Atlantic Technological University

HIGHER DIPLOMA IN SCIENCE IN SOFTWARE DEVELOPMENT

PROJECT REPORT ON

VETERINARY CLINIC DATABASE

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The primary objective of this project was to create a comprehensive veterinary clinic database using MySQL, facilitating efficient storage, management, and retrieval of information for clinic staff. The provided files include a PDF of the database schema, SQL scripts for database creation and queries, and a PDF outlining Codd's rules.

DATABASE DESCRIPTION

The veterinary clinic database consists of nine tables: animal, animal_appointment, appointment, examination, medical information, medicines_prescribed, owner, treatment_invoice, and veterinarian. Each table is equipped with a primary key to ensure unique record identification.

Animal

This table captures details of animals requiring treatment, including animal ID, name, date of birth, breed, gender, and owner ID.

Appointment

Records details of appointments, such as appointment ID, date, and time.

Animal_appoitment

Manages the many-to-many relationship between animals and appointments, including the veterinarian assigned.

Examination
Documents details of each animal examination, including examination number, results, animal ID, and veterinarian ID.

Medical_information

Captures information about vaccines and allergies based on examination results.

Medicines_prescribed

Records medication details, including name, regime, cost, and examination number.

Owner

Stores information about pet owners, including owner ID, name, surname, phone, address, and associated animal.

Veterinarian

Contains information on staff members, including veterinarian ID, name, surname, and position.

Treatment_invoice

Documents the cost of treatment for each examination, including invoice number, payment amount, date, owner ID, and examination number.

TOOLS AND TECHNOLOGIES

The database was created using MySQL, an open-source, high-performance relational database system. The development environment utilized XAMPP, an integrated solution with Apache HTTP Server and MySQL Database, and PhpMyAdmin, a management tool with a user-friendly web interface.

MySQL is a free source database system, and it enables the cost-effective delivery of reliable high-performance, and scalable Web-based and embedded database applications. It is a relational database system (RDBMS). It is a high-performing program and scalable to meet the demands of users and data.

XAMPP is an integrated development surrounding, which incorporates Apache HTTP Server, and MySQL Database. Apache is a free web server.

PhpMyAdmin is a free and open-source MySQL management program application. It is cross-platform help for the essential working structures and helps the management of more than one server. It supports most MySQL capabilities and has an intuitive net interface. It additionally supports developing PDF graphics of database layout, importing information from CSV and SQL formats as well as exporting records to various codecs such as SQL, XML, PDF, and CSV.

OBSERVED LIMITATIONS

The database has been designed to meet all the requirements but there is limitations which can be enhanced in future updates. One of them is as follows:

1. **Data Redundancy:** There's a potential for redundancy in the **medicines_prescribed** table, as medication names are duplicated for different examinations. A separate table for medication names might reduce redundancy.
2. **Incomplete Medication Information:** Some records in the **medicines_prescribed** table have missing medication names (**null**). This could lead to confusion or misinterpretation during analysis.
3. **Lack of Audit Trails:** The database lacks mechanisms to track changes made to records over time. Incorporating audit trails could enhance data integrity and traceability.

CONCLUSION

While the database fulfils current requirements, several limitations were observed during its development. Data redundancy and incomplete information in the medication table could be addressed through further normalization and validation processes. Additionally, the inclusion of audit trails would improve the database's ability to track and manage changes over time. Despite these limitations, the database is operational and can efficiently store and retrieve data. Its extensibility allows for future modifications and additions to meet evolving needs, making it a solid foundation for a veterinary clinic management system.