University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: ___4_____

Date: ___Nov 27_____

Group Number: ____96_____

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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

- A link to the group's repository:

  https://github.students.cs.ubc.ca/CPSC304-2023W-T1/project_n1b3b_r5r4l_u9h1b

- SQL script:
  - See shelter.sql in the project repository
- A short description of the final project, and what it accomplished.
  - For this project, our team designed an animal shelter adoptions web application. Users are able to see animals up for adoption, apply for adoption, and update existing application information. Additionally the application contains information about the shelter's events and displays information about its donors.
- A description of how your final schema differed from the schema you turned in
  i. If the final schema differed, explain why. Note that turning in a final schema that's different from what you planned is fine, we just want to know what changed and why.
  - Changed attribute names in schema that were reserved keywords to prevent errors when the script was run
  - Changed use of " to ' to prevent errors when the script was run
  - Added 4 more tuples in Attends table to allow enable meaningful results for the division query
    - INSERT INTO Attends (donorID, attendsLocation, attendsDate, title) VALUES ('5', 'Stanley Park', TO_DATE('2023-07-15', 'YYYY-MM-DD'), 'PetPalooza');
    - INSERT INTO Attends (donorID, attendsLocation, attendsDate, title) VALUES ('5', 'Olympic Oval', TO_DATE('2022-05-15', 'YYYY-MM-DD'), 'Strut for Strays 5K');
    - INSERT INTO Attends (donorID, attendsLocation, attendsDate, title) VALUES ('5', 'Vancouver Art Gallery', TO_DATE('2025-09-15', 'YYYY-MM-DD'), 'Paws and Painting Night');
    - INSERT INTO Attends (donorID, attendsLocation, attendsDate, title) VALUES ('5', 'Queen Elizabeth Park', TO_DATE('2022-10-31', 'YYYY-MM-DD'), 'Barktoberfest');
  - Events table
    - changed 'location' to eventLocation
    - changed 'date' to eventDate
    - changed 'type' to eventType
  - Shelter table
    - changed 'address' to shelterAddress
  - InventoryHolds table
    - changed 'type' to invType
    - Removed ON UPDATE CASCADE

- Volunteer table
  - changed 'hours' to volunteerHours
  - Removed ON UPDATE CASCADE
- Employee table
  - Removed ON UPDATE CASCADE
- AnimalAdmits table
  - changed 'name' to animalName
  - changed 'date' to dateAdmit
  - Removed ON UPDATE CASCADE
- Vaccination table
  - changed 'type' to vacType
  - changed 'date' to vacDate
  - Removed ON UPDATE CASCADE
- Attends table
  - changed 'location' to attendsLocation
  - changed 'date' to attendsDate
  - Removed ON UPDATE CASCADE
- Donates table
  - changed 'date' to donationDate
  - Removed ON UPDATE CASCADE
- Plans table
  - changed 'location' to plansLocation
  - changed 'date' to plansDate
  - Removed ON UPDATE CASCADE
- Employs table
  - Removed ON UPDATE CASCADE
- Applies table
  - changed 'status' to applicationStatus
  - changed 'date' to applicationDate
  - Removed ON UPDATE CASCADE

- A copy of the schema and screenshots that show what data is present in each relation after the SQL script from item #2 is run.

  Do not use DDL statements for this deliverable. List the relational schemas with the primary key attributes underlined and foreign keys bolded. For example, Student(sid, name, dob).

  You can complete this deliverable with screenshots from SQL Plus or create a representation of your relational instances through a spreadsheet program. No matter what you use, be sure to clearly label which relation a given instance refers to.

