

## Patient EDU, LLC System Technical Specifications

The Patient Education System can be configured as a client server or a stand-alone application. It has the capability of playing multiple mpeg video clips in presentations and tracking a viewer's progress through the presentations.

### **Configuration**

The PatientEDU, LLC system application was developed in *Macromedia Flash MX 2004 Professional*. It is converted from the flash shockwave format (swf) into an executable (exe) using Multimedia's, *Zinc*, which adds additional functionality such as video play and database connectivity. This exe application along with all of the video clips are stored on the client side, usually in a tablet PC. The server houses the database, either *Microsoft SQL Server* or *mySQL*. The server also houses a web browsing component used for assigning presentations and viewing patient progress with the aid of a client-side web browser. This web component requires the use of *Microsoft Internet Information Server(IIS)* or *Apache*. This server application is stored in <server> PatientEDU. The flash shockwave (swf) file is placed in this directory along with the Active Server Pages (asp) used to communicate with the database.

**Note:** Patients view video stored locally on a tablet or through a hospital's television system, not over the hospital's network. The video files reside on the client machine with the exe. The browser component is designed for use in assigning and viewing reports and staff review/preview of content.

The client-side tablet comes configured with two windows users, "admin" and "peuser" to separate patient access from hospital staff access. Additional users may be added as needed. The "admin" user may see and change any of the settings on the computer. The "peuser" only has access to the exe to start the program and logon and log off. See the documentation on the lockdown of the "peuser" for specifics on how this lockdown occurs.

When logging in as the "admin", can access can be made to all the files used by "peuser". They are stored in "c:\Programming File\PatientEducation<version>\". Replace "<version>" with the version number of the system you are using, such as "2\_5". The "c:\Programming File\PatientEducation<version>\ folder is the exe and the content.xml file, as well as the Content folder. In the Content folder is a Admin folder, Video folders, and preference files in xml format.

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The content.xml File

The content.xml file can be viewed by using Microsoft's XML Notepad. The installer for XML Notepad is included in the "Content" folder. The content.xml file contains which specialties to include from the content xml folder. The prefs.xml file contains all the settings of the Patient Education System. The xml files in the content.xml folder contain complete listing of the video contents and questions in the system. Changes to the content.xml files must be loaded onto each client.

The content.xml files housed on the server serves only the browser component, not the individual clients which have their own xml files. The first part of the Prefs.xml attributes contain settings for passwords and data connectivity.

**medicalInstitution** - This will be used in the program's welcome screen.

**peuserPassword** – This password is used in the system when a patient returns the tablet to the nurse. It should be set to the peuser login password as it performs the same function. Putting an asterisk here will accept anything the user types(no password).

**setupPassword** – This password is used to organize and modify/create default presentations. This password should not be generally distributed as the system was not designed to have multiple users making changes in this section at one time. It is possible for one user in certain situations to eliminate another's changes.

**host** – The name of the server we are connecting to. This can also be in the form of an IP Number.

**versionNum** – The version of the system>

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**connection** – This is the connection string that tells the system how to connect to the database on the server. This is usually set to “web”. A connection of “web” forces the application to connect to the database through the asp or php pages that the browser component uses. This method requires the IIS setup.

The content.xml file lists the system content corresponds to the directories in the “PeContent/<vender>” folder. This is organized as listed below:

```
Specialty
  Topic
    Category
      Slide
        MPEG/Flash Video
        Multiple Choice Question
        Option
OR
Folder (can be nested)
  Slide
```

**Notes:** The Specialty, Topic and MPEG file names must correspond to the directories and files in the video folder. If folder tags are used in the xml, the file system must mimic that hierarchy.

The reporting feature of the system references these xml files in order to make reports. Therefore old versions of these files in the content.xml folder must be stored with a log of dates and changes in order to maintain the accuracy of the system.

Changes made to this file will only affect the client machine where it is located. Any changes made to one client need to be made to all clients. The system does not track which client the patient uses and assumes that all clients are the same. The browser component is considered one client regardless of the number of browsers that access it.

Any Changes made to the content.xml files on the client machines should also be made to the browser component content.xml file if it is being used.

### The PEContent Folder

This folder holds all of the video files used by the system. It is organized by specialty and topic or generic folders. These specialties and topics correspond directly to the specialties and topics in the content.xml file. It is imperative to maintain this one to one relationship for the system to function properly.

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### The Content\Accessories Folder

This contains handy apps that may be useful depending on your installation. The XML Notepad installer can be found here. This is used in editing the content.xml file.

### **The Patient Education Database**

Connecting to the database is set up by editing two files, the content.xml file and the connect.asp / php file for browser implementation. Both the “host” as well as the “connection” attributes must be set in the content.xml file.

Both files rely on a “peremote” user and password to access the database.

### Database Tables:

All tables contain an owner filed to separate different instances/installations of the interface.

### **Completed**

completedType - Can be “video” for a completed video clip or “question” for a patient satisfaction question or “result” for a Multiple Choice Question attached to a video clip.

patientRef – ref number connecting it to a particular patient.

xPath – A path to where it exist in the content.xml file.

completed – The date and military time it was completed.

questionNumber – What order number the question was, if it applies.

correctAnswer – The right answer for the question, if it applies.

answerGiven – The answer given by the patient, if it applies.

points – points awarded for this question if correct, if it applies

timesTaken – How many times a question has been answered by a patient, if it applies.

version – The filename of the video clip, if it applies

### **Patients**

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ref - database autonumber and key field used to link to other tables.

patientID – ID string for that patient (required).

lastName – not required

firstName – not required

dobMonth – not required

dobDay – not required

dobYear – not required

comments – not required

dateOfEntry – Not currently used

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**Prescribed Presentations** – keeps track of “default presentation” assignments

ref - database autonumber and key field used to link to other tables

patientRef – used to link to the Patients table

presentation – used to link to the Presentations table

**Presentations** – contains presentations and folders of presentations

ref - database autonumber and key field used to link to other tables

id – incremented by the Patient Education System as ref for other tables to link

xPath – where in the organization of “default presentations” this lies

comments – description of this default presentation and its purpose

duration – how long it is if it is not a folder

kind – whether it is a presentation or a folder for organization of presentations

**Selections**

ref - database autonumber and key field used to link to other tables

selectionType – “Presentations” if it is part of a “Default Presentation” or “Patients” if it is part of a patient’s “Customized Presentation”

id – Presentation.id to connect to Presentation if of type “Presentations” or Patients.ref to connect to Patients if of type “Patients”

xPath – location in content.xml

**Updating a Video Clip**

When you want to update an existing video clip, it is important to use a new name for that clip even if it is updating an existing clip. The Completed table in the database tracks which version of video was watched by storing its name. If a report is to be reviewed, the old clip must be accessible for viewing.

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By using a new name the new video clip can be stored in the “MaterialVideo” folder side by side with the old file. The content.xml file will need to be updated to reflect the new file name. The browser content.xml file will also need to be revised. The old content.xml file should be archived with a log of the date and description of the changes made. These changes need to be made to every tablet.

**Updating Multiple Video Clips and the Content.xml Files**

An update application is under development that will facilitate the updating and archiving of content.xml files and video clips. When using the application, clients will be need to be connected to a wired network. Changes to video clips will be made on a shared drive on the server. The update application will sync up any changes that must be made and maintain appropriate logging and archiving.

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