

CPSC 304 Project Cover Page

Milestone #: 2

Date: 21th July, 2024

Group Number: 19

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Aiden Kerr	68566637	i6w2b	aiden.k2000@hotmail.com
Cindy Cui	26111997	v7j7n	misscindycui@gmail.com
Joel Bonnie	22643886	p9q8i	joelbcasp@gmail.com

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

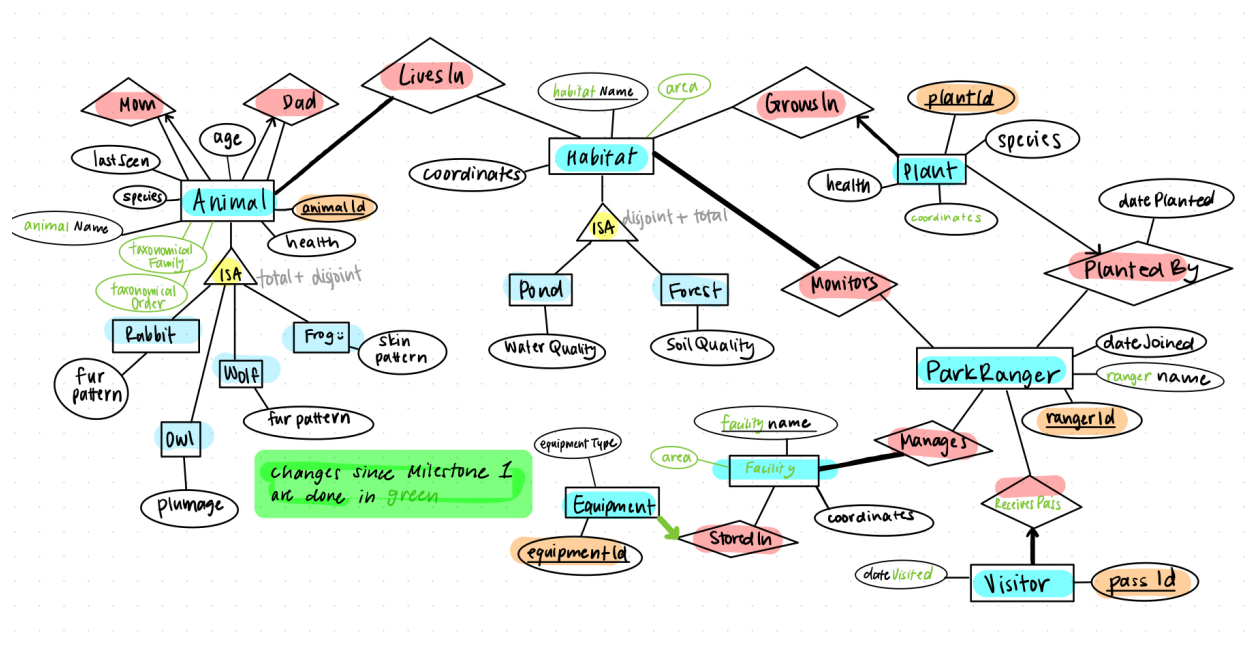
Milestone 2

➤ Class	<u>CPSC 304</u>
---------	-----------------

Project Summary

Our project is an Ecosystem Management program used by national park managers/rangers to keep track of the flora/fauna in their park. Rangers can log specific animals into the database, model their familial relationships, identify them + their traits, and track their health. Rangers can use this database to log plants, record park equipment, track habitat health, and more.

Updated ER Diagram



Schema

- PKs are underlined

- FKs are bolded
- no candidate keys are present
 - Note: Animal name is not candidate key despite being unique because many animals will not be named.