  - Donor(donorID, lastName, firstName)
  - Shelter(branchID, phoneNum, shelterAddress)
  - InventoryHolds(invID, **branchID**, quantity, invType)
  - Staff (staffID, lastName, firstName, startDate, phoneNum)
  - Volunteer(**staffID**, volunteerHours)
  - Events (eventLocation, eventDate,title,eventType)
  - SalaryRanges(position, salary)
  - Employee(**staffID**, **position**)
  - AnimalInfo (breed, species)
  - AnimalAdmits (animalID, **breed,** animalName, age, dateAdmit, **branchID**)
  - Vaccination (vacType,vacDate,**animalID**)
  - Adopters(adopterID, lastName, firstName, phoneNum)
  - Attends (**donorID, attendsLocation, attendsDate, title**)
  - Donates (**donorID, branchID,** donationDate, amount)
  - Plans (**plansLocation, plansDate, title, branchID**)
  - Employs(**staffID,branchID,**contractID)
  - Applies(**branchID, adopterID, animalID**, applicationStatus, applicationDate)

- A list of all SQL queries used and where it can be found in the code (i.e., file name and line number(s)). For SQL query requirements, check the rubric listed on Canvas for Milestone 4.

INSERT

INSERT INTO Applies(branchID, adopterID, animalID, applicationStatus, applicationDate)
  VALUES(:branchID, :adopterID, :animalID, :applicationStatus,
TO_DATE(:applicationDate, 'YYYY-MM-DD'))
Location: appService.js: line 177

DELETE

DELETE FROM Adopters
  WHERE adopterID = :adopterID
Location: appService.js line: 386

UPDATE
UPDATE Shelter
  SET phoneNum = :phoneNum,
  shelterAddress = :shelterAddress
  WHERE branchID = :branchID
Location: appService.js: line 356

SELECTION
"SELECT * FROM Events " + whereQuery

Location: appService.js: line 118

PROJECTION
SELECT ${selectAttributes} FROM ${table_name};

Location: appService.js: line 92

JOIN
SELECT a.animalID, a.animalName, a.age, i.species, a.breed, a.branchID FROM AnimalInfo i,

AnimalAdmits a WHERE i.breed = a.breed
Location: appService.js: line 65

AGGREGATION WITH GROUP BY
SELECT a.animalID, COUNT(v.animalID) AS vaccination_count FROM AnimalInfo i,
AnimalAdmits a, Vaccination v WHERE i.breed = a.breed AND a.animalID = v.animalID GROUP
BY a.animalID;
Location: appService.js: line 106

AGGREGATION WITH HAVING

Location: appService.js: line 155

SELECT donorID, SUM(amount) AS total_donation
FROM Donates
GROUP BY donorID
HAVING SUM(amount) > 1000
ORDER BY total_donation DESC

NESTED AGGREGATION WITH GROUP BY

Location: appService.js: line 55

SELECT AA.breed, COUNT(AA.animalID)
FROM AnimalAdmits AA
WHERE
    AA.animalID NOT IN (SELECT AP.animalID
                        FROM Applies AP
                        WHERE AP.applicationStatus = 'Accepted')
GROUP BY AA.breed;

DIVISION

Location: appService.js: line 167

SELECT D.donorID
FROM Donor D
WHERE NOT EXISTS (SELECT E.eventLocation, E.eventDate, E.title
                 FROM Events E
                 WHERE NOT EXISTS (SELECT A.donorID
                                   FROM Attends A
                                   WHERE A.donorID = D.donorID AND
                          A.attendsLocation = E.eventLocation AND
                          A.attendsDate = E.eventDate AND A.title = E.title))

- Screenshots demonstrating the functionality of each query using the GUI. We want to see a before/during/after progression of events. For example, the before screenshot would be what data is in the table before you run the query, the during screenshot(s) is how the query is triggered using the GUI, and the after screenshot is what data is in your table afterwards. Please label each set of screenshots with the name of the query it is meant to address (e.g., "Insert Operation").
- **During screenshots were omitted for queries which only required pressing a button, as this is not possible to show statically.
  - INSERT:
    - BEFORE: AFTER

Applications

branchID	adopterID	animalID	applicationStatus	applicationDate
12345678	100	1	Pending	2021-11-12T08:00:00.000Z
12345678	101	1	Rejected	2020-05-31T08:00:00.000Z
12345678	102	1	Rejected	2022-10-31T08:00:00.000Z
12345678	103	1	Pending	2021-10-31T08:00:00.000Z
12345678	104	1	Accepted	2020-09-30T08:00:00.000Z

