SP1 - 01

A FILMLESS MEDICAL IMAGE ENVIRONMENT

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Project Description

- A filmless medical image environment is built
- The environment contains two parts, clients and server.
- Client sides provide a user interface for search and operating 3D image.
- Server sides manage with the database and handle all the requests from clients.
- There are various operations for the 3D image included zooming, rotating, x ray view, frame views, cross section view, transparent view to the 3D medical image.

Project Overview

A Filmless Medical Image Environment is an environment which helps doctors to examine medical images in a faster and more convenient way. In this environment, no film is needed. Doctors just need to use their desktop to login to an authentic database. They can get and examine the image they wanted. In addition, the environment enables doctors to have a 3D view to the medical image which makes doctors perceive the images much easier.

The objective of our project is to build a prototype of such environment. It contains client sides and server side. The whole system is shown as the diagram below.

![Diagram of the filmless medical image environment](image_url)
In this project, we have built a fileless medical image environment. Its functions can be divided into two parts:

- Searching Images
- Operating Images

All of them will be illustrated in the following diagrams.

**Searching Images**

Step 1. User has to login to the system with his login name and password.

Step 2. User can search patients' images by their name or patient ID.

Step 3. User can load images for further operation.

Step 4. User can also check and add his comments on the images after investigation.

**Operating Images**

After loading the image, the screen will split into four regions.

- View 1 is the 3D view
- View 2 is side view
- View 3 is top view
- View 4 is front view
Our system provides various kinds of operations for users to examine the 3D images. Apart from those basic operations such as zooming and rotating, our system also gives a x-ray view, a cross section view and a transparency lens to users. The following diagrams are used to illustrate them.

Conclusion

A filmless medical image environment provides doctors with a fast and secured way of obtaining the most accurate patients' data in the hospital database. The innovative features for investigating 3D medical images serve as tools for handling a modern medical imaging system. A secured network and database are necessary for keeping patient's personal data in a reliable system.

A series of tests are done on the security of the database system, computer network, image process and user interface. We ensure the system is reliable and robust and have satisfactory performance.