Animal(animalId: INT, health: CHAR(30), age: INT, animalName: CHAR(30) UNIQUE, species: CHAR(30), lastSeen: DATE, taxonomicalOrder: CHAR(30), taxonomicalFamily: CHAR(30))

Rabbit(**animalId**: INT, furPattern: CHAR(30))

Owl(**animalId**: INT, plumage: CHAR(30))

Wolf(**animalId**: INT, furPattern: CHAR(30))

Frog(**animalId**: INT, skinPattern: CHAR(30))

Mom(**animalId_mom**: INT, **animalId_child**: INT)

Dad(**animalId_dad**: INT, **animalId_child**: INT)

LivesIn(animalId: INT, **habitatName**: CHAR(30))

Habitat(habitatName: CHAR(30), coordinates: CHAR(30), area: CHAR(30))

Pond(**habitatName**: CHAR(30), waterQuality: CHAR(30))

Forest(**habitatName**: CHAR(30), soilQuality: CHAR(30))

Plant(plantId: INT, species: CHAR(30), coordinate: CHAR(30), health: CHAR(30), **habitatName**: CHAR(30) NOT NULL)

PlantedBy(plantId: INT, **rangerId**: INT, datePlanted: DATE)

Monitors(**habitatName**: CHAR(30), **rangerId**: INT)

ParkRanger(rangerId: INT, rangerName: CHAR(30), dateJoined: DATE)

Manages(rangerId: INT, facilityName: CHAR(30))

Facility(facilityName: CHAR(30), coordinates: CHAR(30), area: CHAR(30))

Equipment(equipmentId: INT, equipmentType: CHAR(30), **facilityName**: CHAR(30))

Visitor(passId: INT, dateVisited: DATE, **rangerId**: NOT NULL)

Functional Dependencies

equipmentId → facilityName, Facility.coordinates

passId → rangerId, ParkRanger.name, ParkRanger.dateJoined

plantId → habitatName, Habitat.coordinates

Habitat.coordinates → area

Facility.coordinates → area

species → taxonomicFamily

taxonomicFamily → taxonomicOrder

Normalization to 3NF

Rewrite our FDs:

E → FN, FC, T (equipmentId → facilityName, Facility.coordinates, equipmentType)

R → RN, DJ (rangerId → ParkRanger.name, ParkRanger.dateJoined)

PI → R, DV (passId → rangerId, Visitor.dateVisited)

P → HN, HC, PS, PH, PC (plantId → habitatName, Habitat.coordinates, Plant.species, Plant.health, Plant.coordinates)

HN → HC, HA (Habitat.Name → Habitat.coordinates, Habitat.area)

FN → FC (Facility.Name → Facility.coordinates)

HC → HA (Habitat.coordinates → Habitat.area)

FC → FA (Facility.coordinates → Facility.area)

AI → AH, AA, AN, AS, LS, F, O (animalId → Animal.health, age, animalName, Animal.species, lastSeen, taxonomicFamily, taxonomicOrder)

AS → F (Animal.species → taxonomicFamily)

F → O (taxonomicFamily → taxonomicOrder)

Rewrite relevant relations:

Equipment(T, E) (Equipment(equipmentType, equipmentId))

ParkRanger(RI, RN, DJ) (ParkRanger(rangerId, rangerName, dateJoined))

Visitor(PI, DV, R) (Visitor(passId, dateVisited, rangerId))

Facility(FN, FC) (Facility(facilityName, coordinates))

Habitat(HN, HC) (Habitat(habitatName, coordinates))

Plant(P, PS, PC, PH, HN) (Plant(plantId, species, coordinates, health, habitatName))

Animal(AI, AH, AA, AN, AS, LS, F, O) (Animal(animalId, health, age, name, species, lastSeen, taxonomicalFamily, taxonomicalOrder))

Decompose to 3NF

1. Find minimal keys

a. Equipment:

i. $E^+ = \{E, FN, FC, T\}$. E is a superkey, so Equipment is in 3NF.

b. ParkRanger:

i. $R^+ = \{RI, RN, DJ\}$. R is a superkey, so ParkRanger is in 3NF.

c. Visitor:

i. $PI^+ = \{PI, R, DV\}$. PI is a superkey, so Visitor is in 3NF.

d. Facility

i. $FN^+ = \{FN, FC\}$

ii. $FC^+ = \{FC, FA\}$

iii. Neither FN nor FC are superkeys, so Facility is not in 3NF.

iv. Facility's minimal key is (FN, FC)

e. Habitat

i. $HN^+ = \{HN, HC, HA\}$

ii. $HC^+ = \{HA\}$

iii. HN is a superkey, but HC is not, and HA is not part of a minimal key, so Habitat is not in 3NF.