Applications

branchID	adopterID	animalID	applicationStatus	applicationDate
12345678	100	1	Pending	2021-11-12T08:00:00.000Z
12345678	100	2	Pending	2023-11-28T08:00:00.000Z
12345678	101	1	Rejected	2020-05-31T08:00:00.000Z
12345678	102	1	Rejected	2022-10-31T08:00:00.000Z
12345678	103	1	Pending	2021-10-31T08:00:00.000Z
12345678	104	1	Accepted	2020-09-30T08:00:00.000Z

○ DELETE
■ BEFORE: AFTER:

Adopters

adopterID	lastName	firstName	phoneNum
102	Adams	Gerald	6043121113
103	Lillard	Leslie	6043121114
104	Rapport	Rita	6043121115

Remove Adopters

adopterID:

Enter adopterID

update

Applications

branchID	adopterID	animalID	applicationStatus	applicationDate
12345678	102	1	Rejected	2022-10-31T08:00:00.000Z
12345678	103	1	Pending	2021-10-31T08:00:00.000Z
12345678	104	1	Accepted	2020-09-30T08:00:00.000Z

Adopters

adopterID	lastName	firstName	phoneNum
103	Lillard	Leslie	6043121114
104	Rapport	Rita	6043121115

Remove Adopters

adopterID:

102

update
Adopter deleted successfully!

Applications

branchID	adopterID	animalID	applicationStatus	applicationDate
12345678	103	1	Pending	2021-10-31T08:00:00.000Z
12345678	104	1	Accepted	2020-09-30T08:00:00.000Z

○ UPDATE

● BEFORE: AFTER:

Animal Shelters

branchID	phoneNum	shelterAddress
12345678	6043280001	123 west 10th avenue, Vancouver, BC V5Z1C9
12345679	7781230034	123 west 11th avenue, Vancouver, BC V6E9TS
12345680	7781230035	123 west 12th avenue, Vancouver, BC V6E9TS
12345681	7781230036	123 west 13th avenue, Vancouver, BC V6E9TS
12345682	7781230037	123 west 14th avenue, Vancouver, BC V6E9TS

Update Shelters

branchID:

Enter branchID

phoneNum:

Enter phoneNum

shelterAddress:

Enter shelterAddress

update

Animal Shelters

branchID	phoneNum	shelterAddress
12345678	0000000000	123 west 10th avenue, Vancouver, BC V0V0V0
12345679	7781230034	123 west 11th avenue, Vancouver, BC V6E9TS
12345680	7781230035	123 west 12th avenue, Vancouver, BC V6E9TS
12345681	7781230036	123 west 13th avenue, Vancouver, BC V6E9TS
12345682	7781230037	123 west 14th avenue, Vancouver, BC V6E9TS

Update Shelters

branchID:

12345678

phoneNum:

0000000000

shelterAddress:

123 west 10th avenue, Vancouver, BC V0V0V0

update
Shelter updated successfully!

○ SELECTION

■ BEFORE:

Selection Table

Data filters (eventDate format: yyyy-mm-dd)

[eventLocation ▼] [Equals ▼]

| Stanley Park |

[or ▼]

[eventType ▼] [Equals ▼]

| Fundraising |

[and ▼]

[Add Filter] [Apply Filters] ←

■ AFTER:

Selection Table

Data filters (eventDate format: yyyy-mm-dd)

[eventLocation ▼] [Equals ▼]

| Stanley Park |

[or ▼]

[eventType ▼] [Equals ▼]

| Fundraising |

[and ▼]

[Add Filter] [Apply Filters]

eventLocation	eventDate	title	eventType
Stanley Park	2023-07-15T08:00:00.000Z	PetPalooza	Education
Olympic Oval	2022-05-15T08:00:00.000Z	Strut for Strays 5K	Fundraising
Vancouver Art Gallery	2025-09-15T08:00:00.000Z	Paws and Painting Night	Fundraising
Queen Elizabeth Park	2022-10-31T08:00:00.000Z	Barktoberfest	Fundraising

