

CPSC 304 Project Cover Page

Milestone #: 4

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Group Number: 18

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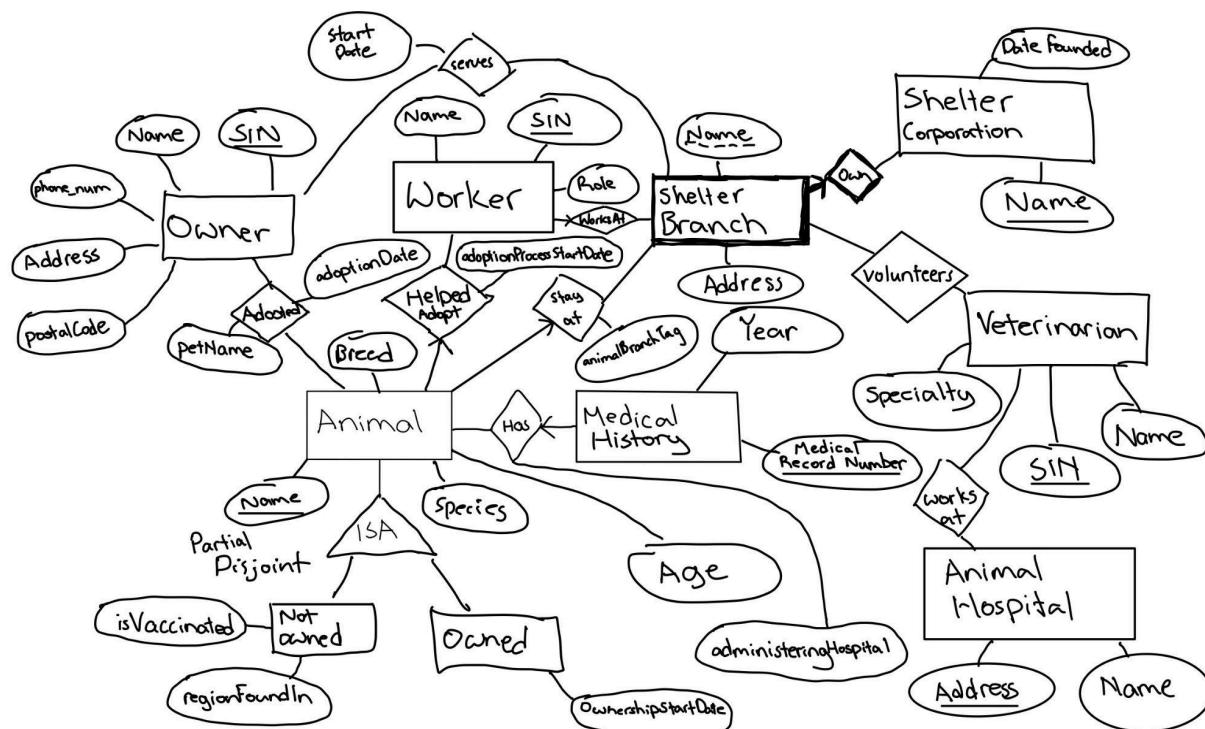
By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

Project summary

Our project models a pet adoption system managed by an animal shelter. This shelter serves clients who can adopt pets staying at the animal shelter. The shelter is just one branch that is owned by a shelter corporation which manages animal shelter branches within a certain region of the country. Moreover, the shelter is associated with an animal hospital which manages the health of the sheltered animals. In the hospital, veterinarians are responsible for administering vaccines for animals at the shelter and performing monthly health-checkups.

ER Diagram



Changes to schema since milestone 3:

- Merged both HelpedAdopt and StayAt relations with Animal table, since they are both many to one, as suggested by milestone 2 feedback.