iv. Habitat's minimal key is (HN)

f. Plant

i. $P^+ = \{P, HN, HC, PS, PH, PC, HA\}$. P is a superkey, so Plant is in 3NF

g. Animal

- i. $AI^+ = \{AI, AH, AA, AN, AS, LS, F, O\}$
- ii. $AS^+ = \{AS, F, O\}$
- iii. $F^+ = \{F, O\}$
- iv. AI is a superkey, but AS and F are not, and neither of them are part of a minimal key, so Animal is not in 3NF.
- v. Animal's minimal key is (AI)

2. Reduce each relation violating 3NF

a. Facility

- i. The relevant FDs are: $FN \rightarrow FC$ and $FC \rightarrow HA$. These FDs are already a minimal cover.
- ii. Add new relations to the decomposition of Facility:
 - 1. Facility1(FN, **FC**) \rightarrow contains the minimal key
 - 2. Facility2(FC, HA)

b. Habitat

- i. The relevant FDs are: $HN \rightarrow HC$, HA and $HC \rightarrow HA$. Find the minimal cover:
 - 1. $HN \rightarrow HC$
 - 2. ~~$HN \rightarrow HA$~~ \rightarrow remove because redundant
 - 3. $HC \rightarrow HA$
- ii. Add new relations to the decomposition of Habitat based on the new minimal cover:
 - 1. Habitat1(HN, **HC**)
 - 2. Habitat2(HC, HA)

c. Animal

- i. The relevant FDs we are examining are
 - 1. $AI \rightarrow AH, AA, AN, AS, LS, AS, F, O$

2. $AS \rightarrow F$

3. $F \rightarrow O$

ii. Finding the minimal cover, this gives us:

1. $AI \rightarrow AH$

2. $AI \rightarrow AA$

3. $AI \rightarrow AN$

4. $AI \rightarrow AS$

5. $AI \rightarrow LS$

6. ~~$AI \rightarrow F$~~ \rightarrow remove because redundant

7. ~~$AI \rightarrow O$~~ \rightarrow remove because redundant

8. $AS \rightarrow F$

9. $F \rightarrow O$

iii. Add new relations to the decomposition of Habitat based on the new minimal cover:

1. Animal1(AI, AH, AA, AN, **AS**, LS)

2. Species(AS, **F**)

3. Family(F, O)

4. Animal1 contains the original minimal key, so no additional tables are needed.

d. Final new tables

i. Facility1 becomes Facility

ii. Habitat1 becomes Habitat

iii. Facility2 and Habitat2 actually share the same info, so they will become one table called Area

iv. Animal1 becomes animal

v. Species, Family, remain as specified above

e. Therefore, our final collection of tables is (changes are highlighted in blue)

Animal(animalId: INT, health: CHAR(30), age: INT, animalName: CHAR(30)
UNIQUE, **speciesName**: CHAR(30), lastSeen: DATE)

Species(speciesName: CHAR(30), **taxonomicalFamily**: CHAR(30))

Family(taxonomicalFamily: CHAR(30), taxonomicalOrder: CHAR(30))

Rabbit(**animalId**: INT, furPattern: CHAR(30))

Owl(**animalId**: INT, plumage: CHAR(30))

Wolf(**animalId**: INT, furPattern: CHAR(30))

Frog(**animalId**: INT, skinPattern: CHAR(30))

Mom(**animalId_mom**: INT, **animalId_child**: INT)

Dad(**animalId_dad**: INT, **animalId_child**: INT)

LivesIn(**animalId**: INT, **habitatName**: CHAR(30))

Habitat(**habitatName**: CHAR(30), **coordinates**: CHAR(30))

Pond(**habitatName**: CHAR(30), waterQuality: CHAR(30))

Forest(**habitatName**: CHAR(30), soilQuality: CHAR(30))

Plant(plantId: INT, species: CHAR(30), coordinates: CHAR(30), health:
CHAR(30), **habitatName**: CHAR(30) NOT NULL)

PlantedBy(**plantId**: INT, **rangerId**: INT, datePlanted: DATE)