○ PROJECTION

■ BEFORE:

Projection Table

Select Table: [Donor ▼] Select Attribute: [Display ProjectionTable]

■ DURING:

Projection Table

Select Table: [Shelter ▼] Select Attribute: [branchID / phoneNum / shelterAddress] [Display ProjectionTable]

■ AFTER:

Projection Table

Select Table: [Shelter ▼] Select Attribute: [branchID / phoneNum / shelterAddress] [Display ProjectionTable]

branchID	phoneNum	shelterAddress
12345678	7781230033	123 west 10th avenue, Vancouver, BC V6E9TS
12345679	7781230034	123 west 11th avenue, Vancouver, BC V6E9TS
12345680	7781230035	123 west 12th avenue, Vancouver, BC V6E9TS
12345681	7781230036	123 west 13th avenue, Vancouver, BC V6E9TS
12345682	7781230037	123 west 14th avenue, Vancouver, BC V6E9TS

○ <u>JOIN (The Archive of all Animals includes both join of AnimalInfo and AnimalAdmits and GroupBy of animals and count of vaccinations)</u>

■ BEFORE:

Archive of all Animals

animalID	animalName	age	species	breed	branchID	# of vaccinations
2	Biscuit	5	Cat	Cat	12345678	2
1	Mochi	2	Dog	Dog	12345678	3
5	Sasha	12	Dog	French Bulldog	12345678	0
3	Rex	0	Dog	German Shepherd	12345678	0
4	Biscuit	2	Cat	Siamese Cat	12345678	0

■ AFTER:

Archive of all Animals

animalID	animalName	age	species	breed	branchID	# of vaccinations
2	Biscuit	5	Cat	Cat	12345678	2
1	Mochi	2	Dog	Dog	12345678	3
5	Sasha	12	Dog	French Bulldog	12345678	0
3	Rex	0	Dog	German Shepherd	12345678	0
4	Biscuit	2	Cat	Siamese Cat	12345678	0

- ■
  - ○ AGGREGATION WITH GROUP BY (The Archive of all Animals includes both join of AnimalInfo and AnimalAdmits and GroupBy of animals and count of vaccinations)
    - ■ BEFORE

Archive of all Animals

animalID	animalName	age	species	breed	branchID	# of vaccinations
2	Biscuit	5	Cat	Cat	12345678	2
1	Mochi	2	Dog	Dog	12345678	3
5	Sasha	12	Dog	French Bulldog	12345678	0
3	Rex	0	Dog	German Shepherd	12345678	0
4	Biscuit	2	Cat	Siamese Cat	12345678	0

:

    - ■ AFTER:

Archive of all Animals

animalID	animalName	age	species	breed	branchID	# of vaccinations
2	Biscuit	5	Cat	Cat	12345678	2
1	Mochi	2	Dog	Dog	12345678	3
5	Sasha	12	Dog	French Bulldog	12345678	0
3	Rex	0	Dog	German Shepherd	12345678	0
4	Biscuit	2	Cat	Siamese Cat	12345678	0

  - ○ AGGREGATION WITH HAVING

■ BEFORE:

Gold Donors

Click to Display

donorID	totalAmount

■ DURING:

Gold Donors   click

Click to Display

donorID	totalAmount

■ AFTER:

Gold Donors

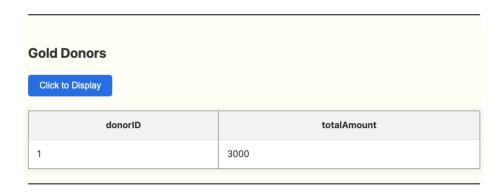Click to Display

donorID	totalAmount
1	3000

○ NESTED AGGREGATION WITH GROUP BY
■ BEFORE:

Count Of Available Animals By Each Breed

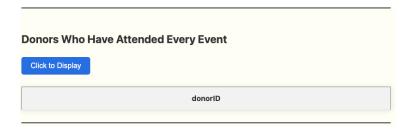**Note: Breed = Species if breed is unknown**

