

PACS (Picture Archiving Communication System) for Dentistry

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PURPOSE: This paper proposes PACS (Picture Archiving Communication System) to manage and transfer information for dental field focusing on 2 main fields as follows. First application was to open DICOM image files of patients inside the database via Local Area Network (LAN) [1] and Hypertext Transfer Protocol (HTTP) [2]. Second application is to manage patient's personal data and treatment data on the network by applying MySQL database [3] with Graphic User Interface (GUI) implement using Borland C++ Builder™ [4]

METHODS: This System is separated to 2 sites, the server site and the client site connected by LAN, which can be shown in diagram in Figure 1. Clients can use DICOM Viewer, which is the program developed in house for opening DICOM files. The DICOM Viewer which is the Graphic User Interface (GUI), are implemented using Borland C++ Builder™. Moreover, medical data in both text and image files such as patient's information, treatment data can be retrieved from the database in server site. We also use Borland C++ Builder™ programming language implementation for connecting the database server to increase efficiency in the retrieval of medical data.

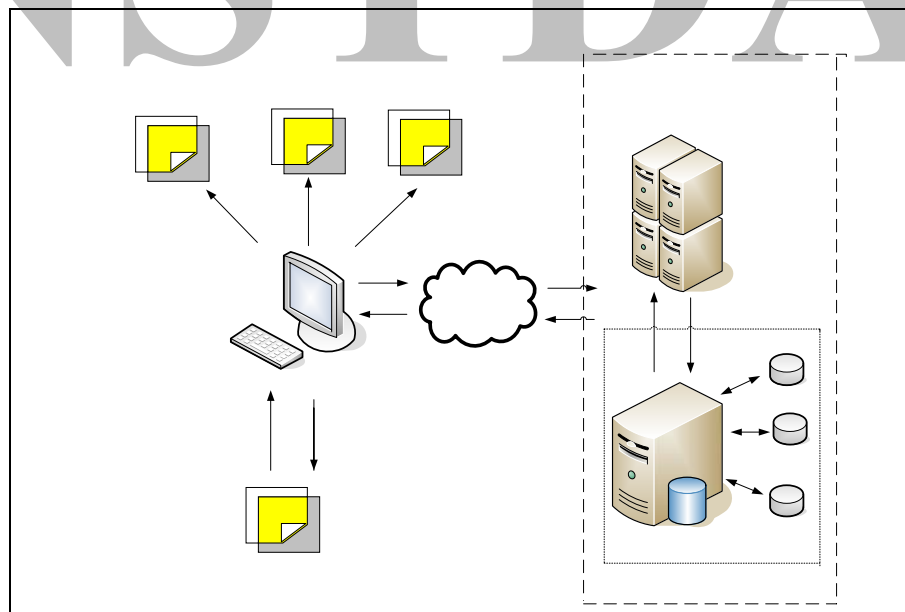


Fig. 1 Overview of PACS

RESULTS: The results are shown in Figure 2 and Figure 3. The system can manage the DICOM files for example, opening file, single viewing, examining in 3 views (axial view, coronal view, sagittal view) called multiple view, instancing between points, saving file, printing file, and creating panoramic view along with dental information in both text and images via networks with efficiency.

CLIENTS SITE

BMP JPG GIF
Files

DICOM

STL

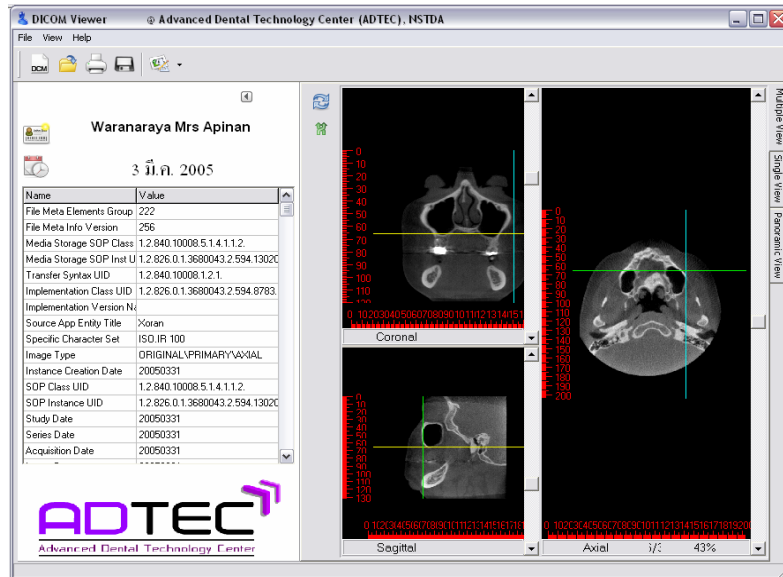


Fig. 2 DICOM Viewer with multiple views

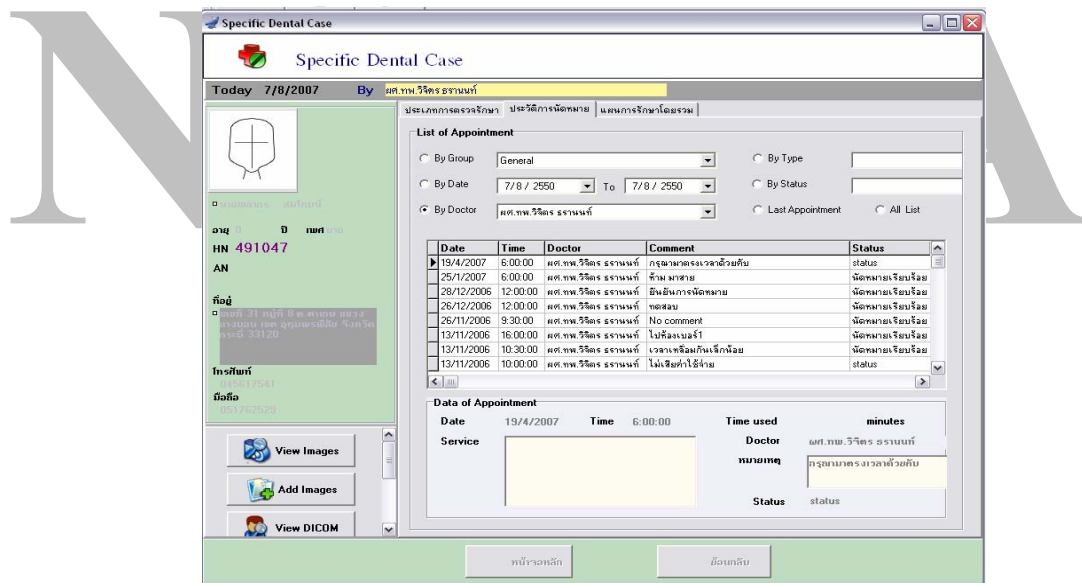


Fig. 3 Dental information in both text and image files

CONCLUSION: There are several types of data needed to be handled in the dental application such as patient's information, medical data, treatment plans, and treatment results. The implementation of the PACS with computer networks has helped dentists manage these data more systematic and ready to use even in remote area.

REFERENCES:

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3. MySQL : <http://www.mysql.com/>
4. Borland C++ Builder™ : <http://www.borland.com/>