Kernel Space

User Space

Kernel module

Control application

Hadoop

Server

Database

Lucene

Mp3Tag Reader

Other parsers

Architecture document for SOA project

Kernel Space:

- **Kernel module**
  - o Description:
    - ▪ The kernel module will monitor system calls to detect when a file is created, deleted, modified and will create update packets which will be forwarded to the server.
  - o Tasks:
    - ▪ Additional functionalities will be added as required.

User Space:
- **Control applications**
  - o Description:
    - ▪ The control application(s) will be C(Python) programs that will interact with the kernel module, server and will offer an interface to the user.
  - o Tasks:
    - ▪ Allow the user to add/remove files(folders) from the list of monitored files(folders).
    - ▪ Allow the user to Create/add tags to files/folders
    - ▪ Allow the user to control the kernel module
    - ▪ Offer advanced search functionalities to the user
    - ▪ Allow the user to control the server.
- **Server**
  - o Description:
    - ▪ The main logic of the application resides in the server. The server will process data and add/retrieve it to/from the database.
    - ▪ Depending on time constraints additional modules will be added to it in order to act as an distributed server.
    - ▪ Modules can be added to the server to allow parsing and indexing of different types of files.
  - o Tasks:
    - ▪ Use different parsing techniques to obtain relevant information from different types of files in order to generate tags. Example: parse word documents, mp3 files, pictures (Reading exif information).
    - ▪ Submit/request data from the database.
    - ▪ Maintain a list of saved Virtual Folders (cache) optimize searches.

- **Database**
  - o Description:
    - ▪ Holds information about files: tags, indexed text and so on.
    - ▪ Can be a distributed database.