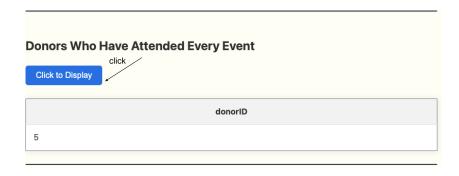Click to display updated count of available animals by each breed

breed	count

- ■ DURING:

Count Of Available Animals By Each Breed

Note: Breed = Species if breed is unknown

click

Click to display updated count of available animals by each breed

breed	count

- ■ AFTER:

Count Of Available Animals By Each Breed

Note: Breed = Species if breed is unknown

Click to display updated count of available animals by each breed

breed	count
French Bulldog	1
German Shepherd	1
Cat	1
Siamese Cat	1

- ○ <u>DIVISION</u>

- ■ **BEFORE:**

  Donors Who Have Attended Every Event

  [Click to Display]

donorID

- ■ **DURING:**

  Donors Who Have Attended Every Event

  click

  [Click to Display]

donorID
5

- ■ **AFTER:**

  Donors Who Have Attended Every Event

  [Click to Display]

donorID
5

Donor(donorID, lastName, firstName)

DONORID
LASTNAME
FIRSTNAME
1
John
Smith
2
James
Smith
3
Anna
Lee
4
James
Monroe
5
John
Smith

Shelter(branchID, phoneNum, shelterAddress)

BRANCHID	PHONENUM
SHELTERADDRESS	
12345678	7781230033
123 west 10th avenue, Vancouver, BC V6E9TS	
12345679	7781230034
123 west 11th avenue, Vancouver, BC V6E9TS	
12345680	7781230035
123 west 12th avenue, Vancouver, BC V6E9TS	
12345681	7781230036
123 west 13th avenue, Vancouver, BC V6E9TS	
12345682	7781230037
123 west 14th avenue, Vancouver, BC V6E9TS	

InventoryHolds(invID, branchID, quantity, invType)

INVID	BRANCHID	QUANTITY
INVTYPE		
11111111	12345678	12
syringe		
11111112	12345678	1
comb		
11111113	12345678	22
collars		
11111114	12345678	12
flea medicine		
11111115	12345678	3
cat treats		

Staff (staffID, lastName, firstName, startDate, phoneNum)

STAFFID
LASTNAME
FIRSTNAME
STARTDATE PHONENUM
0
Johnson
Emily
23-OCT-15 7783751826
1
Martinez
David
23-OCT-99 2504338590
2
Anderson
Sarah
25-JAN-09 6042973456
3
Wilson
Michael
01-DEC-21 6041234567
4
Davis
Olivia
01-JUL-21 6040001234
5
Taylor
Sophia
01-AUG-21 6047893456
6
Brown
Ethan
01-SEP-21 7784560192
7
Miller
Ava
01-OCT-21 7782950146
8
Clark
James
01-NOV-21 2507182934
9
Hernandez
Mia
01-DEC-21 6046782048

Volunteer(staffID, volunteerHours)

STAFFID	VOLUNTEERHOURS
00000000	10
00000001	5
00000002	32
00000003	400
00000004	111

Events (eventLocation, eventDate, title, eventType)

EVENTLOCATION	EVENTDATE	TITLE	EVENTTYPE
Stanley Park	15-Jul-23	PetPalooza	Education
New Brighton Park	04-Mar-21	Furry Friends Fair	Adoption
Olympic Oval	15-May-22	Strut for Strays 5K	Fundraising
Vancouver Art Gallery	15-Sep-25	Paws and Painting Night	Fundraising
Queen Elizabeth Park	31-Oct-22	Barktoberfest	Fundraising

SalaryRanges(position: varchar[200], salary: integer)

POSITION	SALARY
Administrative Assistant	50000
Veterinarian	90000
Social Media Administrator	60000
Cleaning Assistant	55000
CEO	120000