Monitors(**habitatName**: CHAR(30), **rangerId**: INT)

ParkRanger(rangerId: INT, rangerName: CHAR(30), dateJoined: DATE)

Manages(rangerId: INT, facilityName: CHAR(50))

Facility(facilityName: CHAR(50), **coordinates**: CHAR(30))

Equipment(equipmentId: INT, equipmentType: CHAR(50), **facilityName**: CHAR(50))

Visitor(passId: INT, dateVisited: DATE, **rangerId**: INT NOT NULL)

Area(coordinates: CHAR(30), areaName: CHAR(30))

DDL Statements

```
CREATE TABLE Animal (  
    animalId INT PRIMARY KEY,  
    health CHAR(30),  
    age INT,  
    animalName CHAR(30) UNIQUE,  
    speciesName CHAR(30),  
    lastSeen DATE,  
    FOREIGN KEY (speciesName) REFERENCES Species(speciesName)  
);  
  
CREATE TABLE Species(  
    speciesName CHAR(30) PRIMARY KEY,  
    taxonomicalFamily CHAR(30),  
    FOREIGN KEY (taxonomicalFamily) REFERENCES Family(taxonomicalFamily)
```

```

);

CREATE TABLE Family(
    taxonomicalFamily CHAR(30) PRIMARY KEY,
    taxonomicalOrder CHAR(30)
);

CREATE TABLE Rabbit (
    animalId INT PRIMARY KEY,
    furPattern CHAR(30),
    FOREIGN KEY(animalId) REFERENCES Animal(animalId)
        ON DELETE CASCADE
);

CREATE TABLE Owl (
    animalId INT PRIMARY KEY,
    plumage CHAR(30),
    FOREIGN KEY(animalId) REFERENCES Animal(animalId)
        ON DELETE CASCADE
);

CREATE TABLE Wolf (
    animalId INT PRIMARY KEY,
    furPattern CHAR(30),
    FOREIGN KEY(animalId) REFERENCES Animal(animalId)
        ON DELETE CASCADE
);

CREATE TABLE Frog (
    animalId INT PRIMARY KEY,
    skinPattern CHAR(30),
    FOREIGN KEY(animalId) REFERENCES Animal(animalId)
        ON DELETE CASCADE
);

```

```

CREATE TABLE Mom (
    animalId_Mom INT,
    animalId_Child INT PRIMARY KEY,
    FOREIGN KEY(animalId_Mom) REFERENCES Animal(animalId),
    FOREIGN KEY(animalId_Child) REFERENCES Animal(animalId)
);

CREATE TABLE Dad (
    animalId_Dad INT,
    animalId_Child INT PRIMARY KEY,
    FOREIGN KEY(animalId_Dad) REFERENCES Animal(animalId),
    FOREIGN KEY(animalId_Child) REFERENCES Animal(animalId)
);

CREATE TABLE Habitat (
    habitatName CHAR(30) PRIMARY KEY,
    coordinates CHAR(30),
    FOREIGN KEY (coordinates) REFERENCES Area(coordinates)
);

CREATE TABLE Pond (
    habitatName CHAR(30) PRIMARY KEY,
    waterQuality CHAR(30),
    FOREIGN KEY(habitatName) REFERENCES Habitat(habitatName)
    ON DELETE CASCADE
);

CREATE TABLE Forest (
    habitatName CHAR(30) PRIMARY KEY,
    soilQuality CHAR(30),
    FOREIGN KEY(habitatName) REFERENCES Habitat(habitatName)
    ON DELETE CASCADE
);

