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SMART MOBILE APPLICATION TO ENHANCE LEARNING FOR DENTAL SCHOLARS

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*ABSTRACT--**This paper proposes survey to get the correct information about particular Patient and to reduce human efforts. The user can maintain all the records about Patient Details, Appointments, Doctor Details, Follow-ups and Bill and save it in the database. Enable the clinicians and administrators to search documents and records by criteria such as patient name, date of birth, address, and medical condition from within familiar Office applications. Classification of on the dental caries is important for the diagnosis and treatment planning of the dental disease, which has been affecting a very large population throughout the globe. It is also helpful for conducting detailed study and investigations about the nature of the dental disease. Classification of dental diseases is decided on the basis of certain criteria, such as based on whether the lesion is within the enamel, dentin or whether it touches the pulp. Dental caries are, clearly visible in the x-ray changes and that can be detected from the caries lesion present in the radiographs. In this paper we propose to show how image processing techniques will help check the 3D image and examine the extent to which the caries lesion is present and then classify the type of caries present in the dental radiograph.***

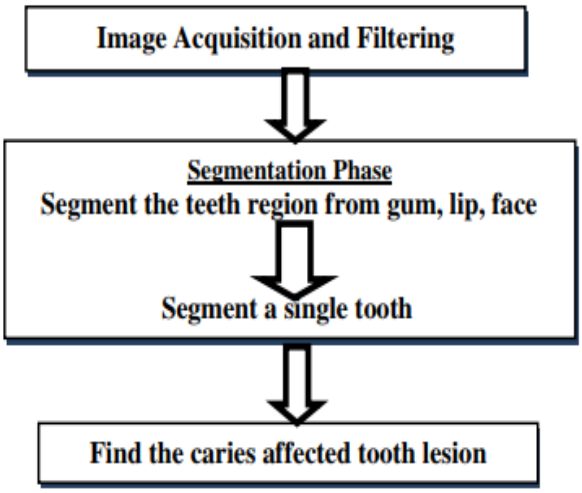
KEYWORDS- Dental caries, Radiographs, Lesion ,Enamel, Quantitative Light Fluorescence, x-ray, image processing techniques,.

I.INTRODUCTION

Dental Clinics, Dental department or other specialty department in a general hospital can use this software. Though this software was designed primarily with the inputs from dental Clinics, it could be adoptable in other specialty hospitals also, with some little changes in the medical terms, database .DCMS software has been developed to provide comprehensive software solution for the clinics. But there are clinics that cannot afford to run such comprehensive system or may not be required due to the volume of work handled. Still to encourage such clinics to use computers for generating useful information to run the organization efficiently, we provide the following Software from which one can choose according to their requirement. In this system which will help dentist to keep track patient dental problems, from time to time.

This system allow dentist to help patient to improve their awareness and take care about their oral health. The data regarding the patient dental information will help the patient in order to apply for the next treatment and also to be used for the future.DCMS can analysis the data that had been captured and come out with the analysis report to summarize the dental score for each patient. The reports able to summarize the patient dental healthcare performance from time to time according to the treatment made. Other than help the patient to

upgrade their awareness regarding the oral health, these reports will also give benefits to patients as they can view their dental health performance.



Medical imaging has undergone dramatic modification and technological breakthrough since the introduction of digital radiography. this text presents the information on the event of digital radiography and sorts of digital radiography systems. Aspects of image quality and radiation exposure management area unit highlighted. to boot, the article collectively includes connected purpose changes and accumulation problems among the digital radiography setting.

III. LITERATURE SURVEY

[1] Maria Javaid, Seema Ashrafi, Milos Zefran and Arnold D. Steinberg Proposes to ToothPIC is an interactive program employing 3D graphics to teach students about the tooth anatomy. Further, it uses the game-based learning paradigm to keep the students engaged in learning. The program was designed to facilitate students' self-training in tooth identification and tooth alignment skills, provide for unlimited practice time and require less student/instructor interaction while helping students more efficiently and effectively learn these basic skills. The program was developed using a variety of open-source components. The crucial part of making the program successful was the input of dentists and potential users. An evaluation of the program shows that the program achieves its design objectives, i.e., it offers an interactive ancillary tool that novice students can use outside of the classroom to provide a game-like, interactive and enjoyable self-training process for the student

[2] Genyuan Xia, Li Chen Evaluate the mesh repairing method for segmented intra-oral scanned dental meshes. The method uses templates to provide additional dental information to repair missing parts on incomplete segmented dental meshes. The missing parts are determined by registration result using improved Iterative Closest Point (ICP) method, followed by a deformation-based repairing process. Using information from well-established templates, the repairing can provide reliable estimation for large missing area. The proposed method is automatic, simple, efficient and effective regarding different tooth shapes and missing parts. The conducted experiments demonstrate the effectiveness of the method. Using template meshes with reliable dental information, it is possible to estimate large missing area with deformation techniques. The method is simple, automatic and effective regarding different tooth shapes and various missing dental parts. The experiments demonstrate the effectiveness of our method. It is noted that the proposed method still have problems with the repairing boundaries requiring additional hole- filling, cell deleting or smoothing operations. It is our future work to embed additional mesh features and constraints during the repairing process.