Schemas:

1. AnimalHelpedAdopt1(**breed**: varchar(200), species: varchar(200))
2. AnimalHelpedAdopt2(**name**: varchar(200), age: integer, adoptionProcessStartDate: varchar(200), **breed**: varchar(200), **workerSIN**: char(8), **corporationName**: varchar(200), **branchName**: varchar(200), animalBranchTag: char(9))
3. NotOwnedAnimal(**animalName**: varchar(200), isVaccinated: Number(1, 0), regionFoundIn: varchar(200))
4. OwnedAnimal(**animalName**: varchar(200), ownershipStartDate: varchar (200))
5. Owner1(**sin**: char(8), name: varchar(200), phone_num: char(10), **address**: varchar(200))
6. Owner2(**address**: varchar(200), postalCode: char(6))
7. Adopted(**ownerSIN**: char(8), **animalName**: char(20), adoptionDate: varchar (200), petName: varchar(200))
8. WorkerWorksAt1(**branchName**: varchar(200), corporationName: varchar(200))
9. WorkerWorksAt2(**branchName**: varchar(200), **sin**: char(8), name: varchar(200), role: varchar(200))
10. ShelterCorporation(**name**: varchar(200), dateFounded: varchar (200))
11. ShelterBranchInfo(**corporationName**: varchar(200), **branchName**: varchar(200), branchAddress: varchar(200))
12. BranchServiceInfo(**branchName**: varchar(200), **corporationName**: varchar(200), **ownerSIN**: char(8), serviceStartDate: varchar(200))
13. AnimalHospital(**hospitalAddress**: varchar(200), name: varchar(200))
14. VeterinarianWorkInfo(**vetSIN**: char(8), **hospitalAddress**: varchar(200))
15. VeterinarianVolunteerInfo(**vetsIN**: char(8), **branchName**: varchar(200), **corporationName**: varchar(200))
16. VeterinarianInfo(**vetSIN**: char(8), specialty: varchar(200), name: varchar(200))
17. AnimalMedicalHistory(**medicalRecordNumber**: char(9), **animalName**: varchar(200), administeringHospital: varchar(200), yearOfRecord: integer)

Screenshots of Data After SQL Script Initialization

Retrieved data from table **OWNER2**:

ADDRESS	POSTALCODE
101 Pine Street, Birch Wood, FL	K6L7M8
123 Maple Street, Willowdale, CA	A1B2C3
456 Oak Ave, Pinecrest, NY	X0Y1Z2
789 Elm Lane, Cedar Springs, TX	H3I4J5
912 Steven Street, Spruceville, AZ	N9O0P1

Retrieved data from table **VETERINARIANINFO**:

VETSIN	SPECIALTY	NAME
11111111	Emergency	Dr. Grace Wellness
22222222	Infectious Diseases	Dr. Grace Wellness
33333333	Pediatrics	Dr. Michael Healing
44444444	Parasitology	Dr. Emily Healthwise
55555555	Orthopedics	Dr. Robert Renewal

Retrieved data from table **ANIMALHOSPITAL**:

HOSPITALADDRESS	NAME
101 Maple Lane, Seaside City	Seaside Veterinary Center
123 Main Street, Cityville	CityVet Clinic
456 Oak Avenue, Suburbia	Suburb Paws Veterinary Hospital
555 Elm Street, Metroville	MetroVet Care
789 Pine Road, Rural Town	RuralCare Animal Clinic

Retrieved data from table **SHELTERCORPORATION**:

NAME	DATEFOUNDED
Animal Care Services	1995-08-20
Compassionate Pets Inc	2003-03-10
Happy Tails Corp	1998-11-25
Pet Haven Corporation	2000-05-15
Wildlife Guardians Ltd	2005-07-03

Retrieved data from table **SHELTERBRANCHINFO**:

CORPORATIONNAME	BRANCHNAME	BRANCHADDRESS
Animal Care Services	Suburb Pet Sanctuary	456 Oak Avenue, Suburbia
Compassionate Pets Inc	Rural Animal Shelter	789 Pine Road, Rural Town
Happy Tails Corp	Coastal Animal Rescue	101 Seaside Boulevard, Seaside City
Pet Haven Corporation	City Animal Rescue	123 Main Street, Cityville
Wildlife Guardians Ltd	Mountain Pet Haven	555 Mountain View, Mountain Town