Employee(staffID: varchar[8], position: varchar[200])

STAFFID	POSITION
5	Administrative Assistant
6	Veterinarian
7	Social Media Administrator
8	Cleaning Assistant
9	CEO

AnimalInfo (breed, species)

BREED	SPECIES
Dog	Dog
Cat	Cat
German Shepherd	Dog
Siamese Cat	Cat
French Bulldog	Dog

AnimalAdmits (animalID, breed, animalName, age, dateAdmit, branchID)

ANIMALID	ANIMALNAME	BREED	AGE	DATEADMIT	BRANCHID
1	Mochi	Dog	2	30-APR-22	12345678
2	Biscuit	Cat	5	31-MAY-22	12345678
3	Rex	German Shepherd	0	30-JUN-22	12345678
4	Biscuit	Siamese Cat	2	31-JUL-22	12345678
5	Sasha	French Bulldog	12	31-AUG-22	12345678

Vaccination (vacType, vacDate, animalID)

VACTYPE	VACDATE	ANIMALID
Flu	02-OCT-22	2
Rabies	01-OCT-22	1
Rabies	03-OCT-22	1
Rabies	04-OCT-22	1
Rabies	05-OCT-22	2

Applies (branchID, adopterID, animalID)

BRANCHID	ADOPTERID	ANIMALI	APPLICATIONSTATUS	APPLICATIONDATE
12345678	100	1	Pending	12-Nov-21
12345678	101	1	Rejected	31-May-20
12345678	102	1	Rejected	31-Oct-22
12345678	103	1	Pending	31-Oct-21
12345678	104	1	Accepted	30-Sep-20

Employs (staffID, branchID, contractID)

STAFFID	BRANCHID	CONTRACT
00000000	12345678	1
00000001	12345678	2
00000002	12345678	3
00000003	12345678	4
00000004	12345679	5
00000005	12345679	6
00000006	12345679	7
00000007	12345678	8
00000008	12345679	9
00000009	12345678	10

Plans(plansLocation, plansDate, title, branchID)

PLANSLOCATION / TITLE	PLANSDATE	BRANCHID
New Brighton Park	04-Mar-21	
Furry Friends Fair		12345679
Olympic Oval	15-May-22	
Strut for Strays 5K		12345678
Queen Elizabeth Park	31-Oct-22	
Barktoberfest		12345680
Stanley Park	15-Jul-23	
PetPalooza		12345678
Vancouver Art Gallery	15-Sep-25	
Paws and Painting Night		12345679

Donates(donorID, branchID, donationDate, amount)

DONORID	BRANCHID	DONATIONID	AMO
1	12345678	12-JUL-08	3000
2	12345679	01-OCT-21	100
3	12345680	20-SEP-00	500
4	12345681	08-NOV-20	50
5	12345682	14-FEB-22	888.88

Attends(DonorID, attendsLocation, attendsDate, title)

DONORID	ATTENDSLOCATION	ATTENDSDA	TITLE
1	New Brighton Park	04-Mar-21	Furry Friends Fair
2	New Brighton Park	04-Mar-21	Furry Friends Fair
3	New Brighton Park	04-Mar-21	Furry Friends Fair
4	New Brighton Park	04-Mar-21	Furry Friends Fair
5	New Brighton Park	04-Mar-21	Furry Friends Fair
5	Olympic Oval	15-May-22	Strut for Strays 5K
5	Queen Elizabeth Park	31-Oct-22	Barktoberfest
5	Stanley Park	15-Jul-23	PetPalooza
5	Vancouver Art Gallery	15-Sep-25	Paws and Painting Night

`Adopters(adopterID, lastName, firstName, phoneNum)`

```
ADOPTERID
--------
LASTNAME
----------------------------------------------------------------------
FIRSTNAME
----------------------------------------------------------------------
PHONENUM
---------
100
Smith
John
6043121111

101
Smythe
Jon
6043121112

102
Adams
Gerald
6043121113

103
Lillard
Leslie
6043121114

104
Rapport
Rita
6043121115
```