```

```
CREATE TABLE LivesIn (
    animalId INT,
    habitatName CHAR(30),
    PRIMARY KEY(animalId, animalId),
    FOREIGN KEY(animalId) REFERENCES Animal(animalId)
        ON DELETE CASCADE,
    FOREIGN KEY(habitatName) REFERENCES Habitat(habitatName)
        ON DELETE CASCADE
);
```

```
CREATE TABLE Plant (
    plantId INT PRIMARY KEY,
    species CHAR(30),
    coordinates CHAR(30),
    health CHAR(30),
    habitatName CHAR(30) NOT NULL,
    FOREIGN KEY(habitatName) REFERENCES Habitat(habitatName)
        ON DELETE CASCADE
);
```

```
CREATE TABLE PlantedBy (
    plantId INT PRIMARY KEY,
    rangerId INT,
    datePlanted DATE,
    FOREIGN KEY(plantId) REFERENCES Plant(plantId)
        ON DELETE SET NULL,
    FOREIGN KEY(rangerId) REFERENCES ParkRanger(rangerId)
        ON DELETE SET NULL
);
```

```
CREATE TABLE Monitors (
    habitatName CHAR(30),
    rangerId INT,
    PRIMARY KEY(habitatName, rangerId)
    FOREIGN KEY(rangerId) REFERENCES ParkRanger(rangerId)
```

```

        ON DELETE CASCADE,
        FOREIGN KEY(habitatName) REFERENCES Habitat(habitatName)
        ON DELETE CASCADE
    );

CREATE TABLE ParkRanger (
    rangerId INT PRIMARY KEY,
    rangerName CHAR(30)
    dateJoined DATE
);

CREATE TABLE Manages (
    rangerId INT,
    facilityName CHAR(50),
    PRIMARY KEY(rangerId, facilityName)
    FOREIGN KEY(rangerId) REFERENCES ParkRanger(rangerId)
        ON DELETE CASCADE,
    FOREIGN KEY(facilityName) REFERENCES Facility(facilityName)
        ON DELETE CASCADE
);

CREATE TABLE Facility (
    facilityName CHAR(50) PRIMARY KEY,
    coordinates CHAR(30)
    FOREIGN KEY(coordinates) REFERENCES Area(coordinates),
);

CREATE TABLE Equipment (
    equipmentId INT PRIMARY KEY,
    equipmentType CHAR(50),
    facilityName CHAR(50),
    FOREIGN KEY(facilityName) references Facility(facilityName)
);

CREATE TABLE Visitor (
    passId INT PRIMARY KEY,

```

```

        dateVisited DATE,
        rangerId INT NOT NULL,
        FOREIGN KEY(rangerId) references ParkRanger(rangerId)
    );

CREATE TABLE Area (
    coordinates CHAR(30) PRIMARY KEY,
    areaName CHAR(30),
);

```

Insert Statements

Animal

```

INSERT INTO Animal VALUES (1, 'good', 2, 'Violet', 'European Rabbit', '2017-01-01');
INSERT INTO Animal VALUES (2, 'unknown', 1, NULL, 'European Rabbit', '2017-01-01');
INSERT INTO Animal VALUES (3, 'poor', 2, 'Tinny', 'Cottontail Rabbit', '2017-01-01');
INSERT INTO Animal VALUES (4, 'good', 4, NULL, 'Cottontail Rabbit', '2017-01-01');
INSERT INTO Animal VALUES (5, 'poor', 9, NULL, 'Cottontail Rabbit', '2017-01-01');

INSERT INTO Animal VALUES (6, 'excellent', 3, 'Kip', 'British Columbian Wolf', '2017-01-01');
INSERT INTO Animal VALUES (7, 'good', 2, NULL, 'Coastal Wolf', '2017-01-01');
INSERT INTO Animal VALUES (8, 'mid', 8, 'Wolfie', 'Red Wolf', '2017-01-01');
INSERT INTO Animal VALUES (9, 'poor', 12, NULL, 'British Columbian Wolf', '2017-01-01');
INSERT INTO Animal VALUES (10, 'unknown', 3, NULL, 'British Columbian Wolf', '2017-01-01');

INSERT INTO Animal VALUES (11, 'good', 2, 'Whoo', 'Great Horned Owl', '2017-01-01');
INSERT INTO Animal VALUES (12, 'unknown', 2, NULL, 'Barn Owl', '2017-01-01');
INSERT INTO Animal VALUES (13, 'poor', 2, NULL, 'Barn Owl', '2017-01-01');
INSERT INTO Animal VALUES (14, 'excellent', 3, NULL, 'Long-eared Owl', '2017-01-01');
INSERT INTO Animal VALUES (15, 'poor', 5, NULL, 'Barn Owl', '2017-01-01');

INSERT INTO Animal VALUES (16, 'poor', 2, 'Rock', 'Common frog', '2017-01-01');

