information
- Expand to ID3v2 tags (which allow for more information to be stored than the original ID3 tag).
- Research .ogg music files.
- Expand to include ogg vorbis files .ogg (another type of digital music storage similar to mp3).
- Add functionality to change ID3 tags (and other information)
- Add functionality for Windows Media Audio files (.wma)

Provisional Plan

Here is a time plan with details of what I hope to get done in the proposed time frame in order to complete my core objectives for the interim progress report

Activity	Time required	Week starting
Research and compare programming languages	1 week	11th October
Research digital music file storage formats primarily .mp3 and legal aspects for testing.	1 week	18th October
Research existing solutions and programmes that work with the ID3 tags	1 week	25th October
Write Code to: • Read ID3 tags • Extract artist/album information • Create directories • Move/copy files	2 weeks	1st November

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This is a significant milestone		
Begin construction of the GUI and plan for what user interaction will be required	2 weeks	15th November
Research into ID3v2 and ogg file formats.	1 week	22nd November
Implement support for ID3v2 and ogg file formats	1 week	29th November
Interim Progress report due in 12th December writing and checking report	1 week	6th December

Learning Needs

Learn the file architectures of digital music files

Compare programming languages and learn the necessary advanced features of the chosen programming language(s)

Research GUI development and ease of use.

Resource Requirements

A variety of CD's for creating typical mp3 files (can be supplied by me)

X86 Computer, keyboard, monitor and mouse (at least 2GB spare on the hard disk) and sound card (with speakers)

Operating system windows or UNIX based

CD Ripping software such as Grip

Areas of Uncertainty

Which programming language will be used.

How closely the GUI will tie in with the actual application (I may construct the GUI separately to issue the correct command parameters to the command line driven application).

Legal aspects of copying mp3 files (home recorded "dummy" files can be used if needed).

Which digital music formats will be supported.

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