**Group Software Project**

Analysis of Problem

A new patient record system is required for a dental practice, we are tasked with creating this system with security and privacy issues considered in the system design. The system that we create will need to be able to fulfil the functional requirements that were given to us by the dental practice, these requirements that we need to implement are:

**Patient** – For each patient the system should be able to record their names and addresses, the patient’s first choice dentist, a list of all their visits to the practice (with date and type of ailment) and a list of the treatments received by each patient (with date). This data will be stored in a Caesar ciphered text file that will be accessed by an array, this will improve the security of the system.

After logging into the system the patient should be able to add and change their personal details, see a list of their previous visits to the practice as well as the treatments they received upon these visits, request an appointment with their choice of dentist and decide if the administrator can access their treatment list (for better privacy). All of these options will be available in a sub-menu once the patient has used their patient ID, first name, last name and password to log in.

**Dentist** – For each dentist the system should record their names and addresses, the day in which the dentist works, a list of their appointments with patients and a list of previous treatments made by each dentist. This data will be stored in a Caesar ciphered text file that will be accessed by an array, this will improve the security of the system.

After logging into the system the dentist should be able to add and change their personal details, view their calendar for upcoming appointments, access a list of previous appointments as well as add treatment to a patient in the record system and also access a list of previous treatments that had been completed by him/her. All of these options will be available in a sub-menu once the dentist has used their dentist ID, first name, last name and password to log in.

**Administrator** – The practice administrator should be able to list upcoming appointments for all the dentists, list previous visits made by each patient and list treatments made per dentist as long as access is allowed by the patients. This data will be stored in a Caesar ciphered text file that will be accessed by an array, this will improve the security of the system.

The administrator should also be able to add/remove dentists from the system, add/remove patients from the system, add/change first choice dentist and alter working days for the dentist. All of these options will be available in a sub-menu once the administrator has used their username and password to log in.

**Summary** - To implement these features will have to create a menu system that allows the patient, dentist and administrator to log in, upon login the user will be taken to a specific sub-menu relating to their role in the dental practice. From this sub-menu they will then be able to use all the functions relating to their role which are listed above.

The security of the system is also a very important feature that will need to be implemented, this will mainly be done in two forms, which are secure login system as well as encrypting all the text files used that stores information about patients and dentists. To improve security and privacy further patients and dentists will only be able to view the information on the text files that relate to them, for example a dentist will only be able to view their upcoming appointments, and patients will only be able to view their own treatment list.