```

```

INSERT INTO Animal VALUES (17, 'poor', 2, 'Woody Jr', 'Wood frog');
INSERT INTO Animal VALUES (18, 'mid', 1, 'Rick', 'Common frog');
INSERT INTO Animal VALUES (19, 'poor', 1, 'Roll', 'Common frog');
INSERT INTO Animal VALUES (20, 'poor', 3, 'Woody', 'Wood frog');

```

Species

```

INSERT INTO Species VALUES ('European Rabbit', 'Leporidae');
INSERT INTO Species VALUES ('Cottontail Rabbit', 'Leporidae');
INSERT INTO Species VALUES ('British Columbia Wolf', 'Canidae');
INSERT INTO Species VALUES ('Coastal Wolf', 'Canidae');
INSERT INTO Species VALUES ('Red Wolf', 'Canidae');
INSERT INTO Species VALUES ('Great Horned Owl', 'Strigidae');
INSERT INTO Species VALUES ('Barn Owl', 'Tytonidae');
INSERT INTO Species VALUES ('Long-eared owl', 'Strigidae');
INSERT INTO Species VALUES ('Common frog', 'Ranidae');
INSERT INTO Species VALUES ('Wood frog', 'Ranidae');

```

Family

```

INSERT INTO Family VALUES ('Leporidae', 'Lagomorpha');
INSERT INTO Family VALUES ('Canidae', 'Carnivora');
INSERT INTO Family VALUES ('Strigidae', 'Strigiformes');
INSERT INTO Family VALUES ('Tytonidae', 'Strigiformes');
INSERT INTO Family VALUES ('Ranidae', 'Anura');

```

Rabbit

```

INSERT INTO Rabbit VALUES (1, NULL);
INSERT INTO Rabbit VALUES (2, 'brown speckled');
INSERT INTO Rabbit VALUES (3, 'solid brown');
INSERT INTO Rabbit VALUES (4, 'grey mottled');
INSERT INTO Rabbit VALUES (5, NULL);

```


Owl

```
INSERT INTO Owl VALUES (11, 'brown speckled');
INSERT INTO Owl VALUES (12, 'white and gray');
INSERT INTO Owl VALUES (13, NULL);
INSERT INTO Owl VALUES (14, 'brown striped');
INSERT INTO Owl VALUES (15, NULL);
```

Wolf

```
INSERT INTO Wolf VALUES (6, 'grey speckled');
INSERT INTO Wolf VALUES (7, 'solid brown');
INSERT INTO Wolf VALUES (8, NULL);
INSERT INTO Wolf VALUES (9, NULL);
INSERT INTO Wolf VALUES (10, 'grey speckled');
```

Frog

```
INSERT INTO Frog VALUES (16, 'solid brown');
INSERT INTO Frog VALUES (17, NULL);
INSERT INTO Frog VALUES (18, 'spotted brown and green');
INSERT INTO Frog VALUES (19, 'brown speckled');
INSERT INTO Frog VALUES (20, NULL);
```

Mom

```
INSERT INTO Mom VALUES (5, 4);
INSERT INTO Mom VALUES (4, 3);
INSERT INTO Mom VALUES (1, 2);

INSERT INTO Mom VALUES (8, 6);
INSERT INTO Mom VALUES (8, 10);
```

Dad

```

INSERT INTO Dad VALUES (15, 13);
INSERT INTO Dad VALUES (15, 12);

INSERT INTO Dad VALUES (20, 17);
INSERT INTO Dad VALUES (16, 18);
INSERT INTO Dad VALUES (16, 19);

```

LivesIn

```

INSERT INTO LivesIn VALUES (1, 'Lakeside Forests');
INSERT INTO LivesIn VALUES (6, 'Lakeside Forests');
INSERT INTO LivesIn VALUES (11, 'Paddlewheel Forests');

INSERT INTO LivesIn VALUES (16, 'Becker Lake');
INSERT INTO LivesIn VALUES (17, 'Paddlewheel Pond');