[3] Keerthana K M, Rajeshwari B, Keerthi S, Hema P Menon Implement Different lifestyle practices of people across various regions are found to have significant effect in the development of tooth structure of an individual. Differences have also been observed in the shape of the same type of tooth. In-order to study these effects it becomes necessary to develop an automated system which can classify the tooth into its corresponding classes. Tooth is generally classified into incisors, canines, molars and premolars. In this paper, classification of tooth type from the dental radiographs has been done using vertical projection profile and shape analysis. The features considered for classification are the number of roots and standard deviation of the dental X-ray image.

The proposed method has been tested on radiograph images obtained from anonymous persons. In this work a method for classifying the tooth type based on vertical projection profile and shape analysis of the dental X-ray images has been proposed. The number of roots obtained from vertical projection profile analysis and the standard deviation measured from shape analysis has been used as features to classify the tooth type. There can be discrepancies in the output of the system if the images contain excess noise. This system identifies the four possible tooth types namely incisor, canine, molar and premolar. This could be integrated into any dental analysis system to help the practitioners for classification based on the region and lifestyle practices of people.

[4] Jianrong Lu, Youjun Liu and Niya Tuo Suggest that Dental panoramic radiography, which plays an important part in the diagnosis of oral diseases especially the plastic, has been widely used in hospitals as a branch of radiography. The dental panoramic X-ray images show a two dimensional view of whole teeth from left second molar to right second molar only, but they do not contain the 3D information of patients' oral and maxillofacial anatomical structure. A method was proposed in this paper to bend the dental panoramic X-ray images according to the curve which was fitted by the patient specific dental arch for the 3D visualization of dental panoramic X-ray images. In this paper we proposed a method to realize the 3D display of 2D dental panoramic X-ray images based on OpenGL and β function. The β function was used to generate the fitted dental arch. The OpenGL was utilized to bend the dental panoramic image according to the fitted dental arch curve in the 3D space. Although the 3D visualization could provides dentists the view of intuitionistic spatial interrelation of teeth and it is in favor of the diagnosis and treatments in dental diseases, the errors were imported because of the abnormal dental arch of the patients or the wrong positioning of the patient during radiography. If we obtain the actual dental arch curve of the patient and use that curve to realize the 3D visualization, the accuracy of 3D visualization will be improved. The correction of distortion which was caused by the imaging process and the measurement of teeth would be the future works.

[5] Mingxi Zhao, Lizhuang Ma, Wuzheng Tan and Dongdong Nie Investigate the accurate segmentation of the teeth from the triangle mesh is an important step in computer-aided orthodontic. Because teeth come in different shapes and their arrangements vary substantially from one individual to another, tooth segmentation is difficult. This paper proposes a new method to accurately segment the teeth interactively. Based on curvature values of the triangle mesh, feature points are connected to feature regions. After feature lines are extracted from regions, feature contour can be obtained with the help of user supplied information. Using feature contour, the tooth are segmented accurately and individually. In this paper, a novel tooth segmentation algorithm is proposed, which can decompose the dental model into individual teeth accurately. Even with severe malocclusions, it can work well. In our method, user must provide some necessary information to complete the segmentation. However, the aided tool is simple and intuitive. How to decrease the user input is a future work. In our method, the final contour are not smooth. To smooth the final contour is another future work.

IV. SYSTEM DESIGN

4.1 PROPOSED SYSTEM

In proposed method, we are creating android mobile application for dental analysis. Here, we are showing tooth images as a 3D type images. This system is able to segment each tooth, caries lesion and monitor the growth of lesion size. The main goal of this research work is to find the exact caries lesion of affected teeth which helps dentist for better follow-up and diagnosis. Dental caries are also known as tooth decay or dental cavities. It is caused by the action of acids on the enamel surface. It is mainly three types like enamel caries, dentinal caries and pulp caries.

4.1.1 ADVANTAGE

1. At the individual level it is preventable disease.
2. For that dental caries should be detected at its early stage otherwise if it will touch the pulp then the treatment will become more complicated.

4.2 EXISTING SYSTEM

Similarly there are different types of biomedical non-evasive imaging modalities such as X-ray, computed tomography (CT), magnetic resonance imaging (MRI), ultrasound images, and many others, which are used in the medical field for disease diagnosis and treatment planning. These imaging modalities reflect the state of the internal anatomy and dynamic body functions. It is important to understand the principal imaging modalities and the processing techniques to enhance, filter, segment, and interpret such images.

4.2.1 DISADVANTAGE

1. Techniques similar to the ones just discussed, but generally involving higher energy X-rays, are applicable in industrial processes.
2. Such images, representative of literally hundreds of industrial applications of X-rays, are used to examine circuit boards for flaws in manufacturing, such as missing components or broken traces.

V.CONCLUSION

The proposed caries detection technique is comparatively less expensive with respective to other methods. It uses visible light. Hence it is not harmful for human being. QLF uses staining material which has side effect. Our proposed method can detect caries lesion with more than 93% accuracy. However, it fails to detect individual teeth in case of a broken tooth. The proposed method works only on the surface of the tooth enamel and it is unable to detect the depth of the caries.

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