Software Modules

1) Video Selection and playback

Goal:
Develop or Modify existing GPL software in order to display a menu of different video clips (4-10), with their short (a few words) and "preview" (a longer description). The menu will also be able to perform a few functions, such as loading 3rd party programs, but it MUST return when that 3rd party program is finished.

Features:
- The software should be able to accept keyboard commands, and the entire application should be able to be controlled using less then 6 keys total.
- When the system is booted, it most go directly to this video selection program
- The video selection program must be able to load other programs, but when that other program has finished, it must revert right back to the video selection program. This feature should be able to be turned on and off.
- The program should play a very brief introduction video upon startup.

OS Requirements:
Linux, it must run under Linux.

Hardware Requirements
Must be able to run under Via's EPIA VE5000 motherboard/cpu.
(http://www.viavpsd.com/product/epia_v_spec.jsp?motherboardId=141)

Design Guidelines:
- The program should reside in its own hard drive partition. The OS will be in another partition, and all video will be located in a 3rd and separate partition.
- The program should use video files which will be named:
   1_a_video.mpg, 1_b_video.mpg, 1_c_video.mpg, 2_a_video.mpg, etc. Each video series will have a configuration file associated with it (1_video.cfg) which will store information about each video clip series. The naming scheme for the files can be changed.

Configuration File Guidelines:
The configuration file must store the following information:
- The names of all associated video files and their order of play.
- The name of a picture file used in the menu
- The brief, and full description of the video files contained for each series of clips

End Users:
This will be used in a Kiosk environment, and the users must be unable to exit out of the video selection program.

2) **Motion detection and program activation**

Goal:
Use existing GPL software (ie motion, or other) to develop a program to recognize whether people have entered an enclosed area.

Features:
· The software should be able to determine if at least one person has entered an enclosed area.
· Once it has determined that the person has entered the enclosed area, it should activate a program.
· It should check every 30 seconds or so to make sure at least one person is still in the enclosed area.
· If no people are detected, it should shut down the program it previously activated.

OS Requirements:
Linux, it must run under Linux.

Hardware Requirements
Must be able to run under Via's EPIA VE5000 motherboard/cpu.
(http://www.viavpsd.com/product/epia_v_spec.jsp?motherboardId=141)

Design Guidelines:
· The people will be sitting in predictable places. So one idea could be to assume that certain markings will always be in an approximate area. Lets say a big "X" would be painted on the wall, and if a person sat there, they would cover the "X". So the program could safely assume that a person had entered the enclosed area and activate a program.

Environment:
This will be used in a Kiosk environment, and the users must be unable to exit out of the program. This program should run in the background, and should automatically restart if it crashes.

3) **Update Program**

Goal:
To update a program and video files, each of which are located on their own hard drive partition, utilizing UDPCast (http://udpcast.linux.lu/)or modifying another GPL program.

There will be 2 parts to the program: 1) A interface at the central computer to control the entire system, and 2) a background program running on all "remote computers" (see block diagram) that will can receive commands to update all "PC"'s (see block diagram)

Features:
• Completely overwrite existing hard drive partitions with new data.
• The entire network of computers will need to be administered remotely, and most importantly, securely over the internet.
• Easy to use

OS Requirements:
Linux, it must run under Linux.

Hardware Requirements
Must be able to run under Via's EPIA VE5000 motherboard/cpu.
(http://www.viavpsd.com/product/epia_v_spec.jsp?motherboardId=141)

Design Guidelines:
• The program should run in KDE and be very user friendly.
• A GUI should allow the user to select which video files he wants to be updated to the remotely networked computers
• This program will be stored on a "central computer" (see block diagram)

Block Diagram: Heirarchy of network
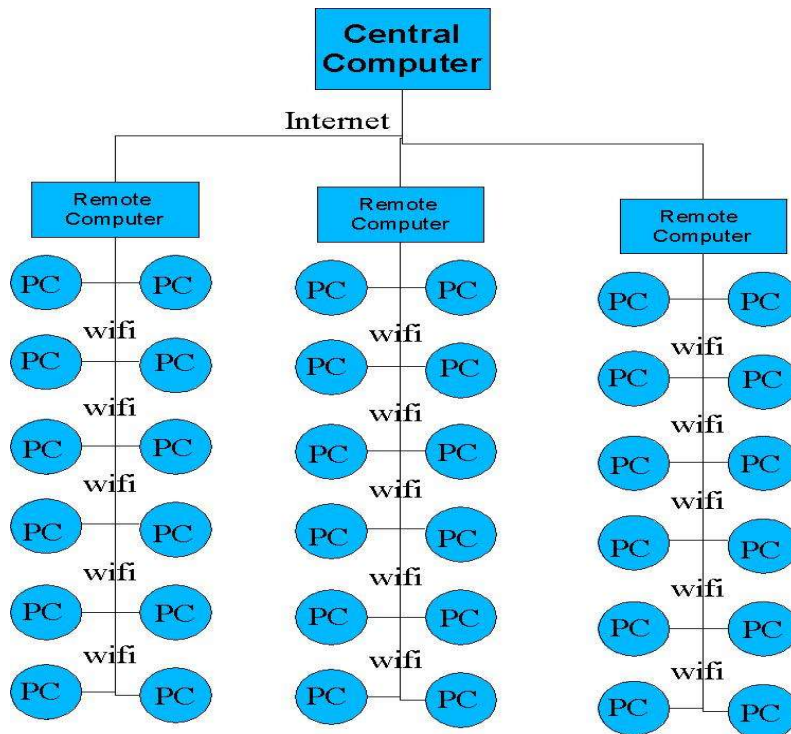
Environment:
This will be used in the KDE desktop, by administrators. The system will also run in the background (and start on bootup) on the remote comptuters and be used to updated the PC's on their individual networks.