Retrieved data from table **WORKERWORKSAT1**:

BRANCHNAME	CORPORATIONNAME
City Animal Rescue	Pet Haven Corporation
Coastal Animal Rescue	Happy Tails Corp
Mountain Pet Haven	Wildlife Guardians Ltd
Rural Animal Shelter	Compassionate Pets Inc
Suburb Pet Sanctuary	Animal Care Services

Retrieved data from table **WORKERWORKSAT2**:

BRANCHNAME	SIN	NAME	ROLE
City Animal Rescue	12345678	John Doe	Veterinarian
Coastal Animal Rescue	98765432	Emily Davis	Receptionist
Mountain Pet Haven	34567890	Chris Miller	Groomer
Mountain Pet Haven	11112233	Chris Miller	Groomer
Rural Animal Shelter	23456789	Sam Johnson	Administrator
Suburb Pet Sanctuary	87654321	Jane Smith	Animal Care Technician

Retrieved data from table **ANIMALHELPEDADOPT1**:

BREED	SPECIES
American Short Hair	Cat
German Shepherd	Dog
Golden Retriever	Dog
Maine Coon	Cat
Tibetan Mastiff	Dog

Retrieved data from table **ANIMALHELPEDADOPT2**:

NAME	AGE	ADOPTIONPROCESSDATE	BREED	WORKERSIN	CORPORATIONNAME	BRANCHNAME	ANIMALBRANCHTAG
Buddy	3	2020-11-20	American Short Hair	87654321	Animal Care Services	Suburb Pet Sanctuary	plokijuhy
Duck	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Felix	5	2018-11-20	Golden Retriever	23456789	Compassionate Pets Inc	Rural Animal Shelter	mnbvcxzaz
Haad	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Mango	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Penny	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Ryan	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Scoopy	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Snoopy	1	2022-11-20	German Shepherd	12345678	Pet Haven Corporation	City Animal Rescue	qwertyui

Retrieved data from table **NOTOWNEDANIMAL**:

ANIMALNAME ISVACCINATED REGIONFOUNDIN

Buddy	1	Burnaby
Felix	0	Seattle
Haad	0	UBC
Snoopy	1	White Rock

Retrieved data from table **OWNEDANIMAL**:

ANIMALNAME OWNERSHIPSTARTDATE

Duck	2018-11-30
Mango	2012-11-30
Penny	2016-11-30
Ryan	2014-11-30
Scoopy	2020-11-30

Retrieved data from table **BRANCHSERVICEINFO**:

BRANCHNAME	CORPORATIONNAME	OWNERSIN	SERVICESSTARTDATE
City Animal Rescue	Pet Haven Corporation	12345678	2023-01-15
Coastal Animal Rescue	Happy Tails Corp	23456789	2023-04-20
Mountain Pet Haven	Wildlife Guardians Ltd	34567890	2023-05-05
Rural Animal Shelter	Compassionate Pets Inc	98765432	2023-03-10
Suburb Pet Sanctuary	Animal Care Services	87654321	2023-02-01

Retrieved data from table **ANIMALMEDICALHISTORY**:

MEDICALRECORDNUMBER	ANIMALNAME	ADMINISTERINGHOSPITAL	YEAROFRECORD
111111111	Scoopy	Vancouver Animal Hospital	2013
222222222	Duck	Vancouver Animal Hospital	2014
333333333	Penny	Surrey Animal Hospital	1999
444444444	Ryan	Burnaby Animal Hospital	2000
555555555	Mango	Vancouver Animal Hospital	2023

Retrieved data from table **VETERINARIANVOLUNTEERINFO**:

VETSIN	BRANCHNAME	CORPORATIONNAME
111111111	Coastal Animal Rescue	Happy Tails Corp
222222222	Mountain Pet Haven	Wildlife Guardians Ltd
333333333	City Animal Rescue	Pet Haven Corporation
444444444	Suburb Pet Sanctuary	Animal Care Services
555555555	Rural Animal Shelter	Compassionate Pets Inc

