

Your Final Task

RELATIONAL DATABASE DESIGN

Introduction

“It’s a Dog’s Life” is a kennel that operates just outside the village of Newtown. The kennel’s function is to look after dogs while their owners are out of town. To help with the running of the kennel, they maintain a spreadsheet of the name, breed, and age of each dog who is staying with them, as well as the name, address and phone number of each dog’s owners. The database also stores special instructions for the care of each dog, as well as which kennel room the dog is staying in, and a note of the unique microchip number which each dog has implanted in their neck. Every dog must have a chip number. Vet notes are added to the spreadsheet if a dog is seen by the vet and vet notes must be associated with a single dog. The current way in which the data are stored is shown in the table below. Note that each person can own more than one dog and each dog can have more than one owner. The vet columns are empty unless the dog has been seen by the vet. A vet visit cannot exist without a dog, of course.

Dog Name	Dog Breed	Dog Age	Owner	Owner Address	Owner Phone	Dog Chip No	Note	Room	Vet ID	Vet Date	Vet Note
Fido	Labrador	10	Sarah Smith	The Meadows Newtown FK40 7LL	01234 567890	545682	None	1			
Fido	Labrador	10	John Smith	The Meadows Newtown FK40 7LL	01234 567890	545682	None	1			
Sheba	Labrador	9	Sarah Smith	The Meadows Newtown FK40 7LL	01234 567890	356784	None	2	76	20.05.18	Worming tablets given
Pat	Labradoodle	3	Sarah Smith	The Meadows Newtown FK40 7LL	01234 567890	746587	Enjoys petting	3			
Paddy	Golden retriever	7	Frank Jones	14 Main Street Newtown FK40 6TT	0376 458015	546875	Enjoys all	6			
Rex	Mongrel	6	Frank Jones	14 Main Street Newtown FK40 6TT	0376 458015	546888	Requires pills	12			

You have been tasked to turn these data into a relational database. You will need to build the database and write a report about what you did. You only need to submit the report. It should have the following sections:

a. **Introduction** – Introduce the business requirements and describe one business rule and one use case you can identify from the scenario given above.

10 marks

b. **ER Diagram** - Identify the entities and relationships in the scenario given above and draw an ER diagram showing the entities, attributes, relationships, and cardinality. Do not decompose any of the relationships at this point.

10 marks

c. **Database Schema** - Decompose the design to create a schema to store the data in a suitable normal form (2NF or 3NF). Say which normal form the design is in and justify your choice. List the tables and show the fields, primary keys, and any foreign keys in your schema. Describe any assumptions you have made or any additional fields you have added to your design. Make sure all the primary keys are a sensible choice and introduce new fields if needed. Draw a schema diagram to illustrate your design.

20 marks

d. **Create Tables** - Create a MySQL database to store the schema that you designed in part c. above. Create the tables using SQL statements and reproduce the code in your answer report. Define the keys and choose appropriate data types and any other restrictions you think are required.

20 marks

e. **Insert the Data** – Insert the data given above into the appropriate tables. Give a single example of an SQL statement that you used to insert one row of data into one of the tables.

10 marks

f. **SQL Queries** - Carry out the appropriate SQL queries of answering the following questions. For each query, give the SQL code and the result of running the query on the data in your database. (Berikan screenshoot SQL queries dan hasil runningnya)

- i. Return a list of all dog names (2)
- ii. Return a list of all dog breeds, showing each breed only once (3)
- iii. Write a query to count how many dogs have the string “Labr” in their breed(2)
- iv. Calculate the average age of all dogs in the kennel (2)
- v. Calculate the average age of dogs by breed (3)
- vi. Find the breed of dog that has an average age of more than 8 (4)
- vii. List all the dog names along with their owners’ names (4)
- viii. List all the dogs who have had a vet note recorded. Give the name of the dog and the date of the vet note (5)

Deadline Hari Senin Tanggal 15 Juli 2024. Penjelasan poin a – e menggunakan Bahasa Indonesia. Tugas yang memiliki penjelasan sama (plagiat) tidak mendapatkan nilai (0) untuk nilai UAS.

Jangan Lupa Menulis Nama- NIM – Prodi di bagian Atas

PENGUMPULAN TUGAS SUBMIT KE SEVIMA SEBELUM DEADLINE BERAKHIR.

Best Regards,

Aisyah.