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Database Project Report -2021

The aim of this project was to design and construct a database that can be deployed in a commercial database management system. Based on the given scenario, I created a database that could be used to aid in the smooth running of the dental clinic.

When creating this database I took into account what would make the dental practice more efficient, limit paper documents, quicker and safer access to patient records and staff management.

My objectives were as follows:

1. To provide a systematic schedule system.
2. To reduce the workload and errors made by staff when booking or rescheduling an appointment.
3. To provide an efficient way of handling payments.
4. To ensure a smooth referral process.

I digitized patients' records so as to make data retrieval easy and efficient. The database was developed using PHP & MySql to automate internal work flow and manage various aspects of a small clinic.

This Dental Clinic Database schema consists of the following tables:

• **Appointment**: store appointment dates and times for patients
• **Patient**: store patient's data
• **Treatment**: stores a list of treatment procedures offered at the clinic
• **Bill:** stores billing information
• **Payment**: stores payments made by patients
• **Specialist**: stores specialist data
• **Referrals**: stores patient referral data
• **Employee:** stores all employee info as well as clinic structure
• **Office**: stores clinic office data

Based on the scenario provided, a plan was developed so ensure that the database created would be user-friendly with robust functionalities that suit the requirements of Dr Mary Mulcahy's Dental Clinic.

Creating the Dental Practice's database:

The CREATE query using SQL database language was implemented to generate Tables, Attributes, Primary Keys, Foreign Keys and Constraints to create a Relational Schema. A schematic representation of the database using Entity Relationship Diagram (ERD) is also included in this project. A sample test data was created randomly and inserted into the database. The INSERT query is also provided in the attached SQL script.

To test for functionality and efficiency of the database CRUD Queries were implemented using SQL scripts such as:

1. Create
2. Insert
3. Update
4. Select
5. Delete.

The database was also tested to see if satisfied the guidelines of Codds Rules. Each rule has been stated and explained using SQL queries to show its agreement.

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