Retrieved data from table **VETERINARIANWORKINFO**:

VETSIN	HOSPITALADDRESS
11111111	123 Main Street, Cityville
11111111	789 Pine Road, Rural Town
22222222	101 Maple Lane, Seaside City
22222222	456 Oak Avenue, Suburbia
33333333	789 Pine Road, Rural Town
44444444	101 Maple Lane, Seaside City
44444444	123 Main Street, Cityville
44444444	456 Oak Avenue, Suburbia
44444444	555 Elm Street, Metroville
44444444	789 Pine Road, Rural Town
55555555	101 Maple Lane, Seaside City
55555555	123 Main Street, Cityville
55555555	456 Oak Avenue, Suburbia
55555555	555 Elm Street, Metroville
55555555	789 Pine Road, Rural Town

Retrieved data from table **OWNER1**:

SIN	NAME	PHONE_NUM	ADDRESS
12345678	Zephyr Evergreen	6040987654	123 Maple Street, Willowdale, CA
23456789	Juniper Frost	7780987654	101 Pine Street, Birch Wood, FL
34567890	Phoenix Rain	7786758456	912 Steven Street, Spruceville, AZ
87654321	Seraphina Nightingale	6041234567	456 Oak Ave, Pinecrest, NY
98765432	Orion Wilder	6047986756	789 Elm Lane, Cedar Springs, TX

Retrieved data from table **ADOPTED**:

OWNERSIN	ANIMALNAME	ADOPTIONDATE	PETNAME
12345678	Scoopy	2023-01-15	Whiskers
23456789	Ryan	2023-04-20	Splash
34567890	Mango	2023-05-05	Thumper
87654321	Duck	2023-02-01	Buddy
98765432	Penny	2023-03-10	Tweety

Screenshots

Insertion query

1. VeterinarianWorkInfo before executing query

Retrieved data from table **VETERINARIANWORKINFO**:

VETSIN	HOSPITALADDRESS
11111111	123 Main Street, Cityville
11111111	789 Pine Road, Rural Town
22222222	101 Maple Lane, Seaside City
22222222	456 Oak Avenue, Suburbia
33333333	789 Pine Road, Rural Town
44444444	101 Maple Lane, Seaside City
44444444	123 Main Street, Cityville
44444444	456 Oak Avenue, Suburbia
44444444	555 Elm Street, Metroville
44444444	789 Pine Road, Rural Town
55555555	101 Maple Lane, Seaside City
55555555	123 Main Street, Cityville
55555555	456 Oak Avenue, Suburbia
55555555	555 Elm Street, Metroville
55555555	789 Pine Road, Rural Town

2. During insertion query execution

Create new entry for a veterinarian work info

This will modify the VeterinarianWorkInfo table.

Veterinarian SIN:

Hospital Address:

3. VeterinarianWorkInfo after executing query

Retrieved data from table **VETERINARIANWORKINFO**:

VETSIN	HOSPITALADDRESS
11111111	123 Main Street, Cityville
11111111	456 Oak Avenue, Suburbia
11111111	789 Pine Road, Rural Town
22222222	101 Maple Lane, Seaside City
22222222	456 Oak Avenue, Suburbia
33333333	789 Pine Road, Rural Town
44444444	101 Maple Lane, Seaside City
44444444	123 Main Street, Cityville
44444444	456 Oak Avenue, Suburbia
44444444	555 Elm Street, Metroville
44444444	789 Pine Road, Rural Town
55555555	101 Maple Lane, Seaside City
55555555	123 Main Street, Cityville
55555555	456 Oak Avenue, Suburbia
55555555	555 Elm Street, Metroville
55555555	789 Pine Road, Rural Town

Join query

1. AnimalMedicalHistory and OwnedAnimal before executing join query

Retrieved data from table **ANIMALMEDICALHISTORY**:

