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CSC 423: Database Systems

Design, development, and implementation of a relational database

Part # 3

Translate the logical data model for the Oracle Enterprise DBMS.

a) Develop SQL code to create the entire database schema, reflecting the constraints identified in previous steps

The attached embedded SQL code contains the queries corresponding to the creation of the database schema. To comply with referential integrity (foreign key values in one table must correspond to valid primary key values in another table), we created the tables in the following order:

1. Position
2. Clinic
3. Staff
4. Animal
5. Owner
6. Pet
7. Examination

The **Clinic** and **Staff** tables reference each other in a circular dependency (e.g., **Clinic** references **Staff**, and **Staff** references **Clinic**). Therefore, we needed to first create each table without any foreign key constraints, then create a new copy of the **Clinic** table that includes a foreign key to the **Staff** table and drop the original **Clinic** table, and finally create a new copy of the **Staff** table that includes a foreign key to the **Clinic** table and drop the original **Staff** table.

b) Develop the 5 SQL queries that correspond to 2c using embedded SQL.

The following are the queries explored in the attached code:

Register a new pet - add Milan Diaz's golden retriever to the database: insert the pet's details into the Pet table and assign a clicNo to the pet. If the pet belongs to a new owner, register the owner's details in the Owner table. Moreover, ensure that the species and breed exist in the Animal table.

Update a clinic's manager - make Elizabeth McDonald manager for the Little Havana branch: update the manager field in the Clinic table. Ensure the new mana
ger's staffNo exists in the Staff table.

Find how many pets Catherine Williams has: count the number of rows in the Pet table where ownerNo matches the given owner.

Find the average salary of each position: group the rows in the Position table by the position attribute, and calculate the average salary.

Count the number of pets registered in each clinic: group the rows in the Pet table by the clinicNo attribute, and count the number of rows for each clinic.

c) **Upload all the code and documentation to GitHub.**

Link to GitHub repository: https://github.com/dnunezdelarco/csc423.git