```

Habitat

```

INSERT INTO Habitat VALUES ('Becker Lake', '49.303974, -123.1408');
INSERT INTO Habitat VALUES ('Paddlewheel Pond', '49.312442, -123.14308');
INSERT INTO Habitat VALUES ('Syilx Lake', '49.312442, -123.14308');
INSERT INTO Habitat VALUES ('Arrow Lake', '49.312442, -123.14308');
INSERT INTO Habitat VALUES ('Ellison Pond', '49.312442, -123.14308');

INSERT INTO Habitat VALUES ('Lakeside Forests', '49.303974, -123.1408');
INSERT INTO Habitat VALUES ('Paddlewheel Forests', '49.312442, -123.14308');
INSERT INTO Habitat VALUES ('A.J.C Forests', '49.295886, -123.14308');
INSERT INTO Habitat VALUES ('Seqwel Woods', '49.312442, -123.14308');
INSERT INTO Habitat VALUES ('Based Forests', '49.303969, -123.14308');

```

Pond

```
INSERT INTO Pond Values ('Paddlewheel Pond', 'poor');
INSERT INTO Pond Values ('Arrow Lake', 'poor');
INSERT INTO Pond Values ('Becker Lake', 'poor');
INSERT INTO Pond Values ('Syilx Lake', 'good');
INSERT INTO Pond Values ('Ellison Pond', 'fair');
```

Forest

```
INSERT INTO Forest Values('Lakeside Forests', 'good');
INSERT INTO Forest Values('Paddlewheel Forests', 'poor');
INSERT INTO Forest Values('A.J.C Forests', 'excellent');
INSERT INTO Forest Values('Seqwel Woods', 'good');
INSERT INTO Forest Values('Based Forests', 'excellent');
```

Plant

```
INSERT INTO Plant
VALUES (1, 'White Water Lily', '50.311342, -124.143080', 'poor',

INSERT INTO Plant
VALUES (2, 'White Water Lily', '48.311342, -122.143080', 'poor',

INSERT INTO Plant
VALUES (3, 'White Water Lily', '47.311342, -123.143080', 'good',

INSERT INTO Plant
VALUES (4, 'Oak Tree', '50.311342, -123.143080', 'good', 'Paddle

INSERT INTO Plant
VALUES (5, 'Maple Tree', '51.311342, -123.143080', 'excellent',
```

PlantedBy

```
INSERT INTO PlantedBy(plantId, rangerId, datePlanted)
VALUES(1, 0005, '2022-04-08');
```

```
INSERT INTO PlantedBy(plantId, rangerId, datePlanted)
VALUES(2, 0005, '2022-04-09');
```

```
INSERT INTO PlantedBy(plantId, rangerId, datePlanted)
VALUES(3, 0001, '2021-05-05');
```

```
INSERT INTO PlantedBy(plantId, rangerId, datePlanted)
VALUES(4, 0002, '2022-09-10');
```

```
INSERT INTO PlantedBy(plantId, rangerId, datePlanted)
VALUES(5, 0003, '2022-04-10');
```

Monitors

```
INSERT INTO Monitors(habitatName, rangerId)
VALUES('Becker Lake', 0003);
```

```
INSERT INTO Monitors(habitatName, rangerId)
VALUES('Lakeside Forests', 0004);
```

```
INSERT INTO Monitors(habitatName, rangerId)
VALUES('Paddlewheel Pond', 0001);
```

```
INSERT INTO Monitors(habitatName, rangerId)
VALUES('Paddlewheel Forests', 0002);
```

```
INSERT INTO Monitors(habitatName, rangerId)
```

```
VALUES('A.J.C Forests', 0005);
```

ParkRanger

```
INSERT INTO ParkRanger(rangerID, rangerName, dateJoined)
VALUES (0001, 'Aiden Kerr', '2020-03-01');
```

```
INSERT INTO ParkRanger(rangerID, rangerName, dateJoined)
VALUES (0002, 'Cindy Cui', '2021-07-05');
```

```
INSERT INTO ParkRanger(rangerID, rangerName, dateJoined)
VALUES (0003, 'Joel Bonnie', '2021-11-21');
```

```
INSERT INTO ParkRanger(rangerID, rangerName, dateJoined)
VALUES (0004, 'Seva Lynov', '2020-01-03');
```

```
INSERT INTO ParkRanger(rangerID, rangerName, dateJoined)
VALUES (0005, 'Jessica Bator', '2022-04-07');
```