MEDICALRECORDNUMBER	ANIMALNAME	ADMINISTERINGHOSPITAL	YEAROFRECORD
11111111	Scoopy	Vancouver Animal Hospital	2013
22222222	Duck	Vancouver Animal Hospital	2014
33333333	Penny	Surrey Animal Hospital	1999
44444444	Ryan	Burnaby Animal Hospital	2000
55555555	Mango	Vancouver Animal Hospital	2023
66666666	Mango	Vancouver Animal Hospital	2023

Retrieved data from table **OWNEDANIMAL**:

ANIMALNAME	OWNERSHIPSTARTDATE
Duck	2018-11-30
Mango	2012-11-30
Penny	2016-11-30
Ryan	2014-11-30
Scoopy	2020-11-30

2. During join query execution

Find the animals whose medical history was recorded after the given year.

Join

Year of record:

3. Joined table after executing join query

animalName medicalRecordNumber

Scoopy	11111111
Duck	22222222
Mango	55555555
Mango	66666666

Nested aggregation with group by

1.

Retrieved data from table **VETERINARIANWORKINFO**:

VETSIN	HOSPITALADDRESS
11111111	123 Main Street, Cityville
11111111	456 Oak Avenue, Suburbia
11111111	789 Pine Road, Rural Town
22222222	101 Maple Lane, Seaside City
22222222	456 Oak Avenue, Suburbia
33333333	789 Pine Road, Rural Town
44444444	101 Maple Lane, Seaside City
44444444	123 Main Street, Cityville
44444444	456 Oak Avenue, Suburbia
44444444	555 Elm Street, Metroville
44444444	789 Pine Road, Rural Town
55555555	101 Maple Lane, Seaside City
55555555	123 Main Street, Cityville
55555555	456 Oak Avenue, Suburbia
55555555	555 Elm Street, Metroville
55555555	789 Pine Road, Rural Town

2. During nested aggregation with group by query execution

Find the SINs of the veterinarians who have worked at the fewest number of hospitals.

Nested aggregation with group by

3. Result from running nested aggregation with group by query

Retrieved result from nested aggregation with group by:

vetSIN

33333333

Division

1. VeterinarianInfo, AnimalHospital and VeterinarianWorkInfo before executing division query

Retrieved data from table **VETERINARIANINFO**:

VETSIN	SPECIALTY	NAME
11111111	Emergency	Dr. Grace Wellness
22222222	Infectious Diseases	Dr. Grace Wellness
33333333	Pediatrics	Dr. Michael Healing
44444444	Parasitology	Dr. Emily Healthwise
55555555	Orthopedics	Dr. Robert Renewal

Retrieved data from table **ANIMALHOSPITAL**:

HOSPITALADDRESS	NAME
101 Maple Lane, Seaside City	Seaside Veterinary Center
123 Main Street, Cityville	CityVet Clinic
456 Oak Avenue, Suburbia	Suburb Paws Veterinary Hospital
555 Elm Street, Metroville	MetroVet Care
789 Pine Road, Rural Town	RuralCare Animal Clinic

Retrieved data from table **VETERINARIANWORKINFO**:

VETSIN	HOSPITALADDRESS
11111111	123 Main Street, Cityville
11111111	456 Oak Avenue, Suburbia
11111111	789 Pine Road, Rural Town
22222222	101 Maple Lane, Seaside City
22222222	456 Oak Avenue, Suburbia
33333333	789 Pine Road, Rural Town
44444444	101 Maple Lane, Seaside City
44444444	123 Main Street, Cityville
44444444	456 Oak Avenue, Suburbia
44444444	555 Elm Street, Metroville
44444444	789 Pine Road, Rural Town
55555555	101 Maple Lane, Seaside City
55555555	123 Main Street, Cityville
55555555	456 Oak Avenue, Suburbia
55555555	555 Elm Street, Metroville
55555555	789 Pine Road, Rural Town

2. During division query execution

Find the veterinarians (by their SIN) who have worked at all the hospitals

Division

3. Result of division query

Retrieved division result:

vetSIN	Name
44444444	Dr. Emily Healthwise
55555555	Dr. Robert Renewal

Projection

1. AnimalHelpedAdopt2 before executing projection query

Retrieved data from table **ANIMALHELPEDADOPT2**:

NAME	AGE	ADOPTIONPROCESSDATE	BREED	WORKERSIN	CORPORATIONNAME	BRANCHNAME	ANIMALBRANCHTAG
Bowen	7	2016-11-20	Tibetan Mastiff	98765432	Happy Tails Corp	Coastal Animal Rescue	ryeudjfh
Buddy	3	2020-11-20	American Short Hair	87654321	Animal Care Services	Suburb Pet Sanctuary	piokijuhy
Duck	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Felix	5	2018-11-20	Golden Retriever	23456789	Compassionate Pets Inc	Rural Animal Shelter	mnbvcxzaz
Haad	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Mango	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Penny	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Ryan	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Scoopy	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Snoopy	1	2022-11-20	German Shepherd	12345678	Pet Haven Corporation	City Animal Rescue	qwertyui

2. During projection query execution

Choose attributes of an animal to view

Projection on *AnimalHelpedAdopt2*

Name Age Adoption Process Date Breed Worker SIN Corporation Name Branch Name Animal Branch Tag

3. Result of projection query

Projection result:

name	age	breed
Snoopy	1	German Shepherd
Buddy	3	American Short Hair
Felix	5	Golden Retriever
Bowen	7	Tibetan Mastiff
Haad	9	Maine Coon
Scoopy	9	Maine Coon
Duck	9	Maine Coon
Penny	9	Maine Coon
Ryan	9	Maine Coon
Mango	9	Maine Coon

Selection

1. NotOwnedAnimal before executing selection query

Retrieved data from table **NOTOWNEDANIMAL**:

ANIMALNAME	ISVACCINATED	REGIONFOUNDIN
Bowen	1	Vancouver
Buddy	1	Burnaby
Felix	0	Seattle
Haad	0	UBC
Snoopy	1	White Rock

2. During selection query execution (filter for only vaccinated unowned animals)

Filter Not Owned Animals Based on animal name, vaccination status, and region.

Selection query on the *NotOwnedAnimal* table.

e.g. (*animalName* = 'Bowen' and *isVaccinated* = '1') or *regionFoundIn* = 'UBC'

Condition (SQL WHERE Clause):

3. Result of selection query

Retrieved result from selection:

animalName isVaccinated regionFoundIn

Snoopy	1	White Rock
Buddy	1	Burnaby
Bowen	1	Vancouver

Update

1. AnimalMedicalHistory before executing update query

Retrieved data from table **ANIMALMEDICALHISTORY**:

MEDICALRECORDNUMBER ANIMALNAME ADMINISTERINGHOSPITAL YEAROFRCORD

1111111111	Scoopy	Vancouver Animal Hospital	2013
2222222222	Duck	Vancouver Animal Hospital	2014
3333333333	Penny	Surrey Animal Hospital	1999
4444444444	Ryan	Burnaby Animal Hospital	2000
5555555555	Mango	Vancouver Animal Hospital	2023

2. During update query execution

Update Animal Name/Administering Hospital in MedicalHistory

The medical record number must match a record in our database and the animal name must refer to an existing animal. Otherwise, the update statement will not do anything.

Medical Record Number:

New Animal Name:

New Administering Hospital:

Current Year:

3. Result of update query

Retrieved data from table **ANIMALMEDICALHISTORY**:

MEDICALRECORDNUMBER	ANIMALNAME	ADMINISTERINGHOSPITAL	YEAROFRECORD
111111111	Duck	New Hospital	2024
222222222	Duck	Vancouver Animal Hospital	2014
333333333	Penny	Surrey Animal Hospital	1999
444444444	Ryan	Burnaby Animal Hospital	2000
555555555	Mango	Vancouver Animal Hospital	2023