Manages

```
INSERT INTO Manages(rangerId, facilityName)
VALUES (0002, 'A.J.C Memorial Outhouse');
```

```
INSERT INTO Manages(rangerId, facilityName)
VALUES (0001, 'A.J.C Memorial Storage Center');
```

```
INSERT INTO Manages(rangerId, facilityName)
VALUES (0003, 'Lakeside Water Maintenance Center');
```

```
INSERT INTO Manages(rangerId, facilityName)
VALUES (0004, 'Pebble Beach Hotdog and Snorkle Stand');
```

```
INSERT INTO Manages(rangerId, facilityName)
VALUES (0005, 'Treacherous Tip');
```

Facility

```
INSERT INTO Facilities(facilityName, coordinates)
VALUES ('A.J.C Memorial Outhouse', '49.295886, -123.146101')
```

```
INSERT INTO Facilities(facilityName, coordinates)
VALUES ('A.J.C Memorial Storage Center', '49.295886, -123.146101')
```

```
INSERT INTO Facilities(facilityName, coordinates)
VALUES ('Lakeside Water Maintenance Center', '49.303974, -123.146101')
```

```
INSERT INTO Facilities(facilityName, coordinates)
VALUES ('Pebble Beach Hotdog and Snorkle Stand', '49.303969, -123.146101')
```

```
INSERT INTO Facilities(facilityName, coordinates)
VALUES ('Treacherous Mountain Equipment Center', '49.299666, -123.146101')
```

Equipment

```
INSERT INTO Equipment(equipmentId, equipmentType, facilityName)
VALUES (00001, 'Snorkle', 'Pebble Beach Hotdog and Snorkle Stand')
```

```
INSERT INTO Equipment(equipmentId, equipmentType, facilityName)
VALUES (00002, 'Rope', 'Treacherous Mountain Equipment Center')
```

```
INSERT INTO Equipment(equipmentId, equipmentType, facilityName)
VALUES (000023, 'Water Treatment Kit', 'Lakeside Water Maintenance Center')
```

```
INSERT INTO Equipment(equipmentId, equipmentType, facilityName)
```

```
VALUES (00001, 'Grill', 'Pebble Beach Hotdog and Snorkle Stand')

INSERT INTO Equipment(equipmentId, equipmentType, facilityName)
VALUES (00001, 'Ranger Uniforms', 'A.J.C Memorial Storage Center')
```

Visitor

```
INSERT INTO Visitor(passId, dateVisited, rangerId)
VALUES (00001, '2023-04-01', 0005);

INSERT INTO Visitor(passId, dateVisited, rangerId)
VALUES (00002, '2023-04-01', 0004);

INSERT INTO Visitor(passId, dateVisited, rangerId)
VALUES (00003, '2023-04-01', 0001);

INSERT INTO Visitor(passId, dateVisited, rangerId)
VALUES (00004, '2023-10-21', 0002);

INSERT INTO Visitor(passId, dateVisited, rangerId)
VALUES (00005, '2023-11-12', 0003);

INSERT INTO Visitor(passId, dateVisited, rangerId)
VALUES (00006, '2024-04-07', 0004);
```

Area

```
INSERT INTO Area(coordinates, areaName)
VALUES ('49.303969, -123.156437', 'Pebble Beach');

INSERT INTO Area(coordinates, areaName)
VALUES ('49.312442, -123.143080', 'Northernmost Natures');
```

```
INSERT INTO Area(coordinates, areaName)
VALUES ('49.303974, -123.140523', 'Lakeside');
```

```
INSERT INTO Area(coordinates, areaName)
VALUES ('49.295886, -123.146101', 'A.J.C Memorial Sanctuary');
```

```
INSERT INTO Area(coordinates, areaName)
VALUES ('49.299666, -123.117440', 'Treacherous Tip');
```