Delete

1. AnimalHelpedAdopt2 before executing delete query

Retrieved data from table **ANIMALHELPEDADOPT2**:

NAME	AGE	ADOPTIONPROCESSDATE	BREED	WORKERSIN	CORPORATIONNAME	BRANCHNAME	ANIMALBRANCHTAG
Bowen	7	2016-11-20	Tibetan Mastiff	98765432	Happy Tails Corp	Coastal Animal Rescue	ryeudjfh
Buddy	3	2020-11-20	American Short Hair	87654321	Animal Care Services	Suburb Pet Sanctuary	plokijuh
Duck	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Felix	5	2018-11-20	Golden Retriever	23456789	Compassionate Pets Inc	Rural Animal Shelter	mnbvcxzaz
Haad	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Mango	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Penny	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Ryan	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Scoopy	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Snoopy	1	2022-11-20	German Shepherd	12345678	Pet Haven Corporation	City Animal Rescue	qwertyui

2. During selection delete execution (delete Snoopy's record)

Delete Animal From Database

The animal name must match a record in our database. Otherwise, the delete statement will not do anything.

Animal Name:

3. Result of delete query

Retrieved data from table **ANIMALHELPEDADOPT2**:

NAME	AGE	ADOPTIONPROCESSDATE	BREED	WORKERSIN	CORPORATIONNAME	BRANCHNAME	ANIMALBRANCHTAG
Bowen	7	2016-11-20	Tibetan Mastiff	98765432	Happy Tails Corp	Coastal Animal Rescue	ryeudjfh
Buddy	3	2020-11-20	American Short Hair	87654321	Animal Care Services	Suburb Pet Sanctuary	plokijuh
Duck	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Felix	5	2018-11-20	Golden Retriever	23456789	Compassionate Pets Inc	Rural Animal Shelter	mnbvcxzaz
Haad	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Mango	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Penny	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Ryan	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj
Scoopy	9	2014-11-20	Maine Coon	34567890	Wildlife Guardians Ltd	Mountain Pet Haven	jguriekdj

Aggregation with Group By

1. AnimalMedicalHistory before executing aggregation with group by query

Retrieved data from table **ANIMALMEDICALHISTORY**:

MEDICALRECORDNUMBER	ANIMALNAME	ADMINISTERINGHOSPITAL	YEAROFRECORD
111111111	Duck	New Hospital	2024
222222222	Duck	Vancouver Animal Hospital	2014
333333333	Penny	Surrey Animal Hospital	1999
444444444	Ryan	Burnaby Animal Hospital	2000
555555555	Mango	Vancouver Animal Hospital	2023

2. During aggregation with group by query execution (find number of medical records per year)

Find the number of animal medical records per year.

Aggregation with group by

Display

3. Result of aggregation with group by query

Aggregation result:

Year Number of Records

1999 1

2000 1

2014 1

2023 1

2024 1

Aggregation with Having

1. WorkerWorksAt2 before executing aggregation with having query

Retrieved data from table **WORKERWORKSAT2**:

BRANCHNAME	SIN	NAME	ROLE
City Animal Rescue	12345678	John Doe	Veterinarian
Coastal Animal Rescue	98765432	Emily Davis	Receptionist
Mountain Pet Haven	34567890	Chris Miller	Groomer
Mountain Pet Haven	11112233	Chris Miller	Groomer
Rural Animal Shelter	23456789	Sam Johnson	Administrator
Suburb Pet Sanctuary	87654321	Jane Smith	Animal Care Technician

2. During aggregation with having query execution (find roles with only one worker)

Find the roles that only have one worker working in them.

Aggregation with having

Display

3. Result of aggregation with having query

Aggregation result:

Role

Administrator

Veterinarian

Animal Care Technician

Receptionist

Line numbers of where SQL queries appear in code:

430: Update Query
452: Delete Query
511: Projection Query
545: Selection Query
607: Insert query
624: Join query
639: Nested Aggregation With Group By Query
680: Aggregation With Group By Query
704: Aggregation With Having Query
730: Division query Query